CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE
VOLUME 1 – BID BOOKLET

TABLE OF CONTENTS

Introduction

This Bid Booklet is intended to provide general information necessary for bidding on a DDC public works project and is part of the Contract Documents, as per Article 1.1 of the Standard Construction Contract.

As this contract is solicited via the PASSPort system, the bidder will be required to complete all of the PASSPort forms and questionnaires. These forms and questionnaires, along with the bidder's responses, will become part of the Bid Booklet.

Additional information on the PASSPort system can be found at the following website:
https://www1.nyc.gov/site/mocs/systems/passport-user-materials.page

Bid Submission Requirements

THE FOLLOWING MUST BE COMPLETED AND SUBMITTED FOR THE BID TO BE CONSIDERED RESPONSIVE:

1. Completed electronic bid submission in PASSPort;
    a. All required fields in PASSPort must be completed.
2. One-page signed Bid Submission Form delivered in person to DDC before the bid due date; and
3. Bid security, if required.
    a. If Bid security is in a form of a bid bond, bidders must include it with their electronic PASSPort submission.
    b. If Bid security is in a form of a certified check, bidders must deliver the certified check with the signed Bid Submission Form.

BIDDERS ARE ADVISED THAT PAPER BID SUBMISSIONS WILL BE DEEMED NON-RESPONSIVE. BIDDERS MUST SUBMIT THEIR BIDS ELECTRONICALLY IN PASSPORT, PROVIDE THE BID SECURITY, AND DELIVER TO DDC THE ONE-PAGE SIGNED BID SUBMISSION FOR THE BID TO BE CONSIDERED RESPONSIVE.

THE FOLLOWING MAY RESULT IN THE BID BEING FOUND NON-RESPONSIVE:

1. Any discrepancy between the total bid price listed on the Bid Submission Form and the bid information submitted in PASSPort.
2. Failure to upload required files or documents as part of a mandatory PASSPort Questionnaire response.
3. Uploading an incorrect file as part of a mandatory PASSPort Questionnaire response.

Notices to Bidders

Pre Bid Questions (PBQs)

Please be advised that PBQs should be submitted to the Agency Contact Person (CSB_projectinquiries@ddc.nyc.gov) at least five (5) business days (by 5:00 PM EST) prior to the bid opening date as indicated in the PASSPort procurement.

All PBQs must reference the Project ID. If a bidder has multiple PBQs for the same Project ID, the PBQs must be numbered sequentially, even if they are submitted separately.

While the PASSPort system has a facility for submitting inquiries, bidders are directed to send PBQs as directed above instead of using the PASSPort inquiry system.

Inquiries sent using the PASSPort inquiry system will not be considered PBQs.

NYC Contract Financing Loan Fund

If your business is working as a prime or subcontractor on a project with a City agency or City-funded entity, you may be eligible for a Contract Financing Loan from a participating lender coordinated with the NYC Department of Small Business Services (SBS). Loan repayment terms align with the contract payment schedule.

For more information: Call 311 or visit https://www1.nyc.gov/nycbusiness/article/contract-financing-loan-fund

M/WBE Notice to Prospective Contractors

PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT (9/2020 version)

ARTICLE I. M/WBE PROGRAM

Section 6-129 of the Administrative Code of the City of New York ("Section 6-129") establishes the program for participation in City procurement ("M/WBE Program") by minority-owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan") and are detailed below. Contracts solicited through the Procurement and Sourcing Solutions Portal (PASSPort) will contain a Schedule B in the format outlined in the Schedule B – M/WBE Utilization Plan & PASSPort rider. The provisions of this notice will apply to contracts subject to the M/WBE Program established by Section 6-129 regardless of solicitation source.

The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129.

References to MBEs or WBEs shall also include such businesses certified pursuant to the executive law where credit is required by section 311 of the New York City Charter or other provision of law.

Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts.

Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD

AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, ("**Participation Goals**"), as applicable, are set forth on Schedule B, Part 1 to this Contract (see Page 1, Line 1 Total Participation Goals) or will be set forth on Schedule B, Part 1 to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with DSBS as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part 2 (see Pages1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part 2 (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed non-responsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part 2 (see Pages 1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART 2). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART 3). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multi-year contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work.** In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the firms' commencement of work. A list of city-certified MBE and WBE firms may be obtained from the DSBS

website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6451, or by visiting or writing DSBS at One Liberty Plaza, New York, New York, 10006, 11th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to,: the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE** Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE** Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE** Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or $500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of **the Participation Goals**.

(a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the Participation Goals in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part 3 of Schedule B **and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at MWBEModification@ddc.nyc.gov**. **Full or partial waiver requests that are received later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due may be rejected as untimely**. Bidders, proposers, or contractors, as applicable, who have submitted timely requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of

subcontracting in its **M/WBE** Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE** Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE** Utilization Plan. (a) A Contractor may request a modification of its **M/WBE** Utilization Plan after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's **M/WBE** Utilization Plan if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals**. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;

(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;

(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;

(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the **M/WBE** Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;

(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;

(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;

(vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;

(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's M/WBE officer shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE Utilization Plan** would be awarded to subcontractors.

12. If the Contractor was required to identify in its bid or proposal the MBEs and/or WBEs they intended to use in connection with the performance of the Contract or Task Order, substitutions to the identified firms may only be made with the approval of the Agency, which shall only be given when the Contractor has proposed to use a firm that would satisfy the **Participation Goals** to the same extent as the firm previously identified, unless the Agency determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts. In making such determination, the Agency shall require evidence of the efforts listed in Section 11(a) above, as applicable, along with any other relevant factors.

13. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE** Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its **M/WBE** Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

15. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B

MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of a **M/WBE** Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE** Utilization Plan.

2. Pursuant to DSBS rules, construction contracts that include a requirement for a **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;

(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;

(c) making a finding that the Contractor is in default of the Contract;

(d) terminating the Contract;

(e) declaring the Contractor to be in breach of Contract;

(f) withholding payment or reimbursement;

(g) determining not to renew the Contract;

(h) assessing actual and consequential damages;

(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional

procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;

(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or

(k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6-129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in PASSPort as caution data.

NYC Mayor's Office of Contract Services

SCHEDULE B – M/WBE Utilization Plan

Part 1: M/WBE Participation Goals

Contract Overview (To be completed by contracting agency)

APT E-Pin# 85023B0061 FMS Project ID# QED1059

Project Title Replacement Of Distribution Water Mains in Various Locationset Agency PIN# 8502022WM0005C

Contracting Agency NYC Department of Design and Construction Bid/Proposal Response Date TBD

Agency Address 30-30 Thomson Avenue City Long Island City State NY ZIP 11101

Contact Person Janelle Husain-Singh Title M/WBE Outreach & Compliance Analyst

Telephone 718-391-1322 Email husainja@ddc.nyc.gov

Project Description (attach additional pages if necessary)

Install New Distribution Water Mains to replace the aging Water Pipes and improve Water Distribution in the project area.

Bidder or proposer ☐ is required OR ☒ is not required to specifically identify the contact information of all M/WBE firms they intend to use as a subcontractor on this contract, including the M/WBE vendor name, address and telephone number in the space provided below in Part 2 Section 4.

M/WBE Participation Goals for Services

Enter the percentage amount for each category or for an unspecified Goal.

Prime Contract Industry: Construction

Category and Breakdown:

Unspecified 12.00 %

Black American 4.00 %

Hispanic American 7.00 %

Asian American ____ %

Women ____ %

Total Participation Goals 23.00 % *Line 1*

Part 2: M/WBE Participation Plan

(To be completed by the bidder/proposer unless granted a full waiver, which must be submitted with the bid/proposal in lieu of this form)

Section 1: Prime Contractor Contact Information

Tax ID# 11-3493939 FMS Vendor ID# 0001663124

Business Name Maspeth Supply Co., LLC Contact Person Russ Blatt

Business Address 55-14 48th Street City Maspeth State NY ZIP 11378

Telephone 718-786-7000 x121 Email russblatt@gmail.com

Section 3: Contractor M/WBE Utilization Plan

Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation. Check applicable box. The Proposer or Bidder will fulfill the M/WBE Participation Goals:

☐ As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor: ☐ MBE ☐ WBE

☐ As a Qualified Joint Venture with an M/WBE partner, in which the value of the M/WBE partner's participation and/or the value of any work subcontracted to other M/WBE firms is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals.

☒ As a non-M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable.

Section 2: M/WBE Utilization Goal Calculation

Prime Contractor Adopting Agency Participation Goals

For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.

Total Bid/Proposal Value $ 14716637.09

multiplied by x

Total Participation Goals 23 % *(Line 1 above)*

Calculated M/WBE Participation Amount $ 3384826.53 *Line 2*

OR

Prime Contractor With Partial Waiver Approval Adopting Revised Participation Goals

For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Revised M/WBE Participation Goals.

Total Bid/Proposal Value $ ____

multiplied by x

Total Revised Participation Goals ____ %

Calculated M/WBE Participation Amount $ ____ *Line 3*

Tax ID# 11-3493939 APT E-Pin#

Section 4: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status? 23 %

Enter a brief description of the type(s) and dollar value of subcontracts for all services you plan to subcontract if awarded this contract, along with the anticipated start and end dates for such subcontracts. For each item, indicate whether the work is designated for participation by an M/WBE. Where the contracting agency's solicitation has indicated a requirement that the bidder or proposer specifically identify the contact information of all M/WBEs they intend to use on this contract, vendors must also include the M/WBE vendor name, address and telephone number in the space provided below. Use additional sheets if necessary.

	Description of Work	Start Date (MM/YY)	End Date (MM/YY)	Planned $ Amount	Designated for M/WBE Y	Designated for M/WBE N	M/WBE Vendor Name	M/WBE Address	M/WBE Telephone
1.	Trucking	9 /23	8 /25	$590000	☑	☐	Alliance Trucking	9017 Ave. K, Brooklyn NY 11236	(371) 642 - 8212
2.	Crossing Guards	9 /23	8 /25	$749000	☑	☐	A & B Contracting Services, Inc.	33 West 19th Street, New York, NY 10011	(917) 204 - 2282
3.	Trucking	9 /23	8 /25	$749000	☑	☐	Phantom Trucking	170 E. 13th Street, Bethpage NY 11714	(347) 278 - 7708
4.	Trucking/Labor	9 /23	8 /25	$749000	☑	☐	J. Rambo, LLC	11 Vine Street, Jamesburg, NJ 08831	(732) 207 - 4716
5.	Photographs	9 /23	8 /25	$50000	☑	☐	Nadine Plaut	One Linden Place, Suite 200, Great Neck, NY 11021	(516) 829 - 1022
6.	Arborist	9 /23	8 /25	$134000	☑	☐	JP Arbor Consulting	183 Grant STreet, New Providence, NJ 07974	(646) 784 - 1689
7.	Environmental Reports	9 /23	8 /25	$100000	☑	☐	AMC Engineering	111-36 42nd Avenue, Astoria NY 11105	(718) 545 - 0474
8.	Construction Testing	9 /23	8 /25	$170000	☑	☐	CM Testing Lab.	31 Denton Avenue, Garden City Park, NY 11040	(516) 488 - 8850
9.	Tree Pruning	9 /23	8 /25	$70000	☑	☐	Valley Tree Landscaping and Service	30 W. Park Avenue, Suite 501 Long Beach, NY 11561	(516) 889 - 7534
10.	Rodent Control	9 /23	8 /25	$5000	☑	☐	Urban Environmental	203-67 27th Avenue, Bayside, NY 11360	(917) 299 - 4655

Section 5: Vendor Certification and Required Affirmations

I hereby:

1. *acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;*
2. *affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;*
3. *agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;*
4. *agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such Goals are modified by the Agency; and*
5. *agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or if a partial waiver is obtained or such Goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.*

Signature Russ Blatt Date April 25, 2023

Print Name Russ Blatt Title Supervisory Manager

Tax ID# 11-3493939 APT E-Pin#

Section 4: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status? 23 %

Enter a brief description of the type(s) and dollar value of subcontracts for all services you plan to subcontract if awarded this contract, along with the anticipated start and end dates for such subcontracts. For each item, indicate whether the work is designated for participation by an M/WBE. Where the contracting agency's solicitation has indicated a requirement that the bidder or proposer specifically identify the contact information of all M/WBEs they intend to use on this contract, vendors must also include the M/WBE vendor name, address and telephone number in the space provided below. Use additional sheets if necessary.

	Description of Work	Start Date (MM/YY)	End Date (MM/YY)	Planned $ Amount	Designated for M/WBE Y	Designated for M/WBE N	M/WBE Vendor Name	M/WBE Address	M/WBE Telephone
1.	Rodent Control	9 /23	8 /25	$10000	☐	☐	Joe's Pest Control	1007 Carroll Street, Brooklyn, NY 11225	(718) 493 - 1845
2.	Street Markings	8 /23	8 /25	$10000	☐	☐	Directions, Signs and Markings	15-50 200 Street, Bayside, NY 11360	(646) 302 - 3501
3.		/	/	$	☐	☐			( ) -
4.		/	/	$	☐	☐			( ) -
5.		/	/	$	☐	☐			( ) -
6.		/	/	$	☐	☐			( ) -
7.		/	/	$	☐	☐			( ) -
8.		/	/	$	☐	☐			( ) -
9.		/	/	$	☐	☐			( ) -
10.		/	/	$	☐	☐			( ) -

Section 5: Vendor Certification and Required Affirmations

I hereby:

1. *acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;*
2. *affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;*
3. *agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;*
4. *agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such Goals are modified by the Agency; and*
5. *agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or if a partial waiver is obtained or such Goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.*

Signature Russ Blatt Date April 25, 2023

Print Name Russ Blatt Title Supervisory Manager

Affirmation

The Bidder affirms and declares:

1. The said bidder is of lawful age and the only one interested in this bid; and no person, firm or corporation other than hereinbefore named has any interest in this bid, or in the Contract proposed to be taken.

2. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief: (1) the prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (2) unless otherwise required by law, the prices quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

3. No councilman or other officer or employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested in this bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

4. The bidder is not in arrears to the City of New York upon debt or contract or taxes, and is not a defaulter, as surety or otherwise, upon any obligation of the City of New York, and has not been declared not responsible, or disqualified, by any agency of the City of New York or State of New York, nor is there any proceeding pending relating to the responsibility or qualification of the bidder to receive public contracts except as set forth on the Affirmation included as disclosed in PASSPort.

5. The bidder hereby affirms that is has paid all applicable City income, excise and other taxes for all it has conducted business activities in New York City.

6. The bidder, as an individual, or as a member, partner, director or officer of the bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that should this bid be accepted by the City and the Contract awarded to him, he and his subcontractors engaged in the performance:

   (1) will comply with the provisions of Section 6-108 of the Administrative Code of the City of New York and the non-discrimination provisions of Section 220a of the New York State Labor Law, as more expressly and in detail set forth in the Agreement; (2) will comply with Section 6-109 of the Administrative Code of the City of New York in relation to minimum wages and other stipulations as more expressly and in detail set forth in the Agreement; (3) have complied with the provisions of the aforesaid laws since their respective effective dates, and (4) will post notices to be furnished by the City, setting forth the requirements of the aforesaid laws in prominent and conspicuous places in each and every plant, factory, building and structure where employees engaged in the performance of the Contract can readily view it, and will continue to keep such notices posted until the supplies, materials and equipment, or work labor and services required to be furnished or rendered by the Contractor have been finally accepted by the City. In the event of any breach or violation of the foregoing, the Contractor may be subject to damages, liquidated or otherwise, cancellation of the Contract and suspension as a

bidder for a period of three years. (The words, "the bidder", "he", "his", and "him" where used shall mean the individual bidder, firm, partnership or corporation executing this bid).

7. Compliance Report

   The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, (1) represents that his attention has been specifically drawn to Executive Order No. 50, dated April 25, 1980, on Equal Employment Compliance of the contract, and (2) warrants that he will comply with the provisions of Executive Order No. 50. The Employment Report must be submitted as part of the bid.

8. The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, executes this document expressly warranting that he will comply with: (1) the provision of the contract on providing records, Chapter 8.

9. By submission of this bid, the bidder certifies that it now has and will continue to have the financial capability to fully perform the work required for this contract. Any award of this contract will be made in reliance upon such certification. Upon request therefor, the bidder will submit written verification of such financial capability in a form that is acceptable to the department.

10. In accordance with Section 165 of the State Finance Law, the bidder agrees that tropical hardwoods, as defined in Section 165 of the State Finance Law, shall not be utilized in the performance of this Contract, except as the same are permitted by the foregoing provision of law.

11. The bidder has visited and examined the site of the work and has carefully examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions, and will provide, furnish and deliver all the work, materials, supplies, tools and appliances for all labor and materials necessary or required for the hereinafter named work, all in strict conformity with the Contract, for the prices set forth in the Bid Schedule.

12. M/WBE UTILIZATION PLAN: By signing its bid, the bidder agrees to the M/WBE Vendor Certification and Required Affirmations set forth below, unless a full waiver of the Participation Goals is granted.

    I hereby:

    1) acknowledge my understanding of the M/WBE participation requirements as set forth in this Contract and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York and the rules promulgated thereunder;

    2) affirm that the information supplied in support of the M/WBE Utilization Plan is true and correct;

    3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;

    4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and

    agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or If a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.

QUALIFICATION FORM

Name of Contractor: ___Maspeth Supply Co., LLC_____

Name of Project: ___QED-1059 – Rehabilitation of Distribution Water Mains, Various Locations, Queens

Location of Project: _____Queens_____

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: _____Harvey Lyons_____

Title:_____Member_____ Phone Number: _718-786-7000_____

Brief description of the Project completed or the Project in progress: _____

__QED-1022 Reconstruction of Distribution Water Mains in Richmond Hill, Queens

Was the Project performed as a prime, a subcontractor or a sub-subcontractor:_____Prime__

Amount of Contract, Subcontract or Sub-subcontract: _Contract $29,265,241.70_____

Start Date and Completion Date: ___Start – 3/1/18, Completion Date 6/27/20_____

****

Name of Contractor: ___Maspeth Supply Co., LLC_____

Name of Project: HWQ-411B Reconstruction of Albert Road Area. Ozone Park Streets, Queens

Location of Project: _____Ozone Park, Queens_____

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: _____Harvey Lyons_____

Title:_____Member_____ Phone Number: _718-786-7000_____

Brief description of the Project completed or the Project in progress: _Reconstruction of water mains, sewers and roadways in the Albert Road Area of Ozone Park_____

Was the Project performed as a prime, a subcontractor or a sub-subcontractor:____Contractor_

Amount of Contract, Subcontract or Sub-subcontract: _____$ **43,226,257.67**_____

Start Date and Completion Date: Start – 7/27/2015, Completion Date 6/30/20 __

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN
BID SCHEDULE

Project ID: QED1059
ePIN: 85023B0061

TOTAL BID PRICE: $14,716,637.09

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col.8
Seq. No	Item Number	Item Description	Engineer's Estimate of Quantity	Unit	Unit Price	Extended Amount	Price Criteria
1	4.02 AB-R	ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK	15,358.00	S.Y.	$15.00	$230,370.00	
2	4.02 AF-R	ASPHALTIC CONCRETE WEARING COURSE, 2" THICK	13,500.00	S.Y.	$0.01	$135.00	
3	4.02 CA	BINDER MIXTURE	7,517.00	TONS	$5.00	$37,585.00	
4	4.04 H	CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION, (HIGH-EARLY STRENGTH)	1,826.00	C.Y.	$75.00	$136,950.00	
5	4.05 AX	HIGH-EARLY STRENGTH REINFORCED CONCRETE PAVEMENT (BUS STOPS)	65.00	C.Y.	$800.00	$52,000.00	
6	4.08 AA	CONCRETE CURB (18" DEEP)	350.00	L.F.	$100.00	$35,000.00	
7	4.09 AD	STRAIGHT STEEL FACED CONCRETE CURB (18" DEEP)	400.00	L.F.	$10.00	$4,000.00	
8	4.09 AF	STRAIGHT STEEL FACED CONCRETE CURB (27" DEEP)	105.00	L.F.	$0.01	$1.05	
9	4.09 BD	DEPRESSED STEEL FACED CONCRETE CURB (18" DEEP)	50.00	L.F.	$0.01	$0.50	
10	4.09 CD	CORNER STEEL FACED CONCRETE CURB (18" DEEP)	50.00	L.F.	$160.00	$8,000.00	
11	4.13 AAS	4" CONCRETE SIDEWALK (UNPIGMENTED)	4,000.00	S.F.	$10.00	$40,000.00	
12	4.13 BAS	7" CONCRETE SIDEWALK (UNPIGMENTED)	100.00	S.F.	$11.00	$1,100.00	
13	4.13 DE	EMBEDDED PREFORMED DETECTABLE WARNING UNITS	50.00	S.F.	$7.00	$350.00	
14	4.18 A	MAINTENANCE TREE PRUNING (UNDER 12" CAL.)	195.00	EACH	$180.00	$35,100.00	
15	4.18 B	MAINTENANCE TREE PRUNING (12" TO UNDER 18" CAL.)	60.00	EACH	$235.00	$14,100.00	
16	4.18 C	MAINTENANCE TREE PRUNING (18" TO UNDER 24" CAL.)	30.00	EACH	$310.00	$9,300.00	
17	4.18 D	MAINTENANCE TREE PRUNING (24" CAL. AND OVER)	60.00	EACH	$355.00	$21,300.00	
18	4.21	TREE CONSULTANT	2,070.00	P/HR	$19.18	$39,702.60	
19	51.41S001	STANDARD CATCH BASIN, TYPE 1	3.00	EACH	$7,500.00	$22,500.00	
20	52.11D12	12" DUCTILE IRON PIPE BASIN CONNECTION	150.00	L.F.	$400.00	$60,000.00	
21	52.41D06R	6" D.I.P. HOUSE CONNECTION DRAIN ON CONCRETE CRADLE (RECONNECTION)	200.00	L.F.	$0.01	$2.00	
22	52.41D08R	8" D.I.P. HOUSE CONNECTION DRAIN ON CONCRETE CRADLE (RECONNECTION)	200.00	L.F.	$0.01	$2.00	
23	52.41V06R	6" E.S.V.P. HOUSE CONNECTION DRAIN ON CONCRETE CRADLE (RECONNECTION)	200.00	L.F.	$75.00	$15,000.00	
24	52.41V08R	8" E.S.V.P. HOUSE CONNECTION DRAIN ON CONCRETE CRADLE (RECONNECTION)	200.00	L.F.	$0.01	$2.00	
25	54.12CS	CLEANING OF DRAINAGE STRUCTURES	650.00	C.Y.	$135.00	$87,750.00	
26	6.02 AAN	UNCLASSIFIED EXCAVATION	3,695.14	C.Y.	$0.01	$36.95	
27	6.25 RS	TEMPORARY SIGNS	5,000.00	S.F.	$0.01	$50.00	
28	6.26	TIMBER CURB	21,000.00	L.F.	$0.01	$210.00	
29	6.28 AA	LIGHTED TIMBER BARRICADES	1,500.00	L.F.	$2.00	$3,000.00	
30	6.40 DU	ENGINEER'S FIELD OFFICE (JOINT USE) (TYPE DU)	30.00	MONTH	$3,300.00	$99,000.00	
31	6.43 D	DIGITAL PHOTOGRAPHS	840.00	SETS	$40.00	$33,600.00	
32	6.44	THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE)	21,000.00	L.F.	$2.00	$42,000.00	
33	6.49	TEMPORARY PAVEMENT MARKINGS (4" WIDE)	21,000.00	L.F.	$0.01	$210.00	
34	6.52 CG	CROSSING GUARD	16,500.00	P/HR	$5.00	$82,500.00	
35	6.53	REMOVE EXISTING LANE MARKINGS (4" WIDE)	21,000.00	L.F.	$0.01	$210.00	
36	6.55	SAWCUTTING EXISTING PAVEMENT	5,994.00	L.F.	$0.01	$59.94	
37	6.75	GRINDING EXISTING ASPHALTIC CONCRETE WEARING COURSE	50.00	C.Y.	$0.01	$0.50	
38	6.84 B	LOLLIPOP TYPE BUS STOP SIGNS	1.00	F.S.	$10,000.00	$10,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 10,000.00
39	6.87	PLASTIC BARRELS	3,500.00	EACH	$1.00	$3,500.00	
40	6.91	REFLECTIVE CRACKING MEMBRANE (18" WIDE)	5,994.00	L.F.	$16.86	$101,058.84	
41	60.11R516	FURNISHING AND DELIVERING 16-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	55.00	L.F.	$200.00	$11,000.00	
42	60.11R520	FURNISHING AND DELIVERING 20-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	50.00	L.F.	$60.00	$3,000.00	
43	60.11R606	FURNISHING AND DELIVERING 6-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	950.00	L.F.	$30.00	$28,500.00	

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN
BID SCHEDULE

Project ID: QED1059
ePIN: 85023B0061

TOTAL BID PRICE: $14,716,637.09

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col.8
Seq. No	Item Number	Item Description	Engineer's Estimate of Quantity	Unit	Unit Price	Extended Amount	Price Criteria
44	60.11R608	FURNISHING AND DELIVERING 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	9,055.00	L.F.	$65.00	$588,575.00	
45	60.11R612	FURNISHING AND DELIVERING 12-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	10,785.00	L.F.	$100.00	$1,078,500.00	
46	60.12D06	LAYING 6-INCH DUCTILE IRON PIPE AND FITTINGS	950.00	L.F.	$16.00	$15,200.00	
47	60.12D08	LAYING 8-INCH DUCTILE IRON PIPE AND FITTINGS	9,443.00	L.F.	$85.00	$802,655.00	
48	60.12D12	LAYING 12-INCH DUCTILE IRON PIPE AND FITTINGS	11,185.00	L.F.	$85.00	$950,725.00	
49	60.12D16	LAYING 16-INCH DUCTILE IRON PIPE AND FITTINGS	75.00	L.F.	$350.00	$26,250.00	
50	60.12D20	LAYING 20-INCH DUCTILE IRON PIPE AND FITTINGS	70.00	L.F.	$50.00	$3,500.00	
51	60.13M0A24	FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24-INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	23.83	TONS	$34,000.00	$810,220.00	
52	60.18BJC20EL	FURNISHING, DELIVERING AND INSTALLING BELL JOINT CLAMPS, COMPLETE FOR 20-INCH PIPE AND LESS	25.00	EACH	$0.01	$0.25	
53	61.11DMM06	FURNISHING AND DELIVERING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	65.00	EACH	$2,400.00	$156,000.00	
54	61.11DMM08	FURNISHING AND DELIVERING 8-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	35.00	EACH	$3,150.00	$110,250.00	
55	61.11DMM12	FURNISHING AND DELIVERING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	35.00	EACH	$5,350.00	$187,250.00	
56	61.11DMM20	FURNISHING AND DELIVERING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	$1.00	$1.00	
57	61.11TWC03	FURNISHING AND DELIVERING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	15.00	EACH	$2,200.00	$33,000.00	
58	61.11TWC04	FURNISHING AND DELIVERING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	5.00	EACH	$3,500.00	$17,500.00	
59	61.11TWC06	FURNISHING AND DELIVERING 6-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	40.00	EACH	$1,389.00	$55,560.00	
60	61.11TWC08	FURNISHING AND DELIVERING 8-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	$3,500.00	$3,500.00	
61	61.12DMM06	SETTING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	65.00	EACH	$1,850.00	$120,250.00	
62	61.12DMM08	SETTING 8-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	35.00	EACH	$1,850.00	$64,750.00	
63	61.12DMM12	SETTING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	35.00	EACH	$2,000.00	$70,000.00	
64	61.12DMM20	SETTING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	$100.00	$100.00	
65	61.12TWC03	SETTING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	15.00	EACH	$2,200.00	$33,000.00	
66	61.12TWC04	SETTING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	5.00	EACH	$3,500.00	$17,500.00	
67	61.12TWC06	SETTING 6-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	40.00	EACH	$0.01	$0.40	
68	61.12TWC08	SETTING 8-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	$1,450.00	$1,450.00	
69	62.11SD	FURNISHING AND DELIVERING HYDRANTS	65.00	EACH	$5,000.00	$325,000.00	
70	62.12SG	SETTING HYDRANTS COMPLETE WITH WEDGE TYPE RETAINER GLANDS	65.00	EACH	$1,000.00	$65,000.00	
71	62.13RH	REMOVING HYDRANTS	30.00	EACH	$750.00	$22,500.00	
72	62.14FS	FURNISHING, DELIVERING AND INSTALLING HYDRANT FENDERS	130.00	EACH	$400.00	$52,000.00	
73	63.11VC	FURNISHING AND DELIVERING VARIOUS CASTINGS	65.00	TONS	$1,500.00	$97,500.00	

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN
BID SCHEDULE

Project ID: QED1059
ePIN: 85023B0061

TOTAL BID PRICE: $14,716,637.09

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col.8
Seq. No	Item Number	Item Description	Engineer's Estimate of Quantity	Unit	Unit Price	Extended Amount	Price Criteria
74	64.11EL	WITHDRAWING AND REPLACING HOUSE SERVICES USING 1-1/2-INCH OR LARGER SCREW TAPS	120.00	EACH	$1,500.00	$180,000.00	
75	64.11ST	WITHDRAWING AND REPLACING HOUSE SERVICES USING SMALLER THAN 1-1/2-INCH SCREW TAPS	270.00	EACH	$600.00	$162,000.00	
76	64.12COEG	CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	500.00	L.F.	$0.01	$5.00	
77	64.12COLT	CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	500.00	L.F.	$0.01	$5.00	
78	64.12ESEG	EXTENDING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	500.00	L.F.	$50.00	$25,000.00	
79	64.12ESLT	EXTENDING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	500.00	L.F.	$400.00	$200,000.00	
80	64.13WC08	FURNISHING, DELIVERING AND INSTALLING WET CONNECTION SLEEVE ON 8-INCH WATER MAIN PIPE WITH VARIOUS OUTLETS	18.00	EACH	$850.00	$15,300.00	
81	64.13WC12	FURNISHING, DELIVERING AND INSTALLING WET CONNECTION SLEEVE ON 12-INCH WATER MAIN PIPE WITH VARIOUS OUTLETS	42.00	EACH	$1,500.00	$63,000.00	
82	64.13WC20	FURNISHING, DELIVERING AND INSTALLING WET CONNECTION SLEEVE ON 20-INCH WATER MAIN PIPE WITH VARIOUS OUTLETS	1.00	EACH	$1.00	$1.00	
83	65.11BR	FURNISHING, DELIVERING AND INSTALLING BANDS, RODS, WASHERS, ETC., COMPLETE, FOR RESTRAINING JOINTS	9,700.00	LBS.	$0.01	$97.00	
84	65.21PS	FURNISHING AND PLACING POLYETHYLENE SLEEVE	10,378.50	L.F.	$2.00	$20,757.00	Unit price bid shall not be less than: $ 2.00
85	65.31FF	FURNISHING, DELIVERING AND PLACING FILTER FABRIC	173,115.00	S.F.	$0.10	$17,311.50	Unit price bid shall not be less than: $ 0.10
86	65.51PC	FURNISHING AND PLACING CAST-IN-PLACE CONCRETE CLASS 40 AND PRECAST CONCRETE CLASS 50	15.00	C.Y.	$500.00	$7,500.00	
87	65.61SS	FURNISHING, DELIVERING AND PLACING STRUCTURAL, REINFORCING AND MISCELLANEOUS STEEL	10,500.00	LBS.	$1.00	$10,500.00	
88	65.71SG	FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR SCREENED BROKEN STONE BEDDING	567.91	C.Y.	$1.00	$567.91	
89	7.13 B	MAINTENANCE OF SITE	24.00	MONTH	$8,000.00	$192,000.00	Unit price bid shall not be less than: $ 8,000.00
90	7.35	PEDESTRIAN CHANNELIZER	21,000.00	L.F.	$20.00	$420,000.00	
91	7.88 AA	RODENT INFESTATION SURVEY AND MONITORING	1.00	L.S.	$10,000.00	$10,000.00	Unit price bid shall not be less than: $ 5,000.00
92	7.88 AB	RODENT BAIT STATIONS	2,400.00	EACH	$65.00	$156,000.00	Unit price bid shall not be less than: $ 65.00
93	7.88 AC	BAITING OF RODENT BAIT STATIONS	2,400.00	EACH	$11.00	$26,400.00	Unit price bid shall not be less than: $ 11.00
94	7.88 AD	WATERBUG BAIT APPLICATIONS	1,200.00	BLOCK	$75.00	$90,000.00	Unit price bid shall not be less than: $ 75.00
95	70.31FN	FENCING	20,000.00	L.F.	$2.00	$40,000.00	Unit price bid shall not be less than: $ 2.00
96	70.51EO	EXCAVATION OF BOULDERS IN OPEN CUT	100.00	C.Y.	$50.00	$5,000.00	Unit price bid shall not be less than: $ 50.00
97	70.61RE	ROCK EXCAVATION	100.00	C.Y.	$0.01	$1.00	
98	70.81CB	CLEAN BACKFILL	3,978.00	C.Y.	$15.00	$59,670.00	Unit price bid shall not be less than: $ 15.00
99	70.91SW12	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	54,000.00	S.F.	$0.01	$540.00	
100	70.91SW20	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 20-INCH IN DIAMETER	1,000.00	S.F.	$0.01	$10.00	
101	73.11AB	ADDITIONAL BRICK MASONRY	50.00	C.Y.	$62.50	$3,125.00	Unit price bid shall not be less than: $ 62.50
102	73.21AC	ADDITIONAL CONCRETE	50.00	C.Y.	$62.50	$3,125.00	Unit price bid shall not be less than: $ 62.50
103	73.31AE0	ADDITIONAL EARTH EXCAVATION INCLUDING TEST PITS (ALL DEPTHS)	381.00	C.Y.	$50.00	$19,050.00	Unit price bid shall not be less than: $ 20.00
104	73.41AG	ADDITIONAL SELECT GRANULAR BACKFILL	50.00	C.Y.	$15.00	$750.00	Unit price bid shall not be less than: $ 15.00
105	75.11RT	REMOVAL OF ABANDONED TRACKS	300.00	L.F.	$20.00	$6,000.00	
106	8.01 C1	HANDLING, TRANSPORTING AND DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOIL	6,806.00	TONS	$85.00	$578,510.00	Unit price bid shall not be less than: $ 85.00
107	8.01 C2	SAMPLING AND TESTING OF CONTAMINATED/POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PURPOSES	42.00	SETS	$2,100.00	$88,200.00	Unit price bid shall not be less than: $ 2,000.00
108	8.01 H	HANDLING, TRANSPORTING AND DISPOSAL OF HAZARDOUS SOIL	1,362.00	TONS	$400.00	$544,800.00	Unit price bid shall not be less than: $ 400.00

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN
BID SCHEDULE

Project ID: QED1059
ePIN: 85023B0061

TOTAL BID PRICE: **$14,716,637.09**

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col.8
Seq. No	Item Number	Item Description	Engineer's Estimate of Quantity	Unit	Unit Price	Extended Amount	Price Criteria
109	8.01 S	HEALTH AND SAFETY	1.00	L.S.	$40,000.00	$40,000.00	Unit price bid shall not be less than: $ 15,000.00
110	8.01 W1	REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER	5.00	DAY	$1,700.00	$8,500.00	Unit price bid shall not be less than: $ 1,700.00
111	8.01 W2	SAMPLING AND TESTING OF CONTAMINATED WATER	5.00	SETS	$1,400.00	$7,000.00	Unit price bid shall not be less than: $ 1,400.00
112	9.04 HW	ALLOWANCE FOR ANTI-FREEZE ADDITIVE IN CONCRETE	1.00	F.S.	$10,000.00	$10,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 10,000.00
113	9.23	PRICE ADJUSTMENTS	1.00	F.S.	$15,000.00	$15,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 15,000.00
114	9.28	EXPANDED WORK ALLOWANCE	1.00	F.S.	$950,000.00	$950,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 950,000.00
115	9.30	STORM WATER POLLUTION PREVENTION	1.00	L.S.	$76,000.00	$76,000.00	
116	HW-900H	ALLOWANCE FOR CITY WORK ACCELERATION	1.00	F.S.	$190,000.00	$190,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 190,000.00
117	JB-FS-CE	CON EDISON JB FIXED SUM	1.00	F.S.	$1,610,527.50	$1,610,527.50	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 1,610,527.50
118	JB-FS-VZ	ECS-VERIZON JB FIXED SUM	1.00	F.S.	$316,081.15	$316,081.15	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 316,081.15
119	UTL-6.01.9 (CE)	GAS MAIN CROSSING WATER MAIN UP TO 20" IN DIAMETER (S6.01)	20.00	EACH	$485.00	$9,700.00	Unit price bid shall not be less than: $ 485.00
120	UTL-6.01.9 (NG)	GAS MAIN CROSSING WATER MAIN UP TO 20" IN DIAMETER (S6.01)	34.00	EACH	$485.00	$16,490.00	Unit price bid shall not be less than: $ 485.00
121	UTL-6.03 (CE)	REMOVAL OF ABANDONED GAS FACILITIES. ALL SIZES. (S6.03)	40.00	L.F.	$15.00	$600.00	Unit price bid shall not be less than: $ 15.00
122	UTL-6.03 (NG)	REMOVAL OF ABANDONED GAS FACILITIES. ALL SIZES. (S6.03)	630.00	L.F.	$15.00	$9,450.00	Unit price bid shall not be less than: $ 15.00
123	UTL-6.03.1 (NG)	REMOVAL OF ABANDONED GAS FACILITIES WITH POSSIBLE COAL TAR WRAP. ALL SIZES. (FOR NATIONAL GRID WORK ONLY) (S6.03)	910.00	L.F.	$25.00	$22,750.00	Unit price bid shall not be less than: $ 25.00
124	UTL-6.03.1A (CE)	REMOVAL OF ABANDONED GAS FACILITIES WITH POSSIBLE COAL TAR WRAP. ALL SIZES. (FOR CON EDISON WORK ONLY) (S6.03)	10.00	L.F.	$30.00	$300.00	Unit price bid shall not be less than: $ 30.00
125	UTL-6.04 (CE)	ADJUST HARDWARE TO GRADE USING SPACER RINGS/ADAPTORS. (STREET REPAVING.) (S6.04)	15.00	EACH	$35.00	$525.00	Unit price bid shall not be less than: $ 35.00
126	UTL-6.04 (NG)	ADJUST HARDWARE TO GRADE USING SPACER RINGS/ADAPTORS. (STREET REPAVING.) (S6.04)	200.00	EACH	$35.00	$7,000.00	Unit price bid shall not be less than: $ 35.00
127	UTL-6.05 (CE)	ADJUST HARDWARE TO GRADE BY RESETTING. (ROAD RECONSTRUCTION.) (S6.05)	15.00	EACH	$65.00	$975.00	Unit price bid shall not be less than: $ 65.00
128	UTL-6.05 (NG)	ADJUST HARDWARE TO GRADE BY RESETTING. (ROAD RECONSTRUCTION.) (S6.05)	50.00	EACH	$65.00	$3,250.00	Unit price bid shall not be less than: $ 65.00
129	UTL-6.06 (CE)	SPECIAL CARE EXCAVATION AND BACKFILLING (S6.06)	500.00	C.Y.	$180.00	$90,000.00	Unit price bid shall not be less than: $ 180.00
130	UTL-6.06 (NG)	SPECIAL CARE EXCAVATION AND BACKFILLING (S6.06)	1,028.00	C.Y.	$180.00	$185,040.00	Unit price bid shall not be less than: $ 180.00
131	UTL-6.07 (CE)	TEST PITS FOR GAS FACILITIES (S6.07)	20.00	C.Y.	$200.00	$4,000.00	Unit price bid shall not be less than: $ 100.00
132	UTL-6.07 (NG)	TEST PITS FOR GAS FACILITIES (S6.07)	54.00	C.Y.	$200.00	$10,800.00	Unit price bid shall not be less than: $ 100.00
133	UTL-6.09 (NG)	TRENCH EXCAVATION AND BACKFILL FOR GAS MAINS AND SERVICES. GAS INSTALLED BY OTHERS (FOR NATIONAL GRID WORK ONLY). (S6.09)	50.00	C.Y.	$190.00	$9,500.00	Unit price bid shall not be less than: $ 190.00
134	UTL-6.09A (CE)	TRENCH EXCAVATION AND BACKFILL FOR GAS MAINS AND SERVICES. GAS INSTALLED BY OTHERS (FOR CON EDISON WORK ONLY). (S6.09)	10.00	C.Y.	$200.00	$2,000.00	Unit price bid shall not be less than: $ 200.00
135	UTL-GCS-2WS (CE)	GAS INTERFERENCES AND ACCOMMODATIONS	1.00	F.S.	$20,000.00	$20,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 20,000.00
136	UTL-GCS-2WS (NG)	GAS INTERFERENCES AND ACCOMMODATIONS	1.00	F.S.	$100,000.00	$100,000.00	PRICE BID SHALL BE FOR THE FIXED SUM OF $ 100,000.00
		SUBTOTAL				**$13,636,637.09**	
137	6.39 B	MOBILIZATION	1.00	L.S.	$1,080,000.00	$1,080,000.00	BID PRICE OF MOBILIZATION SHALL NOT EXCEED 8% OF THE ABOVE SUB-TOTAL PRICE.

BID SUBMISSION FORM

Bidder Name: Maspeth Supply Co LLC
Procurement Title: 85023B0061-QED1059 REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC. BOROUGH OF QUEENS

RFx Name: 85023B0061-QED1059 REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC. BOROUGH OF QUEENS

The above-named bidder affirms and declares:

1. The bidder has completed and submitted all required information for the above procurement in the PASSPort system;
2. Any discrepancy between the bid price listed on this Bid Submission Form and the bid information submitted in PASSPort may result in the agency finding the bid non-responsive; and
3. This bid is being submitted in accordance with New York State General Municipal Law § 103.

Total Bid Price: (a/k/a Total Amount) $ 14,716,637.09

Bidder Signature

EIN (if applicable): 11-3493939

(EIN must match the EIN of the entity that submitted bid information in PASSPort)

Bidder Name: Maspeth Supply Co

By: Harvey Lyons

(Name of Partner of Corporate Officer)

Signature: Harvey Lyons

(Signature of Partner or Corporate Officer)

Pre-Award Process

The bidder is advised that as part of the pre-award review of its bid, it may be required to submit the information described in Sections (A) through (D) below. If required, the bidder must submit such information within five (5) business days following receipt of notification from DDC that it is among the low bidders. Such notification from DDC will be by email and will specify the types of information which must be submitted directly to DDC.

In the event the bidder fails to submit the required information within the specified time frame, its bid may be rejected as nonresponsive.

****

(A) **Project Reference Form**: If required, the bidder must complete and submit the Project Reference Form set forth in this Bid Booklet. The Project Reference Form consists of 3 parts: (1) Contracts Completed by the Bidder, (2) Contracts Currently Under Construction by the Bidder, and (3) Pending Contracts Not Yet Started by the Bidder.

(B) **Copy of License**: If required, the bidder must submit a copy of the license under which the bidder will be performing the work. Such license must clearly show the following: (1) Name of the Licensee, (2) License Number, and (3) Expiration date of the License. A copy of the license will be required from bidders for the following contracts: Plumbing Work, Electrical Work and Asbestos Abatement.

(C) **Financial Information**: If required, the bidder must submit the financial information described below:

(1) Audited Financial Statements: Financial statements (Balance Sheet and Income Statement) of the entity submitting the bid, as audited by an independent auditor licensed to practice as a certified public accountant (CPA). Audited financial statements for the three most recent fiscal years must be submitted. Each such financial statement must include the auditor's standard report.

If the bidder does not have audited financial statements, it must submit an affidavit attesting to the fact that the bidder does not have such statements. In addition, the bidder must submit the following documentation covering the three most recent fiscal years: signed federal tax returns, unaudited financial statements, and a "certified review letter" from a certified public accountant (CPA) verifying the unaudited financial statements.

Unless the most recent audited or unaudited financial statement was issued within ninety (90) days, the bidder must submit interim financial information that includes data on financial position and results of operation (income data) for the current fiscal year. Such information may be summarized on a monthly or quarterly basis or at other intervals.

(2) Schedule of Aged Accounts Receivable, including portion due within ninety (90) days.

(D) **Project Specific Information**: If required, the bidder must submit the project specific information described below:

(1) Statement indicating the number of years of experience the bidder has had and in what type of construction.

(2) Resumes of all key personnel to be involved in the project, including the proposed project superintendent.

(3) List of significant pieces of equipment expected to be used for the contract, and whether such equipment is owned or leased.

(4) Description of work expected to be subcontracted, and to what firms, if known.

(5) List of key material suppliers.

(6) Preliminary bar chart time schedule

(7) Contractor's expected means of financing the project. This should be based on the assumption that the contractor is required to finance 2X average monthly billings throughout the contract period.

(8) Any other issues the contractor sees as impacting his ability to complete the project according to the contract.

In addition to the information described in Sections (A) through (D) above, the bidder shall submit such additional information as the Commissioner may require, including without limitation, an explanation or justification for specific unit price items.

The bidder is further advised that it may be required to attend a pre-award meeting with DDC representatives. If such a meeting is convened, the bidder will be advised as to any additional material to be provided.

Project References

Contracts currently under construction by the bidder & Pending contracts not yet started by the bidder

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. (if different from owner)
Please see next page for MASPETH SUPPLY CO's list of work in progress and contracts not started					

Project References

A. Contracts completed by the bidder

List all contracts substantially completed within the last 4 years, up to a maximum of 10 projects, in descending order of date of substantial completion.

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. (If different from owner)
QED102L	Watermain	$26,590,317.33	6/26/2020	NYC DDC Adwait DAS	718-391-2045
QED1037	Watermain	$8,438,301	6/19/2020	NYC DDC Adwait DAS	718-391-2045
QED1023A	Watermain	$15,167,443	6/28/2019	NYC DDC Adwait DAS	718-391-2045
SEX200 47	Sewer water	$14,196,58.	7/8/2022	NYC DDC George Karakal	347-231-3472
SEQ 200378	Sewer water Highway Reconstruction	$18,199,512.33	12/17/2021	NYC DDC Donald Eldi	718-391-2086
SEQ N5002	Sewer watermain	$7,359,668.99	6/23/2020	NYC DDC Natalie Georges	718-391-2477
QEN105I	Watermain	$4,060,684.89	April 2023	DDC NYC Natalie Georges	718-391-2477

B. Contracts currently under construction by the bidder

List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount ($000)	Subcontracted to Others ($000)	Uncompleted Portion ($000)	Date Scheduled to Complete	Owner Reference & Tel. No.	Architect/ Engineer Reference & Tel. No. (If different from owner)
EC-SEW22	Sewer	$774,856.79	$25,896.00	1 million over load	May 2023	DEP NYC Mike Sullivan	718-595-9620
EC-SEW22	Sewer	$9,009,544.50	$264,794.18		April 2023	DEP NYC mike Sullivan	718-595-9620
QED105I	Watermain	$4,060,691.85	$56,617.00		June 2024	DDC NYC Nathalie Georges	718-391-2477
HWPR21M4	Pedestrian Ramps	$3,960,000	$17,816.00		August 2024	DDC NYC Jin Lin	347-578-1947
QED105Y	Watermain	$4,987,757	$3,611,400		Sept. 2024	DDC NYC Natalie Georges	718-391-2477

Maspeth Supply Co., LLC

55-14 48th Street
Maspeth, NY 11378
718-786-7000
Fax 718-937-5164

April 24, 2023

Department of Design & Construction
30-30 Thomson Avenue
Long Island City, NY 11101

Attention: Nan Christine Sandar – Analyst Procurement

Re: Project QED1059
Project Specific Information

Gentlemen:

We submit the following:

1. Maspeth Supply Co. LLC. has 23-1/2 years of experience constructing sewers and water mains in New York City.

2. Supervisory Personnel

   A. Russell Blatt

      Mr. Blatt is responsible for administration. He has 20 years experience in the Construction Industry, involved in Sewer & Water Main Construction in the field, and 6 years experience at a Consulting Engineering Firm.

   B. Harvey Lyons, Member

      Mr. Lyons is a Member and the General Superintendent for Maspeth Supply Co., LLC and is responsible for supervising all construction activities. He has 53 years experience in the Construction Industry, which include 8 years with the City of New York, Bureau of Water Pollution Control, 9 years with contractors, and 36 years in business.

3. Equipment

We have immediate availability of the following owned equipment:

Payloaders	6	3 CY Crawler Backhoe	2
Boom Truck	3	2 CY Crawler Backhoe	2
Compressors	6	Pumps	6
CAT 446	3	Asphalt Spreader	1
2 CY Backhoe on Wheels	2	Asphalt Rollers	4

4. We expect to subcontract the following work:

A. Compaction Testing
B. Photographs & Video
C. Thermoplastic Lines
D. Tree Pruning, Removals & Pruning
E. Asphaltic Concrete
F. Trucking
G. Crossing Guards

5. We anticipate purchasing the following material:

DIP, Concrete, Asphalt, Castings, and Sheeting. We will not make purchases until the Contract is awarded. However, we have a continuing relationship with T. Mina Supply, US Pipe, Best Concrete, and Flushing Asphalt, etc.

6. We anticipate completing the work in the contract time.

7. Maspeth Supply Co., LLC will finance the work from available company funds.

8. We see no issues impacting our ability to complete the work.

Very truly yours,

Harvey Lyons
Member

The City of New York Department of Small Business Services
Division of Labor Services Contract Compliance Unit
1 Liberty Plaza, New York, New York 10006
Phone: (212) 513 – 6323
Fax: (212) 618-8879

CONSTRUCTION EMPLOYMENT REPORT

GENERAL INFORMATION

1. Your contractual relationship in this contract is: Prime contractor ✓ Subcontractor ____

1a. Are M/WBE goals attached to this project? Yes ✓ No ____

2. Please check one of the following if your firm would like information on how to certify with the City of New York as a:

___Minority Owned Business Enterprise
___Women Owned Business Enterprise
___Disadvantaged Business Enterprise
___Locally Based Business Enterprise
___Emerging Business Enterprise

2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ Are you DBE certified? Yes ____ No ✓

3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes ✓ No ___

4. Is this project subject to a project labor agreement? Yes ____ No ✓

5. Are you a Union contractor? Yes ✓ No ____ If yes, please list which local(s) you affiliated with Operating engineers 14 and 15 Teamsters 1536 Laborers 731, 1010

6. Are you a Veteran owned company? Yes ____ No ✓

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. EIN - 11 - 3493937 Maspeth Supply Co@gmail.com
Employer Identification Number or Federal Tax I.D. Email Address

8. Maspeth Supply Company LLC
Company Name

9. 55-14 48th Street Maspeth NY 11378
Company Address and Zip Code

10. Harvey Lyons 718-786 7000
Chief Operating Officer Telephone Number

11. Harvey Lyons 718 786 7000
Designated Equal Opportunity Compliance Officer (If same as Item #10, write "same") Telephone Number

12. Same
Name of Prime Contractor and Contact Person
(If same as Item #8, write "same")

13. Number of employees in your company: 45

14. Contract information:

(a) Dept of Design and Construction (b) #14,716 637.09
Contracting Agency (City Agency) Contract Amount

(c) _____ (d) QED1059
Procurement Identification Number (PIN) Contract Registration Number (CT#)

(e) _____ (f) _____
Projected Commencement Date Projected Completion Date

(g) Description and location of proposed contract:

Various locations in Queens new watermain

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes ✓ No ___

If yes, attach a copy of certificate.

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes ___ No ✓

If yes, attach a copy of certificate.

NOTE: DLS WILL NOT ISSUE A CONTINUED CERTIFICATE OF APPROVAL IN CONNECTION WITH THIS CONTRACT UNLESS THE REQUIRED CORRECTIVE ACTIONS IN PRIOR CONDITIONAL CERTIFICATES OF APPROVAL HAVE BEEN TAKEN.

17. Has an Employment Report already been submitted for a different contract (not covered by this Employment Report) for which you have not yet received compliance certificate?
Yes ___ No ✓ If yes,

Date submitted: _____
Agency to which submitted: _____
Name of Agency Person: _____
Contract No: _____
Telephone: _____

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes ___ No ✓

If yes,

(a) Name and address of OFCCP office.

_____

_____

(b) Was a Certificate of Equal Employment Compliance issued within the past 36 months? Yes___ No✓

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No✓

If yes, attach a copy of such requirements or agreements.

(d) Were any deficiencies found? Yes___ No✓

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes✓ No___

If yes, attach a list of such associations and all applicable CBA's.

General Contractors Association of New York (attached GCNY letter)

PART II: DOCUMENTS REQUIRED

20. For the following policies or practices, attach the relevant documents (e.g., printed booklets, brochures, manuals, memoranda, etc.). If the policy(ies) are unwritten, attach a full explanation of the practices. See instructions.

✓ (a) Health benefit coverage/description(s) for all management, nonunion and union employees (whether company or union administered)

✗ (b) Disability, life, other insurance coverage/description

✓ (c) Employee Policy/Handbook

✓ (d) Personnel Policy/Manual

_____ (e) Supervisor's Policy/Manual

_____ (f) Pension plan or 401k coverage/description for all management, nonunion and union employees, whether company or union administered

_____ (g) Collective bargaining agreement(s).

✓ (h) Employment Application(s)

_____ (i) Employee evaluation policy/form(s).

_____ (j) Does your firm have medical and/or non-medical (i.e. education, military, personal, pregnancy, child care) leave policy?

✓ (k) Sexual Harassment Policy

21. To comply with the Immigration Reform and Control Act of 1986 when and of whom does your firm require the completion of an I-9 Form?

(a) Prior to job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) Within the first three days on the job	Yes___ No___
(e) To some applicants	Yes___ No___
(f) To all applicants	Yes___ No___
(g) To some employees	Yes___ No___
(h) To all employees	Yes√ No___

22. Explain where and how completed I-9 Forms, with their supportive documentation, are maintained and made accessible.

Kept in employee files

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No√

If yes, is the medical examination given:

(a) Prior to a job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) To all applicants	Yes___ No___
(e) Only to some applicants	Yes___ No___

If yes, list for which applicants below and attach copies of all medical examination or questionnaire forms and instructions utilized for these examinations.

24. Do you have a written equal employment opportunity (EEO) policy? Yes√ No___

If yes, list the document(s) and page number(s) where these written policies are located.

25. Does the company have a current affirmative action plan(s) (AAP)
_____Minorities and Women
_____Individuals with handicaps No
_____Other. Please specify _____

26. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes√ No___

If yes, please attach a copy of this policy.

If no, attach a report detailing your firm's unwritten procedure for handling EEO complaints.

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes___ No_✓_

If yes, attach an internal complaint log. See instructions.

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes___ No_✓_

If yes, attach a log. See instructions.

29. Are there any jobs for which there are physical qualifications? Yes___ No_✓_

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

_____

_____

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No_✓_

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

_____

_____

SIGNATURE PAGE

I, (print name of authorized official signing)_____ hereby certify that the information submitted herewith is true and complete to the best of my knowledge and belief and submitted with the understanding that compliance with New York City's equal employment requirements, as contained in Chapter 56 of the City Charter, Executive Order No. 50 (1980), as amended, and the implementing Rules and Regulations, is a contractual obligation. I also agree on behalf of the company to submit a certified copy of payroll records to the Division of Labor Services on a monthly basis.

Maspeth Supply Co LLC
Contractor's Name

Harvey Lyons — Member
Name of person who prepared this Employment Report — Title

Harvey Lyons — Member
Name of official authorized to sign on behalf of the contractor — Title

718 786 7000
Telephone Number

Signature of authorized official — 4/24/23 Date

If contractors are found to be underutilizing minorities and females in any given trade based on Chapter 56 Section 3H, the Division of Labor Services reserves the right to request the contractor's workforce data and to implement an employment program.

Contractors who fail to comply with the above mentioned requirements or are found to be in noncompliance may be subject to the withholding of final payment.

Willful or fraudulent falsifications of any data or information submitted herewith may result in the termination of the contract between the City and the bidder or contractor and in disapproval of future contracts for a period of up to five years. Further, such falsification may result in civil and/and or criminal prosecution.

To the extent permitted by law and consistent with the proper discharge of DLS' responsibilities under Charter Chapter 56 of the City Charter and Executive Order No. 50 (1980) and the implementing Rules and Regulations, all information provided by a contractor to DLS shall be confidential.

Only original signatures accepted.

Sworn to before me this 24th day of April 20 23

Jay Warren Fuchs — Jay Warren Fuchs — 4/24/23
Notary Public — Authorized Signature — Date

JAY WARREN FUCHS
Notary Public, State of New York
No. 01FU4992547
Qualified in Nassau County
Commission Expires Feb. 24, 2026

FOR OFFICIAL USE ONLY: File No._____

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE
30-30 THOMSON AVENUE
LONG ISLAND CITY, NY, 11101
TEL: 718.391.1000
WEB: www.nyc.gov/ddc

TO BE FILLED IN BY THE BIDDER:

BIDDER'S NAME:

_____

_____

BID SECURITY (CIRCLE ONE):
BID BOND / CERTIFIED CHECK

NUMBER OF ADDENDUMS RECEIVED AND ATTACHED TO BID:
____ ADDENDUMS

DDC CLIENT AGENCY:
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
PREPARED BY:
IN-HOUSE DESIGN
DATE PREPARED:
02/01/2023

VOLUME 2 OF 3

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: QED1059

INFORMATION FOR BIDDERS CONTRACT PERFORMANCE AND PAYMENT BONDS PREVAILING WAGE SCHEDULE

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC.

TOGETHER WITH ALL WORK INCIDENTAL THERETO

BOROUGH OF QUEENS

CITY OF NEW YORK

CITY OF NEW YORK

DEPARTMENT OF DESIGN AND CONSTRUCTION

INFORMATION FOR BIDDERS

December 2021

THIS PAGE INTENTIONALLY LEFT BLANK

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION

INFORMATION FOR BIDDERS

TABLE OF CONTENTS

1. Description and Location of Work

The description and location of the work for which bids are requested are specified in the PASSPort RFx field "Description".

2. Time and Place for Receipt of Bids

Sealed bids shall be received on or before the date and hour specified in the PASSPort RFx, at which time they will be publicly opened and read aloud in the presence of the Commissioner or the Commissioner's or her representative, and any bidders who may desire to be present.

3. Definitions

The definitions set forth in the Procurement Policy Board Rules shall apply to this Invitation For Bids.

4. Invitation For Bids and Contract Documents

(A) Except for titles, sub-titles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience) the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of the Contract and the Invitation for Bids.

(1) All provisions required by law to be inserted in this Contract, whether actually inserted or not

(2) The Contract Drawings and Specifications

(3) The General Conditions, the General Requirements and the Special Conditions, if any

(4) The Contract

(5) The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and the Bid Booklet

(6) The Budget Director's Certificate; all Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed with the Work.

(B) For particulars as to this procurement, including quantity and quality of the purchase, extent of the work or labor to be performed, delivery and performance schedule, and any other special instructions, prospective bidders are referred to the Invitation For Bids Documents. A copy of such documents can be obtained in the PASSPort RFx.

5. Pre-Bid Conference

A pre-bid conference shall be held as set forth in the PASSPort RFx. Nothing stated at the pre-bid conference shall change the terms or conditions of the Invitation For Bids Documents, unless a change is made by written amendment as provided in Section 9 below. Failure to attend a mandatory pre-bid conference shall constitute grounds for the rejection of the bid.

6. Agency Contact

Any questions or correspondence relating to this bid solicitation shall be addressed to the Agency Contact person specified in the PASSPort RFx.

7. Bidder's Oath

(A) The bid shall be properly signed by an authorized representative of the bidder and the bid shall be verified by the written oath of the authorized representative who signed the bid, that the several matters stated and information furnished therein are in all aspects true.

(B) A materially false statement willfully or fraudulently made in connection with the bid or any of the forms completed and submitted with the bid may result in the termination of any Contract between the City and the Bidder. As a result, the Bidder may be barred from participating in future City contracts as well as be subject to possible criminal prosecution.

8. Examination and Viewing of Site, Consideration of Other Sources of Information and Changed Conditions

(A) Pre-Bidding (Investigation) Viewing of Site - Bidders must carefully view and examine the site of the proposed work, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions on, about or above the site relating to or affecting in any way the performance of the work to be done under the Contract which were or should have been indicated to a reasonably prudent bidder. To arrange a date for visiting the work site, bidders are to contact the Agency Contact person specified in The PASSPort RFx.

(B) Should the contractor encounter during the progress of the work subsurface conditions at the site materially differing from any shown on the Contract Drawings or indicated in the Specifications or such subsurface conditions as could not reasonably have been anticipated by the contractor and were not anticipated by the City, which conditions will materially affect the cost of the work to be done under the Contract, the attention of the Commissioner must be called immediately to such conditions before they are disturbed. The Commissioner shall thereupon promptly investigate the conditions. If the Commissioner finds that they do so materially differ, or that they could not reasonably have been anticipated by the contractor and were not anticipated by the City, the Contract may be modified with the Commissioner's written approval.

9. Examination of Proposed Contract

(A) Request for Interpretation or Correction: Prospective bidders must examine the Contract Documents carefully and before bidding must request the Commissioner in writing for an interpretation or correction of every patent ambiguity, inconsistency or error therein which should have been discovered by a reasonably prudent bidder. Such interpretation or correction, as well as any additional contract provisions the Commissioner may decide to include, will be issued in writing by the Commissioner as an addendum to the Contract, which will be transmitted to each person recorded as having received a copy of the Contract Documents from the Department. Transmission of such addendum will be by mail, e-mail, facsimile or hand delivery. Such addendum will also be posted at the place where the Contract Documents are available for the inspection of prospective bidders. Upon transmission as provided for herein, such addendum shall become a part of the Contract Documents, and binding on all bidders, whether or not actual notice of such addendum is shown.

(B) Only Commissioner's Interpretation or Correction Binding: Only the written interpretation or correction so given by the Commissioner shall be binding, and prospective bidders are warned that no other officer, agent or employee of the City is authorized to give information concerning, or to explain or interpret, the Contract.

(C) Documents given to a subcontractor for the purpose of soliciting the subcontractor's bid shall include either a copy of the bid cover sheet or a separate information sheet setting forth the project name, the Contract number (if available), the contracting agency and the Project's location.

10. Form of Bid

Each bid must be submitted upon the prescribed form and must contain: a) the name, residence and place of business of the person or persons making the same; b) the names of all persons interested therein, and if no other person is so interested, such fact must be distinctly stated; c) a statement to the effect that it is made without any connection with any other person making a bid for the same purpose and that it is in all respects fair and without collusion or fraud; d) a statement that no Council member or other officer or employee or person whose salary is payable in whole or part from the City Treasury is directly or indirectly interested therein or in the supplies, materials or equipment and work or labor to which it relates, or in any portion of the profits thereof; e) a statement that the bidder is not in arrears to the City or to any agency upon a debt or contract or taxes, and is not a defaulter as surety or otherwise upon any obligation to the City to any agency thereof, except as set forth in the bid.

THE BID SHALL BE TYPEWRITTEN OR WRITTEN LEGIBLY IN INK. THE BID SHALL BE SIGNED IN INK. ERASURES OR ALTERATIONS SHALL BE INITIALED BY THE SIGNER IN INK. FAILURE TO CONFORM TO THE REQUIREMENTS OF THIS SECTION 10 SHALL RESULT IN THE REJECTION OF THE BID.

11. Irrevocability of Bid

The prices set forth in the bid cannot be revoked and shall be effective until the award of the Contract, unless the bid is withdrawn as provided for in Sections 15 and 18 below.

12. Acknowledgment of Amendments

The receipt of any amendment to the Contract Documents shall be acknowledged by the bidder in its bid submission.

13. Bid Samples and Descriptive Literature

Bid samples and descriptive literature shall not be submitted by the bidder, unless expressly requested elsewhere in the Contract or Contract Documents. Any unsolicited bid samples or descriptive literature which are submitted shall not be examined or tested and shall not be deemed to vary any of the provisions of this Contract.

14. Proprietary Information/Trade Secrets

(A) The bidder shall identify those portions of the bid which it deems to be confidential, proprietary information or trade secrets, and provide justification why such materials shall not be disclosed by the City. All such materials shall be clearly indicated by stamping the pages on which such information appears, at the top and bottom thereof with the word "Confidential". Such materials stamped "Confidential" must be easily separable from the non-confidential sections of the bid.

(B) All such materials so indicated shall be reviewed by the Agency and any decision not to honor a request for confidentiality shall be communicated in writing to the bidder. For those bids which are unsuccessful, all such confidential materials shall be returned to the bidder. Prices, makes and model or catalog numbers of the items offered, deliveries, and terms of payment shall be publicly available after bid opening, regardless of any designation of confidentiality made by the bidder.

15. Pre-Opening Modification or Withdrawal of Bids

Bids may be modified or withdrawn by written notice received in the office designated in the PASSPort RFx, before the time and date set for the bid opening. If a bid is withdrawn in accordance with this Section, the bid security, if any, shall be returned to the bidder.

16. Bid Evaluation and Award

In accordance with the New York City Charter, the Procurement Policy Board Rules and the terms and conditions of this Invitation For Bids, this Contract shall be awarded, if at all, to the responsible bidder whose bid meets the requirements and evaluation criteria set forth in the Invitation For Bids, and whose bid price is either the most favorable bid price or, if the Invitation For Bids so states, the most favorable evaluated bid price. A bid may not be evaluated for any requirement or criterion that is not disclosed in the Invitation For Bids.

Restriction: No negotiations with any bidder shall be allowed to take place except under the circumstances and in the manner set forth in Section 21. Nothing in this Section shall be deemed to permit a contract award to a bidder submitting a higher quality item than that designated in the Invitation For Bids, if that bid is not also the most favorable bid.

17. Late Bids, Late Withdrawals and Late Modifications

Any bid received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. Any request for withdrawal or modification received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. The exception to this provision is that a late modification of a successful bid that makes the bid terms more favorable to the City shall be considered at any time it is received.

18. Withdrawal of Bids.

Except as provided for in Section 15, above, a bidder may not withdraw its bid before the expiration of forty-five (45) days after the date of the opening of bids; thereafter, a bidder may withdraw its bid only in writing and in advance of an actual award. If within sixty (60) days after the execution of the Contract, the Commissioner fails to fix the date

for commencement of work by written notice to the bidder, the bidder at the bidder's option, may ask to be relieved of the bidder's obligation to perform the work called for by written notice to the Commissioner. If such notice is given to the Commissioner, and the request to withdraw is granted, the bidder waives all claims in connection with this Contract.

19. Mistake in Bids

(A) Mistake Discovered Before Bid Opening: A bidder may correct mistakes discovered before the time and date set for bid opening by withdrawing or correcting the bid as provided in Section 15 above.

(B) Mistakes Discovered Before Award

(1) In accordance with General Municipal Law (Section 103, subdivision 11), where a unilateral error or mistake is discovered in a bid, such bid may be withdrawn upon written approval of the Agency Chief Contracting Officer if the following conditions are met:

(a) The mistake is known or made known to the agency prior to the awarding of the Contract or within 3 days after the opening of the bid, whichever period is shorter; and

(b) The price bid was based upon an error of such magnitude that enforcement would be unconscionable; and

(c) The bid was submitted in good faith and the bidder submits credible evidence that the mistake was a clerical error as opposed to a judgment error; and

(d) The error in the bid is actually due to an unintentional and substantial arithmetic error or an unintentional omission of a substantial quantity of work, labor, material or services made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of the original work paper, documents, or materials used in the preparation of the bid sought to be withdrawn; and

(e) It is possible to place the agency in the same position as existed prior to the bid.

(2) Unless otherwise required by law, the sole remedy for a bid mistake in accordance with this Article shall be withdrawal of the bid, and the return of the bid bond or other security, if any, to the bidder. Thereafter, the agency may, in its discretion, award the Contract to the next lowest bidder or rebid the Contract. Any amendment to or reformation of a bid or a Contract to rectify such an error or mistake therein is strictly prohibited.

(3) If the mistake and the intended correct bid are clearly evident on the face of the bid document, the bid shall be corrected to the intended correct bid and may not be withdrawn. Examples of mistakes that may be corrected are typographical errors, errors in extending unit prices, transposition errors and arithmetical errors.

20. Low Tie Bids

(A) When two or more low responsive bids from responsible bidders are identical in price, meeting all the requirements and criteria set forth in the Invitation For Bids, the Agency Chief Contracting Officer will break the tie in the following manner and order of priority:

(1) Award to a certified New York City small, minority or woman-owned business entity bidder;

(2) Award to a New York City bidder;

(3) Award to a certified New York State small, minority or woman-owned business bidder;

(4) Award to a New York State bidder.

(B) If two or more bidders still remain equally eligible after application of paragraph (A) above, award shall be made by a drawing by lot limited to those bidders. The bidders involved shall be invited to attend the drawing. A witness shall be present to verify the drawing and shall certify the results on the bid tabulation sheet.

21. Rejection of Bids

(A) Rejection of Individual Bids: The Agency may reject a bid if:

(1) The bidder fails to furnish any of the information required pursuant to Section 24 or 28 hereof; or if

(2) The bidder is determined to be not responsible pursuant to the Procurement Policy Board Rules; or if

(3) The bid is determined to be non-responsive pursuant to the Procurement Policy Board Rules; or if

(4) The bid, in the opinion of the Agency Chief Contracting Officer, contains unbalanced bid prices and is thus non-responsive, unless the bidder can show that the prices are not unbalanced for the probable required quantity of items, or if the imbalance is corrected pursuant to Section 15.

(B) Rejection of All Bids: The Agency, upon written approval by the Agency Chief Contracting Officer, may reject all bids and may elect to resolicit bids if in its sole opinion it shall deem it in the best interest of the City so to do.

(C) Rejection of All Bids and Negotiation With All Responsible Bidders: The Agency Head may determine that it is appropriate to cancel the Invitation For Bids after bid opening and before award and to complete the acquisition by negotiation. This determination shall be based on one of the following reasons:

(1) All otherwise acceptable bids received are at unreasonable prices, or only one bid is received and the Agency Chief Contracting Officer cannot determine the reasonableness of the bid price, or no responsive bid has been received from a responsible bidder; or

(2) In the judgment of the Agency Chief Contracting Officer, the bids were not independently arrived at in open competition, were collusive, or were submitted in bad faith.

(B) When the Agency has determined that the Invitation for Bids is to be canceled and that use of negotiation is appropriate to complete the acquisition, the contracting officer may negotiate and award the Contract without issuing a new solicitation, subject to the following conditions:

(1) prior notice of the intention to negotiate and a reasonable opportunity to negotiate have been given by the contracting officer to each responsible bidder that submitted a bid in response to the Invitation for Bids;

(2) the negotiated price is the lowest negotiated price offered by a responsible bidder; and

(3) the negotiated price is lower than the lowest rejected bid price of a responsible bidder that submitted a bid in response to the Invitation for Bids.

22. Right to Appeal Determinations of Non-Responsiveness or Non-Responsibility and Right to Protest Solicitations and Award

The bidder has the right to appeal a determination of non-responsiveness or non-responsibility and has the right to protest a solicitation and award. For further information concerning these rights, the bidder is directed to the Procurement Policy Board Rules.

23. Affirmative Action and Equal Employment Opportunity

This Invitation For Bids is subject to applicable provisions of Federal, State and Local Laws and executive orders requiring affirmative action and equal employment opportunity.

24. PASSPort COMPLIANCE

All vendors that intend to do business with the City of New York must complete a disclosure process in order to be considered for a contract. This disclosure process was formerly completed using Vendor Information Exchange System (VENDEX) paper-based forms. The City of New York has moved collection of vendor disclosure information online. In early August 2017, the New York City Mayor's Office of Contract Services (MOCS) launched the Procurement and Sourcing Solutions Portal (PASSPort), a new online procurement system that replaced the paper-VENDEX process. In anticipation of awards, all bidders must create online accounts in the new PASSPort system, and

file all disclosure information using PASSPort. Paper submissions, including certifications of no changes to existing VENDEX packages, will not be accepted in lieu of complete online filings using PASSPort.

All vendors that intend to do business with the City, but specifically those that fall into any of the following categories, are required to enroll:

- Have a pending award with a City Agency; or
- Hold a current contract with a City Agency and have either an expiring VENDEX or expiring Certificate of No Change.

The Department of Design and Construction (DDC) and MOCS hereby notifies all proposers that the PASSPort system is available, and that disclosure filing completion is required prior to any award through this competitive bid.

To enroll in PASSPort and to access the PASSPort website (including online training), please visit www.nyc.gov/passport. Contact MOCS at passport@mocs.nyc.gov for additional information and technical support.

25. Complaints About the Bid Process

The New York City Comptroller is charged with the audit of contracts in New York City. Any vendor who believes that there has been unfairness, favoritism or impropriety in the bid process should inform the Comptroller, Office of Contract Administration, One Centre Street, Room 835, New York, New York; telephone number (212)669-2323.

26. Bid, Performance and Payment Security

(A) Bid Security: Each bid must be accompanied by bid security in an amount and type specified in the PASSPort RFx questionnaire. The bid security shall assure the City of New York of the adherence of the bidder to its proposal, the execution of the Contract, and the furnishing of Performance and Payment Bonds by the bidder, if required in the PASSPort RFx. Bid security shall be returned to the bidder as follows:

(1) Within ten (10) days after the bid opening, the Comptroller will be notified to return the deposits of all but the three (3) lowest bidders. Within five (5) days after the award, the Comptroller will be notified to return the deposits of the remaining two unsuccessful bidders.

(2) Within five (5) days after the execution of the Contract and acceptance of the Contractor's bonds, the Comptroller will be notified to return the bid security of the successful bidder or, if performance and payment bonds are not required, only after the sum retained under Article 21 of the Contract equals the amount of the bid security.

(3) Where all bids are rejected, the Comptroller will be notified to return the deposit of the three (3) lowest bidders at the time of rejection.

(B) Performance and Payment Security: Performance and Payment Security must be provided in an amount and type specified in the PASSPort RFx. The performance and payment security shall be delivered by the contractor prior to or at the time of execution of the Contract. If a contractor fails to deliver the required performance and payment security, its bid security shall be enforced, and an award of Contract may be made to the next lowest responsible and responsive bidder, or the contract may be rebid.

(C) Acceptable Types of Security: Acceptable types of security for bids, performance, and payment shall be limited to the following:

(1) a one-time bond in a form satisfactory to the City;

(2) a bank certified check or money order;

(3) obligations of the City of New York; or

(4) other financial instruments as determined by the Office of Construction in consultation with the Comptroller.

Whenever the successful bidder deposits obligations of the City of New York as performance and payment security, the Comptroller may sell and use the proceeds thereof for any purpose for which the principal or

surety on such bond would be liable under the terms of the Contract. If the money is deposited with the Comptroller, the successful bidder shall not be entitled to receive interest on such money from the City.

(D) Form of Bonds: Security provided in the form of bonds must be prepared on the form of bonds authorized by the City of New York. Forms for bid, performance, and payment bonds are included in the Invitation for Bids Documents. Such bonds must have as surety thereunder such surety company or companies as are: (1) approved by the City of New York; (2) authorized to do business in the State of New York, and (3) approved by the Department of the Treasury of the United States. Premiums for any required bonds must be included in the base bid.

The bidder is advised that submission of a bid bond where the surety on such bond fails to meet the criteria set forth herein, shall result in the rejection of the bid as non-responsive.

The Department of the Treasury of the United States advises that information concerning approved surety companies may be obtained as follows: (1) from the Government Printing Office at 215-364-6465; (2) through the Internet at https://www.fiscal.treasury.gov/surety-bonds/.

(E) Power of Attorney: Attorneys in fact who sign bid, performance, or payment bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

27. Failure to Execute Contract

In the event of failure of the successful bidder to execute the Contract and furnish the required security within ten (10) days after notice of the award of the Contract, the deposit of the successful bidder or so much thereof as shall be applicable to the amount of the award made shall be retained by the City, and the successful bidder shall be liable for and hereby agrees to pay on demand the difference between the price bid and the price for which such Contract shall be subsequently awarded, including the cost of any required reletting and less the amount of such deposit. No plea of mistake in such accepted bid shall be available to the bidder for the recovery of the deposit or as a defense to any action based upon such accepted bid. Further, should the bidder's failure to comply with this Section cause any funding agency, body or group (Federal, State, City, Public, Private, etc.) to terminate, cancel or reduce the funding on this project, the bidder in such event shall be liable also to the City for the amount of actual funding withdrawn by such agency on this project, less the amount of the forfeited deposit.

28. Bidder Responsibilities and Qualifications

(A) Bidders must include with their bids all information necessary for a determination of bidder responsibility, as set forth in the Specifications.

(B) The Agency may require any bidder or prospective bidder to furnish all books of account, records, vouchers, statements or other information concerning the bidder's financial status for examination as may be required by the Agency to ascertain the bidder's responsibility and capability to perform the Contract. If required, a bidder must also submit a sworn statement setting forth such information as the Agency may require concerning present and proposed plant and equipment, the personnel and qualifications of the bidder's working organizations, prior experience and performance record.

(C) Oral Examination on Qualifications: In addition thereto, and when directed by the Agency, the bidder, or a responsible officer, agent or employee of the bidder, must submit to an oral examination to be conducted by the Agency in relation to the bidder's proposed tentative plan and schedule of operations, and such other matters as the Agency may deem necessary in order to determine the bidder's ability and responsibility to perform the work in accordance with the Contract. Each person so examined must sign and verify a stenographic transcript of such examination noting thereon such corrections as such person may desire to make.

(D) If the bidder fails or refuses to supply any of the documents or information set forth in paragraph (B) hereof or fails to comply with any of the requirements thereof, the Agency may reject the bid.

29. Employment Report

In accordance with Executive Order No. 50 (1980) as modified by Executive Order 108 (1986), the filing of a

completed Employment Report (ER) is a requirement of doing business with the City of New York for construction contractors with contracts of $1,000,000 or more and subcontractors with construction subcontracts of $750,000 or more. The required forms and information are included in the PASSPort Vendor Profile.

30. Labor Law Requirements

(A) General: The successful bidder will be required to comply strictly with all Federal, State and local labor laws and regulations.

(B) New York State Labor Law: This Contract is subject to New York State Labor Law Section 220, which requires that construction workers on the site be paid prevailing wages and supplements. The Contractor is reminded that all wage provisions of this Contract will be enforced strictly and failure to comply will be considered when evaluating performance. Noncompliance may result in the contractor being debarred by the City from future contracts. Complaints filed with the Comptroller may result in decisions which may debar a contractor from bidding contracts with any state governmental entity and other political subdivisions.

(C) Records: The Contractor is expected to submit accurate payroll reports and other required documents and verify attendance and job classifications being utilized in compliance with the law, Contract provisions and agency procedures.

31. Insurance

(A) Bidders are advised that the insurance requirements contained herein are regarded as material terms of the Contract. As required by Article 22 of the Contract, the contractor must effect and maintain with companies licensed and authorized to do business in the State of New York, the types of insurance set forth therein, when required by and in the amounts set forth in Schedule A of the General Conditions. Such required insurance must be provided from the date the contractor is ordered to commence work and up to the date of final acceptance of all required work.

(B) The contractor must, within ten days of receipt of the notice of award, submit the following insurance documentation: (a) original certificate of insurance for general liability in the amount required by Schedule A of the General Conditions, and (b) original certificates of insurance or other proof of coverage for workers' compensation and disability benefits, as required by Section 57 of the New York State Workers' Compensation Law and Section 220 of the Disability Benefits Law.

32. Lump Sum Contracts

(A) Comparison of Bids: Bids on Lump Sum Contracts will be compared on the basis of the lump sum price bid, adjusted for alternate prices bid, if any.

(B) Lump Sum Bids for "General Construction Work" which include excavation shall include all necessary excavation work defined in the Specifications as being included in the lump sum bid. The bidder shall also bid a unit price for the additional cost of excavating material which is defined in the Specifications as excavation for which additional payment will be made. The total estimated additional cost of removing such material will be taken as the quantity set forth in the Engineer's Estimate multiplied by the unit price bid. This total estimated cost of additional excavation shall be added to the lump sum bid for the General Construction Work for the purpose of comparing bids to determine the low bidder.

(C) Variations from Engineer's Estimate: The Engineer's Estimate of the quantity of excavation for which additional payment will be made is approximate only and is given solely to be used as a uniform basis for the comparison of bids and such estimate is not to be considered as part of this contract. The quantities actually required to complete the contract work may be more or less than the quantities in the Engineer's Estimate and, if so, no action for damages or for loss of profits shall accrue to the contractor by reason thereof.

33. Unit Price Contracts

(A) Comparison of Bids: Bids on Unit Price Contracts will be compared on the basis of a total estimated price,

arrived at by taking the sum of the estimated quantities of such items, in accordance with the Engineer's Estimate of Quantities set forth in the Bid Schedule, multiplied by the corresponding unit prices, and including any lump sum bids on individual items.

(B) Variations from Engineer's Estimate: Bidders are warned that the Engineer's Estimate of Quantities on the various items of work and materials is approximate only, given solely to be used as a uniform basis for the comparison of bids, and is not be considered part of this contract. The quantities actually required to complete the contract work may be less or more than so estimated, and if so, no action for damages or for loss of profits shall accrue to the contractor by reason thereof.

(C) Overruns: The terms and conditions applicable to overruns of unit price items are set forth in Article 26 of the Contract.

34. Excise Tax

Bidders are referred to the Specifications for information on Federal Excise Tax exemptions.

35. Licenses and Permits

The successful bidder will be required to obtain all necessary licenses and permits necessary to perform the work.

36. Multiple Prime Contractors

If more than one prime contractor will be involved on this project, all contractors are required to examine the Invitation for Bid packages for all other parts of the project.

37. Locally Based Enterprise Requirements (LBE)

This Contract is subject to the requirements of Administrative Code, Section 6-108.1, and the regulations promulgated thereunder. No construction contract will be awarded unless and until these requirements have been complied with in their entirety. The bidder is advised of the provisions set forth below, as well as the provisions with respect to the Locally Based Enterprise Program contained in Article 67 of the Contract. The contractor is advised that:

(A) If any portion of the Contract is subcontracted, not less than ten percent of the total dollar amount of the contract shall be awarded to locally based enterprises ("LBEs"); except, where less than ten percent of the total dollar amount of the Contract is subcontracted, such lesser percentage shall be so awarded.

(B) No contractor shall require performance and payment bonds from LBE subcontractors.

(C) No Contract shall be awarded unless the contractor first identifies in its bid:

(1) the percentage, dollar amount and type of work to be subcontracted; and

(2) the percentage, dollar amount and type of work to be subcontracted to LBEs.

(D) Within ten calendar days after notification of low bid, the apparent low bidder shall submit an "LBE Participation Schedule" to the contracting agency. If such schedule does not identify sufficient LBE subcontractors to meet the requirements of Administrative Code Section 6-108.1, the apparent low bidder shall submit documentation of its good faith efforts to meet such requirements.

(1) The "LBE Participation Schedule" shall include:

(a) the name and address of each LBE that will be given a subcontract,

(b) the percentage, dollar amount and type of work to be subcontracted to the LBE, and

(c) the dates when the LBE subcontract work will commence and end.

(2) The following documents shall be attached to the "LBE Participation Schedule":

(a) verification letters from each subcontractor listed in the "LBE Participation Schedule" stating that the LBE will enter into a formal agreement for work,

(b) certification documents of any proposed LBE subcontractor which is not on the LBE certified list, and

(c) copies of the certification letter of any proposed subcontractor which is an LBE.

(3) Documentation of good faith efforts to achieve the required LBE percentage shall include as appropriate but not limited to the following:

(a) attendance at prebid meetings, when scheduled by the agency, to advise bidders of contract requirements;

(b) advertisement where appropriate in general circulation media, trade association publications and small business media of the specific subcontracts that would be at least equal to the percentage goal for LBE utilization specified by the contractor;

(c) written notification to association of small, minority and women contractors soliciting specific subcontractors;

(d) written notification by certified mail to LBE firms that their interest in the contract is solicited for specific work items and their estimated values;

(e) demonstration of efforts made to select portions of the work for performance by LBE firms in order to increase the likelihood of achieving the stated goal;

(f) documented efforts to negotiate with LBE firms for specific subcontracts, including at a minimum:

(i) The names, address and telephone numbers of LBE firms that are contacted;

(ii) A description of the information provided to LBE firms regarding the plans and specifications for portions of the work to be performed;

(iii) Documentation showing that no reasonable price can be obtained from LBE firms;

(iv) A statement of why agreements with LBE firms were not reached;

(g) a statement of the reason for rejecting any LBE firm which the contractor deemed to be unqualified; and

(h) documentation of efforts made to assist the LBE firms contacted that needed assistance in obtaining required insurance.

(E) Unless otherwise waived by the Commissioner with the approval of the Office of Economic and Financial Opportunity, failure of a proposed contractor to provide the information required by paragraphs (C) and (D) above may render the bid non-responsive and the Contract may not be awarded to the bidder. If the contractor states that it will subcontract a specific portion of the work, but can demonstrate despite good faith efforts it cannot achieve its required LBE percentage for subcontracted work until after award of Contract, the Contract may be awarded, subject to a letter of compliance from the contractor stating that it will comply with Administrative Code Section 6-108.1 and subject to approval by the Commissioner. If the contractor has not met its required LBE percentage prior to award, the contractor shall demonstrate that a good faith effort has been made subsequent to award to obtain LBEs on each subcontract until its meets the required percentage.

(F) When a bidder indicates prior to award that no work will be subcontracted, no work may be subcontracted without the prior written approval of the Commissioner, which shall be granted only if the contractor in good faith seeks LBE subcontractors at least six weeks prior to the start of work.

(G) The contractor may not substitute or change any LBE which was identified prior to award of the contract without the written permission of the Commissioner. The contractor shall make a written application to the Commissioner for permission to make such substitution or change, explaining why the contractor needs to change its LBE subcontractor and how the contractor will meet its LBE subcontracting requirement. Copies of such application must be served on the originally identified LBE by certified mail return receipt requested,

as well as the proposed substitute LBE. The Commissioner shall determine whether or not to grant the contractor's request for substitution.

38. Bid Submission Requirements

The Bid Submission Requirements are set forth in the PASSPort RFx.

39. Comptroller's Certificate

This Contract shall not be binding or of any force unless it is registered by the Comptroller in accordance with Section 328 of the City Charter and the Procurement Policy Board Rules. This Contract shall continue in force only after annual appropriation of funds by the City of New York and certification as hereinabove set forth.

40. Procurement Policy Board Rules

This Invitation For Bids is subject to the Rules of the Procurement Policy Board of the City of New York. In the event of a conflict between said Rules and a provision of this Invitation For Bids, the Rules shall take precedence.

41. DDC Safety Requirements

The DDC Safety Requirements apply to the work to be performed pursuant to the Contract. The DDC Safety Requirements are set forth on the following pages.

THIS PAGE INTENTIONALLY LEFT BLANK

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
SAFETY REQUIREMENTS FOR CONSTRUCTION CONTRACTS

January 2020

THE DDC SAFETY REQUIREMENTS FOR CONSTRUCTION CONTRACTS INCLUDE THE FOLLOWING SECTIONS:

I. POLICY ON SITE SAFETY

The City of New York Department of Design and Construction (DDC) is committed to a policy of injury and illness prevention and risk management for construction work that will ensure the safety and health of the workers engaged in the projects and the protection of the general public. Therefore, it is DDC's policy that work carried out by Contractors on DDC contracts must, at a minimum, comply with the most current versions of all applicable federal, state and city laws, rules, and regulations, including without limitation:

- Code of Federal Regulations, Title 29, Part 1926 (29 CFR 1926) and applicable Sub-parts of Part 1910 – U.S. Occupational Safety and Health Administration (OSHA);
- Federal Highway Administration – Manual on Uniform Traffic Control Devices (MUTCD);
- New York Codes, Rules and Regulations (NYCRR), Title 12, Part 23 – Protection in Construction, Demolition and Excavation Operations;
- New York Codes, Rules and Regulations (NYCRR), Title 16, Part 753 – Protection of Underground Facilities;
- New York City Administrative Code, Title 28 – New York City Construction Codes;
- Rules of the City of New York, Title 15, Chapter 13 – Rules Pertaining To the Prevention of the Emission of Dust from Construction Related Activities;
- Rules of the City of New York, Title 15, Chapter 28 – Citywide Construction Noise Mitigation;
- Rules of the City of New York, Title 34 Chapter 2 – NYCDOT Highway Rules.

The Contractor will be required to comply with all new and/or revised federal, state and city laws, rules, and regulations, issued during the course of the project, at the expense of the Contractor without any additional costs to the DDC.

II. PURPOSE

The purpose of this policy is to ensure that Contractors perform their work and supervise their employees in accordance with all applicable federal, state and city rules and regulations. Further, Contractors will be expected to minimize or eliminate jobsite and public hazards, through a planning, inspection, auditing and corrective action process. The goal is to control risks so that injuries, illnesses, and accidents to contractors' employees, DDC employees and the general public, as well as damage to city-owned and private property, are reduced to the lowest level feasible.

III. DEFINITIONS

Agency Chief Contracting Officer (ACCO): The ACCO will mean the person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the City Chief Procurement Officer (CCPO).

Competent Person: As defined by OSHA, an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees or the general public, and who has authorization to take prompt corrective measures to eliminate them. This individual will have completed, at a minimum an authorized 30-hour OSHA Construction Safety Course. The Contractor may be required to provide more than one competent person due to construction operations and based on the number of active work sites.

Construction Safety Auditor: A representative of the Office of Construction Safety who provides inspection and assessment services to enhance health and safety on all DDC construction projects. The activities of the Construction Safety Auditor include performing site audits, reviewing safety plans, reviewing construction permits, drawings, verifying Contractor's compliance with applicable federal, state and city laws, rules, regulations, and DDC Contract Safety Requirements, etc. and rendering technical advice and assistance to DDC Resident Engineers and Project Managers.

Office of Construction Safety: A unit of DDC Safety and Site Support that assesses contractor's safety on DDC jobsites and advises responsible parties of needed corrective actions.

Registered Construction Superintendent: For certain projects, as defined in New York City Construction Codes – Title 28, the contractor will provide a Construction Superintendent registered with the NYC Department of Buildings and responsible for all duties as defined in Chapter 33 of Title 1 of the Rules of the City of New York.

Contractor: For purposes of these Safety Requirements, the term "Contractor" will mean any person or entity that enters into a contract for the performance of construction work on a DDC project. The term "Contractor" will include any person or entity which enters into any of the following types of contracts: (1) a prime construction contract for a specific project, (2) a prime construction contract using the Job Order Contracting System ("JOCS Contract"), and (3) a subcontract with a CM/Builder ("First Tier Subcontract").

Daily Safety Job Briefing: Daily jobsite safety briefings, given to all jobsite personnel at project site by the Contractor before work begins and/or if hazards or potential hazards are discovered while working, with the purpose of discussing the scheduled activities for the day, the hazards related to these activities, activity specific safety procedures, and Job Hazard Analysis associated with the scheduled construction work. Daily jobsite briefings will be documented, available at the jobsite, and will include at a minimum, topics, name and signature of the person conducting the briefing session, names and signatures of attendants, name of the designated competent person, contactor's name, DDC Project ID, date, time, and location.

Director – Office of Construction Safety: Responsible for the operations of the Office of Construction Safety and the DDC Site Safety management programs.

Job Hazard Analysis (JHA): A process of identifying the major job tasks and any potential site-specific hazards that may be present during construction and establishing the means and methods to eliminate or control those hazards. A JHA will be documented, available at the jobsite and will include at a minimum work tasks, being performed, identified hazards, control methods for the identified hazards, contractor's name, DDC Project ID, location, date, name and signature of certifying person. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop and will be present at the worksite and produced upon request.

Qualified Person: As defined by OSHA, an individual who, by possession of a recognized degree, certificate, license, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve problems relating to the subject matter, the work, or the project. Qualified Persons are required under regulation to address issues pertaining, but without limit, to fall protection, scaffold design, maintenance and protection of traffic, and excavation protective system, among others.

Project Site: Those areas indicated in the Contract Documents where the Work is to be performed.

Project Safety Representative: The designated Project Safety Representative will have at a minimum an OSHA 30-hour Construction Safety Course and other safety training applicable to Contractor's/subcontractor's project work. This individual will be responsible to oversee safety performance of the required construction work, conduct documented daily safety inspections, and implement corrective actions to maintain a safe work site. The Project Safety Representative must have sufficient experience and skills necessary to thoroughly understand the health and safety hazards and controls and must have authority to undertake corrective actions. A dedicated full-time Project Safety Representative may be required on large projects and projects deemed by DDC to be particularly high risk. DDC reserves the right to request a dedicated full-time Project Safety Representative for any reason at any time during the course of the project at the expense of the Contractor without any additional costs to the DDC. The full-time Project Safety Representative will be present at the site during all work activities.

Resident Engineer ("RE"): Representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the work. The RE may be a consultant retained by DDC, including a Construction Management (CM) or Resident Engineer Inspection (REI) firm. If DDC has retained a CM, REI or other consultant firm to perform management and oversite for the Project (e.g., CM-Builder, CM-Design-Builder, Project Manager, Program Manager), that CM, REI or other consultant is the Resident Engineer for purposes of these Safety Requirements.

Safety Questionnaire: Used by DDC to evaluate Contractor's current and past safety performance. It is required to be completed by all Contractors initially when submitting bids for Construction work, or when being pre-qualified

and updated annually or as requested by the DDC.

Site Safety Manager: For certain projects, as defined in New York City Construction Codes – Title 28, the Contractor will provide a Site Safety Manager with a Site Safety Manager License issued by the New York City Department of Building.

Site Safety Plan: A site-specific safety plan developed by the Contractor for a DDC project. The Site Safety Plan will identify the project work scope, identify hazards associated with the project work and include project specific safety procedures and training appropriate and necessary to complete the work. The Site Safety Plan will be submitted within 30 days from the Award Date or as otherwise directed and is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site.

Unsafe or Unhealthy Condition: A condition that could be potentially hazardous to the health and safety of personnel or the public, and/or damaging to equipment, machinery, property, or the environment.

Weekly Safety Meetings: Weekly jobsite safety meetings, given to all jobsite personnel by Contractor, with the purpose of discussing general safety topics and job specific requirements encountered at the DDC work site. Weekly safety meetings will be documented and will include at a minimum, topics, name and signature of the person conducting the meeting, names and signatures of attendees, contractor's name, DDC Project ID, date, and location.

Work: The construction required by the Contractor's Contract Documents whether completed or partially completed, performed by the Contractor/ subcontractors. Work refers to the furnishing of labor, furnishing and incorporating materials and equipment into the construction and providing any service required by the Contract Documents to fulfill the Contractor's obligation to complete the Project. For the purposes of these Safety Requirements, the term "Work" includes all Utility Interference work (commonly referred to as "Section U", "EP-7", and "Joint Bid" work) performed in association with this Contract.

IV. RESPONSIBILITIES

All persons who manage, perform, and provide support for construction projects will conduct operations in compliance with the requirements identified in this Policy and all applicable governing regulatory agency requirements and guidelines pertaining to safety in construction.

A. Resident Engineer

1. Review and facilitate Contractor(s) Site Safety Plan submittals to DDC for acceptability.
2. Notify the Office of Construction Safety of the commencement of construction work.
3. Develop and implement a training verification process to ensure that all CM/REI, consultant, Contractor, and subcontractor employees are properly trained. Maintain all applicable initial and refresher training records and assures documentation availability on site.
4. Maintain documentation of and attend weekly safety meetings and daily safety job briefings.
5. Assure that Contractor(s) JHA's are current to reflect the work tasks being performed, hazards, and control methods to mitigate the identified hazards. Verify that all employees at the job site are trained on the JHAs and maintain supporting documentation on site.
6. Assure adequate planning for all critical construction activities (crane operation, excavation, confined space entry, etc.) including coordination between Contractor(s) /DDC/ other Agencies as required.
7. Maintain custody of all construction related permits, plans, approvals, drawings, etc., related to the project and assure their availability on site.
8. Recognize, minimize, or eliminate jobsite and public hazards, through required planning, inspection, verification, and corrective action process.
9. Monitor the conditions at the site for conformance with the Contractor's Site Safety Plan, DDC policies, permits, and all applicable regulations and documentation that pertain to construction safety.
10. Notify the Contractor and DDC immediately upon determination of any condition or activity existing which is not in compliance with the Contractor's Site Safety Plan, applicable federal, state or local codes or any

condition that presents a potential risk of injury to the public or workers or possible damage to property. Direct the Contractor to provide such labor, materials, equipment, and supervision to remedy such conditions.

11. Notify the Office of Construction Safety and the ACCO's Insurance and Risk Management Unit of project-related accidents, incidents, and near misses as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure within two (2) hours.
12. In case of an accident, incident, or near miss, RE is responsible to protect the integrity of the accident site including but not limited to: the safeguarding of all evidence, documentation of all personnel on site at the time of the accident, gather facts related to all accidents, incidents, or near miss, and prepare required DDC Construction Accident Report as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure. Maintain all records pertaining to accidents, incidents, and near miss and have them available upon request.
13. Notify the Office of Construction Safety within two (2) hours of the start of an inspection by any outside/ regulatory agency personnel, including NYS, OSHA, NYC DOB or any other City/State/Federal oversight entity and forward a copy of the inspection report within one business day of its receipt.
14. Escort and assist Construction Safety Auditors during all field and record audits.
15. Report any emergency conditions to the Office of Construction Safety immediately.

Note: In addition to the responsibilities listed above, if the Resident Engineer is a CM/REI or other non-City party hired by the City to manage the Project, the Resident Engineer is also required to do the following:

16. Provide personnel who are certified and or trained appropriately for the requirements of the project.
17. Perform an investigation for any project-related accidents, incidents, and near misses. Within 24-hours of the time of the accident, incident, or near miss, the CM/REI will submit an investigation report to the Office of Construction Safety. Such report will include proposed remedial measures and implementation of corrective actions to prevent recurrence.

DDC reserves the right to request that the CM/REI replace any CM/REI personnel for any reason at any time during the project.

B. Construction Contractors

Note: For CM-Build and CM-Design-Build Projects, the CM will meet all requirements listed in this section, as well as the Resident Engineer section above.

1. Submit a completed Safety Questionnaire and other safety performance related documentation with its bid or as part of a pre-qualification package.
2. Submit a Site Safety Plan within 30 days from the Award Date or as otherwise directed. The Site Safety Plan is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site. The Site Safety Plan will be revised and updated as necessary during the course of the project. If requested by the Office of Construction Safety, the Site Safety Plan must be developed and submitted for approval using a web-based system, the Site Safety Plan Application (SSP App).
3. Designate and identify a Project Safety Representative in the Site Safety Plan. The Contractor will immediately notify the Office of Construction Safety, in a form and manner acceptable to the Office of Construction Safety, of any permanent change to the designated Project Safety Representative. In the event the primary designated Project Safety Representative is temporary unable to perform his or her duties, an alternate Project Safety Representative will be provided. Resumes, outlining the qualification and experience for the Project Safety Representative (s) will be included in the Site Safety Plan and available upon request. DDC reserves the right to request the Contractor to replace a Project Safety Representative for any reason at any time during the course of the project.
4. Designate and identify a Competent Person(s) in the Site Safety Plan. Contractor/subcontractor may be required to provide more than one competent person due to construction operations and based on a number of work tasks/areas. DDC reserves the right to request the Contractor to replace a Competent Person or provide additional Competent Person(s) for any reason at any time during the course of the project. The Competent Person will be present at the site during all work activities.
5. For certain projects, as defined in New York City Construction Codes – Title 28, designate and identify the Licensed Site Safety Manager or Registered Construction Superintendent. Resumes, outlining the qualification and experience for the Licensed Site Safety Manager or Registered Construction Superintendent will be included in the Site Safety Plan and available upon request. The Contractor will immediately notify the Office

of Construction Safety, in a form and manner acceptable to the Office of Construction Safety, of any permanent change to the designated Site Safety Manager and/or Construction Superintendent. In the event the primary designated Site Safety Manager or Construction Superintendent is temporarily unable to perform his or her duties, an alternate Licensed Site Safety Manager and/or Registered Construction Superintendent will be provided. The Office of Construction Safety must be informed of such change. DDC reserves the right to request the Contractor to replace Site Safety Manager or Construction Superintendent for any reason at any time during the course of the project.

6. Develop a written Job Hazard Analysis (JHA) that identifies safety hazards and control methods for project specific work tasks. A preliminary JHA will be included in the Site Safety Plan submitted by the Contractor. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop during the course of the project and will be present at the worksite and produced upon request.
7. Develop project specific safety procedures to protect employees, general public, and property during all construction activities for the duration of the project.
8. Ensure that all employees are aware of the hazards associated with the project through documented formal and informal training and/or other communications. Conduct and document new employee and site-specific safety orientation for all Contractor and subcontractor personnel to review the hazards associated with the project as identified in the Site Safety Plan and the specific safety procedures and controls that will be used to protect workers, the general public and property. The Project Safety Representative will conduct this training prior to mobilization and if necessary during the course of the project. Documentation will be provided to the RE.
9. Prior to performing any work on DDC projects all Contractor's and subcontractor's employees will, at a minimum, have successfully completed, within the previous five calendar years, an OSHA 10-hour construction safety course.

   All training records (OSHA 10-hour, flagger, scaffold, fall protection, confined space, etc.) will be provided to the RE prior to mobilization, included in the Site Safety Plan, kept current during the course of the project, and available for review.
10. Conduct and document weekly safety meetings and daily job briefing sessions for the duration of the project. Attendance at weekly safety meetings and daily job briefing sessions is mandatory. A written record of weekly safety meetings will be available upon request and job briefing sessions will be available at the worksite.
11. As part of the Site Safety Plan, prepare site specific procedures, such as maintenance and protection of traffic plan, steel erection plan, confined space program, fall protection plan, demolition plan, site specific emergency evacuation plan, etc. (if not otherwise provided in the contract documents) and comply with all of its provisions.
12. Have immediately available for review at the project site where actual construction activities are being performed all applicable documentation, including but not limited to: JHAs for work tasks being performed, all required training records, MPT plan (where applicable), Noise and Dust Mitigation Plans, excavation protective system drawings (where applicable), Emergency Evacuation plan, fall protection program (where applicable), confined space program (where applicable), all required permits, daily job briefing records, all required documentation for crane operation (where applicable), daily inspection checklist, scaffold and sidewalk drawings (when applicable), safety data sheets for chemicals in use.
13. Comply with all federal, state and local safety and health rules, laws, and regulations.
14. Comply with all provisions of the Site Safety Plan.
15. Provide, replace, and adequately maintain at or around the project site, suitable and sufficient signage, lights, barricades and enclosures (fences, sidewalk sheds, netting, bracing, etc.). The project specific MPT plan will be developed, implemented, and reviewed during the course of the project.
16. The Project Safety Representative will conduct daily safety inspections, document the inspection results, implement corrective actions for the identified hazards. Maintain the inspection records and have them available upon request.
17. **Report unsafe or unhealthy conditions to the RE as soon as practical, but no more than 24 hours after discovery, and take prompt actions to remove or abate such conditions. Should an imminent dangerous condition be discovered, Contractor will stop all work in the area of danger until corrections are made.**
18. Report all accidents, incidents and near misses involving injuries to workers or the general public, as well as property damage, to the RE within one (1) hour.
19. Following an accident or incident, unless otherwise directed, the Contractor will not remove or alter any equipment, structure, material, or evidence related to the accident or incident. Exception: Immediate emergency procedures taken to secure structures, temporary construction, operations, or equipment that pose a continued imminent danger or facilitate assistance for persons who are trapped or who have sustained bodily injury. Take

additional measures as necessary to secure the accident or incident site and to protect against any further injury or property damage.

20. The Contractor will perform an investigation into the root cause of the accident, incident, or near miss. Within 24 hours of an accident, incident, or near miss, the Contractor will prepare and submit to the RE a written investigation report detailing findings, corrective actions, and hazard mitigation implementation to prevent recurrence.
21. Notify the RE within two (2) hours of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB, or others.
22. Maintain all records pertaining to all required safety compliance documents, accidents and incidents reports. DDC reserves the right to request copy of any records pertaining to the safety of the project and required by DDC and other federal, state, and city agencies, including but not limited to permits, training records, safety inspection records, drawings, equipment records, etc.
23. Cooperate with DDC Office of Construction Safety/ RE and address DDC recommendations on safety, which will in no way relieve the Contractor of its responsibilities for safety on the project. The Contractor has sole responsibility for safety.

V. SAFETY QUESTIONNAIRE

DDC requires that all Contractors provide information regarding their current and past safety performance and programs. This will be accomplished by the use of the DDC Safety Questionnaire. As a part of the bid submittal package, the contractor will submit a completed DDC Safety Questionnaire listing company workers' compensation experience modification rating and OSHA Incident Rates for the three (3) years prior to the date of the bid opening. DDC may request a Contractor to update its Questionnaire at any time or to provide more detailed information. The Contractor will provide the requested information within 15 days.

The following criteria will be used by DDC in reviewing the Contractor's responsibility, which will be based on the information provided on the questionnaire:

Criteria 1: OSHA Injury and Illness Rates (I&IR) are no greater than the average for the industry (based on the most current Bureau of Labor Statistics data for the Contractors SIC code); and

Criteria 2: Insurance workers compensation Experience Modification Rate (EMR) equal to or less than 1.0; and

Criteria 3: Any willful violations issued by OSHA or NYC DOB within the last three (3) years; and

Criteria 4: A fatality (worker or member of public) and injuries, requiring OSHA notification, experienced on or near Contractor's worksite within the last three (3) years; and

Criteria 5: Past safety performance on DDC projects (accidents; status of site safety plan submittals; etc.)

Criteria 6: OSHA violation history for the last three (3) years;

Criteria 7: Contractor will provide OSHA Injury and Illness Records (currently OSHA 300 and 300A Logs) for the last three (3) years.

If the Contractor fails to meet the basic criteria listed above, the Office of Construction Safety may request, through the ACCO, more details concerning the Contractor's safety experience. DDC may request the Contractor to provide copies of, among other things, accident investigation reports, OSHA records, OSHA and NYC DOB citations, EPA citations and written corrective action plan.

VI. SITE SAFETY PLAN

Within thirty (30) days from the Award Date or as otherwise directed, the Contractor will submit the Site Safety Plan. The Site Safety Plan will identify project work scope, safety hazards associated with the project tasks, and include specific safety procedures and training appropriate and necessary to complete the work. The Site Safety Plan is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site. Due to the project work scope and project duration, the Office of Construction Safety may grant a conditional acceptance for a Site Safety Plan without all sections being complete. In a case of a "Conditional Acceptance" of a Site Safety Plan,

the Contractor will provide the remaining sections previously incomplete and/or not submitted for review and acceptance by the Office of Construction Safety prior to the commencement of the construction activities. The Office of Construction Safety reserves the right to withdraw the initial "Conditional Acceptance" if the Contractor fails to provide the remaining sections of a Site Safety Plan. Failure by the Contractor to submit an acceptable Site Safety Plan will be grounds for default.

Site Safety Plan requirements: The Site Safety Plan will be a written document and will apply to all project specific Contractor and subcontractor operations, and will have at a minimum, the following elements with each described in a separate section (It may be necessary to modify the basic format for certain unique or high-risk projects, such as tunnels or high-rise construction). All Site Safety Plan sections will be numbered in the order listed below. For sections, which are not applicable for the type of the work being performed by the Contractor on DDC project, the Contractor will in writing indicate "Not applicable based on the project work scope." The Site Safety Plan will include Contractor's name, DDC project ID, project location (s), and development and revision dates. The Site Safety Plan will include the sections, attachments, and appendixes provided in the Site Safety Plan. All pages of the Site Safety Plan will be numbered. If requested by the Office of Construction Safety, the Site Safety Plan must be developed and submitted for approval using a web-based system, the Site Safety Plan Application (SSP App).

1. Project Work Scope – Detailed information regarding work tasks that will be performed by Contractor and subcontractors under the project.
2. Responsibility and Organization – Contractor's organization chart with responsible personnel for the project, including titles, names, contact information, roles, and responsibilities. All Contractor's personnel required by the DDC Safety Requirements will be identified.
3. Safety Training and Education – OSHA 10 Hours training, requirements for daily safety briefings and weekly safety meetings, any work task specific training, responsible staff for implementation of training program for the project.
4. Job Hazard Analysis (JHA) – Project specific Job Hazard Analysis including work tasks, identified hazards, hazard control methods (administrative, engineering, PPE) to protect workers, property and general public, Contractor's name, project id, location, name and signature of a certifying person, hazard assessment date.
5. Protection of Public – Project specific procedures covering safety of the general public during all project construction activities.
6. Hazard Corrective Actions - Procedures for hazard identification, including responsible person(s), frequency of safety inspections, implementation of corrective actions, safety inspection checklist.
7. Accident/Exposure Investigation – Project specific procedures for accident/incident/near miss investigation and implementation of corrective actions. Accident/incident/near miss notification procedure of DDC project staff (timer frame and responsible personnel).
8. Recording and Reporting Injuries – Procedures to meet 29 CFR 1904 requirements.
9. First Aid and Medical Attention – Responsible staff, location and inspection of First Aid kit, directions to local hospitals; emergency telephone numbers.
10. Project Specific Fire Protection and Prevention Program – Project specific procedures, including responsible staff, fire alarm system/methods, hot work procedures, etc.
11. Housekeeping Procedure.
12. Project Specific Illumination Procedure.
13. Project Specific Sanitation Procedure.
14. Personal Protective Equipment (PPE), including Respiratory Protection Program and Hearing Conservation Program, if required.
15. Hazard Communication Program – Contractor's Hazard Communication Program, responsible staff; training; SDS records, project specific list of chemicals; location of the program and SDS records.
16. Means of Egress – Information regarding free and unobstructed egress from all parts of the building or structure; exit marking; maintenance of means of egress, etc.
17. Employee Emergency Action Plan – Project specific: responsible staff, emergency alarm system/devices, evacuation procedure, procedure to account for employees after evacuation, etc.
18. Evacuation Plan – Project specific evacuation plan (drawing/scheme) with exists and evacuation routes.
19. Ionizing/Nonionizing Radiation – Competent person, license and qualification requirements, type of radiation, employee's exposure and protection, safety procedures, etc.

20. Material Handling, Storage, Use and Disposal – Project specific information regarding material storage, disposal, and handling: procedures, plan/drawings, etc.
21. Signs, Signals, and Barricades – Use of danger/warning signs, safety instruction signs, sidewalk closure and pedestrian fencing and barricades (if not included in the MPT plan), etc.
22. Tools – Hand and Power – Safety procedures for the type of tools to be used.
23. Scaffold – Project specific scaffold types, procedures, training requirements, scaffold drawings, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed; competent person, criteria for project specific scaffold, falling object protection, procedures for aerial lifts/scissor lifts.
24. Welding and Cutting – Project specific procedure for welding and cutting, including all necessary safety requirements such as fire prevention, personal protective equipment, hot work permits (if not covered by Contractor's Fire Prevention and Protection program, FDNY certificate requirements).
25. Electrical Safety – Project specific procedures, including lock out-tag out.
26. Fall Protection – Project specific information regarding selected fall protection systems, fall protection plan, responsible staff.
27. Cranes, Derrick, Hoists, Elevators, Conveyors – project specific equipment information including type, rated load capacity, manufacture specification requirements, competent person, exposure to falling load, inspection, recordkeeping, clearance requirements, communication procedure, ground lines, permits.
28. Excavation Safety – Competent person; excavation procedures; project specific protective system, including drawings, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed.
29. Protection of Underground Facilities and Utilities Procedure, including responsible staff and responsibilities.
30. Concrete and Masonry Construction Procedures
31. Maintenance and Protection of Traffic Plan – Project specific MPT plan, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed; flagmen training, public safety, etc.
32. Steel Erection – Site specific erection plan, requirements for applicable written notifications, competent person, fall protection plan, training requirements, etc.
33. Demolition – Engineering survey, including written evidence, disconnection of all effected utilities, identification of all hazardous chemicals, materials, gases, etc., floor openings, chutes, inspection and maintenance of all stairs/passageways, removal of materials/debris/structural elements, lock out/tag out, competent person.
34. Blasting and the Use of Explosives – Project specific safety procedures, warning signs, training/qualification, transportation, storage and use of explosives, inspection.
35. Stairways and Ladders – Types of stairs and ladders, safety procedures, training requirements.
36. Alcohol and Drug Abuse Policy
37. Rodents and Vermin Controls
38. Toxic and Hazardous Substances – Safety procedures for substances that Contractor's and subcontractor's employees can be exposed on project.
39. Noise Mitigation Plan – Completed project specific Noise Mitigation Plan, and noise mitigation procedures.
40. Confined Space Program – Project specific Confined Space Program, responsible staff, training records, equipment information, rescue procedure, list of project specific confined spaces, forms.
41. Construction Vehicles/Heavy Equipment – Type of construction vehicles/heavy equipment to be used on site, procedures
42. Dust Mitigation Plan – Completed project specific Dust Mitigation Plan, and dust mitigation procedures.
43. Working Over and Near Water. Diving Operations – safety procedures including personal protective equipment, fall protection, rescue services, etc.

The most critical component of the Site Safety Plan is the Job Hazard Analysis (JHA) section. The JHA form is a written document prepared by the Contractor. The Contractor will conduct a site and task assessment to identify the tasks and any potential safety or environmental hazards related to performance of the work, eliminate or implement controls for the potential hazards, and identify proper personal protective equipment for the task. The JHA will be communicated to all Contractor/subcontractor personnel on site. The JHA will include safety hazard identification and controls to protect employees, general public, and property.

The initial JHA will be included in the Contractor's Site Safety Plan and the current JHA form will be available at the construction site for reference. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop and will be present at the worksite and produced upon request.

VII. KICK-OFF MEETINGS/PRE-CONSTRUCTION AND SAFETY REVIEW

Prior to the start of construction activities on all DDC projects, RE will invite the Office of Construction Safety to the construction kick-off meeting. The Office of Construction Safety representative(s) will participate in this meeting with the Contractor and RE for the purpose of:

A. Reviewing DDC Contract Safety Requirements
B. Reviewing site-specific safety issues based on a project work scope, location, and any other factors which may impact safety of workers and general public.
C. Reviewing the Site Safety Plan and JHA requirements.
D. Reviewing Accident/Incident reporting and investigation procedures.
E. Reviewing designated safety contacts, roles, and responsibilities.
F. Discussing planned inspections and audits of the site by the Office of Construction Safety personnel.

VIII. EVALUATION DURING WORK IN PROGRESS

The Contractor's adherence to these Safety Requirements will be monitored throughout the project. This will be accomplished by the following:

A. Use of a safety checklist by a representative of the Office of Construction Safety (or other designated DDC representative) and the RE during regular inspections and comprehensive audits of the job site. Field Exit Conferences will be held with the RE and Contractor Project Safety Representatives.
B. The RE will continually monitor the safety and environmental performance of the Contractor's employees and work methods. Deficiencies will be brought to the attention of the Contractor's Project Safety Representative on site for immediate correction. The RE will maintain a written record of these deficiencies and have these records available upon request. Any critical deficiencies will be immediately reported to the Office of Construction Safety via telephone (718)391-1911.
C. If the Contractor's safety performance during the project is not up to DDC standards (safety performance measure, accident/incident rate, etc.) the Director – Office of Construction Safety, or his/her designee will meet with the Contractor's Project Safety Representative and other representatives, the RE, and the DDC Environmental Specialist (if environmental issues are involved). The purpose of this meeting is to 1) determine the level of non-compliance; 2) explain and clarify the safety/environmental provisions; 3) agree on a future course of action to correct the deficiencies.
D. If the deficiencies continue, the Commissioner may, without limitation, declare the Contractor in default.
E. The Contractor will within 1 hour inform the RE of all accidents/incidents/near misses including all fatalities, any injuries to employees or members of the general public, and property damage (e.g., structural damage, equipment rollovers, utility damage, loads dropped from crane). The RE will notify the Office of Construction Safety as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure and will maintain a record of all Contractor accidents/incidents for the project.
F. The Contractor and the RE will notify the Office of Construction Safety within two (2) hours of the start of any NYS-DOL/ NYC-COSH/ OSHA/ EPA inspections.

IX. SAFETY PERFORMANCE EVALUATION

The Contractor's safety record, including accident/incident history and DDC safety inspection results, will be considered as part of the Contractor's performance evaluation at the conclusion of the project. Poor safety performance during the course of the project will be a reason to rate a Contractor unsatisfactory which may be reflected in the City's PASSPort system and will be considered for future procurement actions as set forth in the City's Procurement Policy Board Rules.

NOTICE TO BIDDERS

Please be advised that the following Riders to the March 2017 New York City Standard Construction Contract have been attached and incorporated in this Invitation for Bid:

- Rider regarding Non-Compensable Delays and Grounds for Extension;
- Rider regarding NYC Earned Safe and Sick Time Act.

Other than provisions specifically delineated in the Riders, all other terms of the March 2017 New York City Standard Construction Contract continue to apply in full force and effect.

RIDER TO NEW YORK CITY STANDARD CONSTRUCTION CONTRACT (MARCH 2017) REGARDING NON-COMPENSABLE DELAYS AND GROUNDS FOR EXTENSION

The following provisions supersede the corresponding provisions in the March 2017 version of the New York City Standard Construction Contract:

1. Section **11.5.1** provides as follows:

   11.5.1 The acts or omissions of public or government bodies (other than **City** agencies) or of any third parties who are disclosed in the **Contract Documents,** or those third parties who are ordinarily encountered or who are generally recognized as related to the **Work**, including but not limited to, **Other Contractors**, utilities or private enterprises;

2. Section **11.5.6** provides as follows:

   11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God; acts of war or of the public enemy or terrorist acts; disruption, outage or power failure caused by a utility's inability or failure to provide service, pandemics, epidemics, outbreaks of infectious disease or any other public health emergency; other states of emergency declared by the City, State or Federal government , quarantine restrictions, and freight embargoes; including the **City's** reasonable responses to any of the above; and

3. Section **13.3** provides as follows:

   13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

   13.3.1 By any of the acts or omissions of the **City**, its officials, agents or employees set forth in Articles **11.4.1.1** through **11.4.1.9**; or

   13.3.2 By or attributable to any of the items set forth in Articles **11.5.1** through **11.5.7**.

   13.3.3 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

NYC EARNED SAFE AND SICK TIME ACT CONTRACT RIDER

(To supersede Section 4.06 of the January 2018 Appendix A and Section 35.5 of the March 2017 Standard Construction Contract and to be attached to other City contracts and solicitations)

A. *Introduction and General Provisions.*

1. The Earned Safe and Sick Time Act ("ESSTA"), codified at Title 20, Chapter 8 of the New York City Administrative Code, also known as the "Paid Safe and Sick Leave Law," requires covered employees (as defined in Admin. Code § 20-912) in New York City ("City") to be provided with paid safe and sick time. Contractors of the City or of other governmental entities may be required to provide safe and sick time pursuant to the ESSTA. The ESSTA is enforced by the City's Department of Consumer and Worker Protection ("DCWP"), which has promulgated 6 RCNY §§ 7-101 and 201 *et seq*. ("DCWP Rules").

2. The Contractor agrees to comply in all respects with the ESSTA and the DCWP Rules, and as amended, if applicable, in the performance of this agreement. The Contractor further acknowledges that such compliance is a material term of this agreement and that failure to comply with the ESSTA in performance of this agreement may result in its termination.

3. The Contractor must notify (with a copy to DCWP at ComplianceMonitoring@dcwp.nyc.gov) the Agency Chief Contracting Officer of the City Agency or other entity with whom it is contracting in writing within 10 days of receipt of a complaint (whether oral or written) or notice of investigation regarding the ESSTA involving the performance of this agreement. Additionally, the Contractor must cooperate with DCWP's guidance and must comply with DCWP's subpoenas, requests for information, and other document demands as set forth in the ESSTA and the DCWP Rules. More information is available at https://www1.nyc.gov/site/dca/about/paid-sick-leave-what-employers-need-to-know.page.

4. Upon conclusion of a DCWP investigation, Contractor will receive a findings letter detailing any employee relief and civil penalties owed. Pursuant to the findings, Contractor will have the opportunity to settle any violations and cure the breach of this agreement caused by failure to comply with the ESSTA either i) without a trial by entering into a consent order or ii) appearing before an impartial judge at the City's administrative tribunal. In addition to and notwithstanding any other rights and remedies available to the City, non-payment of relief and penalties owed pursuant to a consent order or final adjudication within 30 days of such consent order or final adjudication may result in the termination of this agreement without further opportunity to settle or cure the violations.

5. The ESSTA is briefly summarized below for the convenience of the Contractor. The Contractor is advised to review the ESSTA and the DCWP Rules in their entirety. The Contractor may go to www.nyc.gov/PaidSickLeave for resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the Contractor can get more information about how to comply with the ESSTA and the DCWP Rules. The Contractor acknowledges that it is responsible for compliance with the ESSTA and the DCWP Rules notwithstanding any inconsistent language contained herein.

B. *Pursuant to the ESSTA and DCWP Rules: Applicability, Accrual, and Use.*

1. An employee who works within the City must be provided paid safe and sick time.[1] Employers with one hundred or more employees are required to provide 56 hours of safe and sick time for an employee each calendar year. Employers with fewer than one hundred employees are required to provide 40 hours of sick leave each calendar year. Employers must provide a minimum of one hour of safe and sick time for every 30 hours worked by an employee and compensation for such safe and sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage at the time the paid safe or sick time is taken. Employers are not discouraged or prohibited from providing more generous safe and sick time policies than what the ESSTA requires.

2. Employees have the right to determine how much safe and sick time they will use, provided that an employer may set a reasonable minimum increment for the use of safe and sick time not to exceed four hours per day. For the use of safe time or sick time beyond the set minimum increment, an employer may set fixed periods of up to thirty minutes beyond the minimum increment. In addition, an employee may carry over up to 40 or 56 hours of unused safe and sick time to the following calendar year, provided that no employer is required to carry over unused paid safe and sick time if the employee is paid for such unused safe and sick time and the employer provides the employee with at least the legally required amount of paid safe and sick time for such employee for the immediately subsequent calendar year on the first day of such calendar year.

3. An employee entitled to safe and sick time pursuant to the ESSTA may use safe and sick time for any of the following:

a. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;

b. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild, or grandparent, the child or parent of an employee's spouse or domestic partner, any other individual related by blood to the employee, and any other individual whose close association with the employee is the equivalent of a family relationship) who has a mental illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;

---

[1] Pursuant to the ESSTA, if fewer than five employees work for the same employer, and the employer had a net income of less than one million dollars during the previous tax year, such employer has the option of providing such employees uncompensated safe and sick time.

c. closure of such employee's place of business by order of a public official due to a public health emergency;

d. such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency; or

e. when the employee or a family member has been the victim of a family offense matter, sexual offense, stalking, or human trafficking:

1. to obtain services from a domestic violence shelter, rape crisis center, or other shelter or services program for relief from a family offense matter, sexual offense, stalking, or human trafficking;
2. to participate in safety planning, temporarily or permanently relocate, or take other actions to increase the safety of the employee or employee's family members from future family offense matters, sexual offenses, stalking, or human trafficking;
3. to meet with a civil attorney or other social service provider to obtain information and advice on, and prepare for or participate in any criminal or civil proceeding, including but not limited to, matters related to a family offense matter, sexual offense, stalking, human trafficking, custody, visitation, matrimonial issues, orders of protection, immigration, housing, discrimination in employment, housing or consumer credit;
4. to file a complaint or domestic incident report with law enforcement;
5. to meet with a district attorney's office;
6. to enroll children in a new school; or
7. to take other actions necessary to maintain, improve, or restore the physical, psychological, or economic, health or safety of the employee or the employee's family member or to protect those who associate or work with the employee.

4. An employer must not require an employee, as a condition of taking safe and sick time, to search for a replacement. However, where the employee's need for safe and sick time is foreseeable, an employer may require an employee to provide reasonable notice of the need to use safe and sick time. For an absence of more than three consecutive work days, an employer may require reasonable documentation that the use of safe and sick time was needed for a reason listed in Admin. Code § 20-914; and/or written confirmation that an employee used safe and sick time pursuant to the ESSTA. However, an employer may not require documentation specifying the nature of a medical condition, require disclosure of the details of a medical condition, or require disclosure of the details of a family offense matter, sexual offense, stalking, or human trafficking, as a condition of providing safe and sick time. Health information and information concerning family offenses, sexual offenses, stalking or human trafficking obtained solely due to an

employee's use of safe and sick time pursuant to the ESSTA must be treated by the employer as confidential. An employer must reimburse an employee for all reasonable costs or expenses incurred in obtaining such documentation for the employer.

5. An employer must provide to all employees a written policy explaining its method of calculating sick time, policies regarding the use of safe and sick time (including any permissible discretionary conditions on use), and policies regarding carry-over of unused time at the end of the year, among other topics. It must provide the policy to employees using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny safe and sick time to an employee because of non-compliance with such a policy.

6. An employer must provide a pay statement or other form of written documentation that informs the employee of the amount of safe/sick time accrued and used during the relevant pay period and the total balance of the employee's accrued safe/sick time available for use.

7. Safe and sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the safe and sick time was used.

C. *Exemptions and Exceptions*. Notwithstanding the above, the ESSTA does not apply to any of the following:

1. an independent contractor who does not meet the definition of employee under N.Y. Labor Law § 190(2);

2. an employee covered by a valid collective bargaining agreement, if the provisions of the ESSTA are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the ESSTA for such employee;

3. an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines their own schedule, has the ability to reject or accept any assignment referred to them, and is paid an average hourly wage that is at least four times the federal minimum wage;

4. an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

5. an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

6. a participant in a Work Experience Program (WEP) under N.Y. Social Services Law § 336-c.

D. *Retaliation Prohibited.* An employer shall not take any adverse action against an employee that penalizes the employee for, or is reasonably likely to deter the employee from or interfere with the employee exercising or attempting in good faith to exercise any right provided by the ESSTA. In addition, an employer shall not interfere with any investigation, proceeding, or hearing pursuant to the ESSTA.

E. *Notice of Rights.*

1. An employer must provide its employees with written notice of their rights pursuant to the ESSTA. Such notice must be in English and the primary language spoken by an employee, provided that DCWP has made available a translation into such language. Downloadable notices are available on DCWP's website at https://www1.nyc.gov/site/dca/about/Paid-Safe-Sick-Leave-Notice-of-Employee-Rights.page. The notice must be provided to the employees by a method that reasonably ensures personal receipt by the employee.

2. Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed $50.00 for each employee who was not given appropriate notice.

F. *Records*. An employer must retain records documenting its compliance with the ESSTA for a period of at least three years, and must allow DCWP to access such records in furtherance of an investigation related to an alleged violation of the ESSTA.

G. *Enforcement and Penalties.*

1. Upon receiving a complaint alleging a violation of the ESSTA, DCWP must investigate such complaint. DCWP may also open an investigation to determine compliance with the ESSTA on its own initiative. Upon notification of a complaint or an investigation by DCWP, the employer must provide DCWP with a written response and any such other information as DCWP may request. If DCWP believes that a violation of the ESSTA has occurred, it has the right to issue a notice of violation to the employer .

2. DCWP has the power to grant an employee or former employee all appropriate relief as set forth in Admin. Code § 20-924(d). Such relief may include, but is not limited to, treble damages for the wages that should have been paid; statutory damages for unlawful retaliation; and damages, including statutory damages, full compensation for wages and benefits lost, and reinstatement, for unlawful discharge. In addition, DCWP may impose on an employer found to have violated the ESSTA civil penalties not to exceed $500.00 for a first violation, $750.00 for a second violation within two years of the first violation, and $1,000.00 for each succeeding violation within two years of the previous violation. When an employer has a policy or practice of not providing or refusing to allow the use of safe and sick time to its employees, DCWP may seek penalties and relief on a per employee basis.

3. Pursuant to Admin. Code § 20-924.2, (a) where reasonable cause exists to believe that an employer is engaged in a pattern or practice of violations of the ESSTA, the Corporation Counsel may commence a civil action on behalf of the City in a court of competent jurisdiction by filing a complaint setting forth facts relating to such pattern or practice and requesting relief, which may include injunctive relief, civil penalties and any other appropriate relief. Nothing in § 20-924.2 prohibits DCWP from exercising its authority under section 20-924 or the Charter, provided that a civil action pursuant to § 20-924.2 shall not have previously been commenced.

H. *More Generous Polices and Other Legal Requirements.* Nothing in the ESSTA is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous safe and sick time policy, or the obligation of an employer to comply with any contract, collective bargaining agreement, employment benefit plan or other agreement providing more generous safe and sick time. The ESSTA provides minimum requirements pertaining to safe and sick time and does not preempt, limit, or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of safe and sick leave or time, whether paid or unpaid, or that extends other protections to employees. The ESSTA may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

CITY OF NEW YORK

STANDARD CONSTRUCTION CONTRACT

March 2017

(NO TEXT ON THIS PAGE)

CITY OF NEW YORK STANDARD CONSTRUCTION CONTRACT

TABLE OF CONTENTS

(NO TEXT ON THIS PAGE)

WITNESSETH:

The parties, in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I: THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as maybe specifically excluded, shall be deemed to be part of this **Contract**:

1.1.1 All provisions required by law to be inserted in this **Contract**, whether actuallyinserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The **Contract**;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation andProposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 All Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed or the Order to Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the **Contractor** shall be deemed to have estimated the most expensive way of doing the **Work**, unless the **Contractor** shall have asked for and obtained a decision in writing from the **Commissioner** of the **Agency** that is entering into this **Contract**, before the submission of its bid, as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 **"Addendum"** or **"Addenda"** shall mean the additional Contract provisions and/or technical clarifications issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 **"Agency"** shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 **"Agency Chief Contracting Officer" (ACCO)** shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO, or his/her duly authorized representative.

2.1.4 **"Allowance"** shall mean a sum of money which the Agency may include in the total amount of the Contract for such specific contingencies as the Agency believes may be necessary to complete the Work, *e.g.*, lead or asbestos remediation, and for which the Contractor will be paid on the basis of stipulated unit prices or a formula set forth in the Contract or negotiated between the parties provided, however, that if the Contractor is not directed to use the Allowance, the Contractor shall have no right to such money and it shall be deducted from the total amount of the Contract.

2.1.5 **"City"** shall mean the City of New York.

2.1.6 **"City Chief Procurement Officer" (CCPO)** shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction, or his/her duly authorized representative.

2.1.7 **"Commissioner"** shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.8 **"Comptroller"** shall mean the Comptroller of the City of New York.

2.1.9 **"Contract"** or **"Contract Documents"** shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.10 **"Contract Drawings"** shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.11 **"Contract Work"** shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.12 **"Contractor"** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and its, their, his/her successors, personal representatives, executors, administrators, and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.13 **"Days"** shall mean calendar days, except where otherwise specified.

2.1.14 **"Engineer"** or **"Architect"** or **"Project Manager"** shall mean the person so designated in writing by the Commissioner in the Notice to Proceed or the Order to Work to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be. Subject to written approval by the Commissioner, the Engineer, Architect or Project Manager may designate an authorized representative.

2.1.15 **"Engineering Audit Officer" (EAO)** shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.16 **"Extra Work"** shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

2.1.17 **"Federal-Aid Contract"** shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.

2.1.18 **"Final Acceptance"** shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

2.1.19 **"Final Approved Punch List"** shall mean a list, approved pursuant to Article 14.2.2, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.

2.1.20 **"Law"** or **"Laws"** shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.

2.1.21 **"Materialman"** shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.

2.1.22 **"Means and Methods of Construction"** shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.

2.1.23**"Notice to Proceed" or "Order to Work"** shall mean the written notice issued bythe Commissioner specifying the time for commencement of the Work and the Engineer, Architect or Project Manager.

2.1.24 **"Other Contractor(s)"** shall mean any contractor (other than the entity which executed this Contract or its Subcontractors) who or which has a contract with the City for work on or adjacent to the building or Site of the Work.

2.1.25 **"Payroll Taxes"** shall mean State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), and payments pursuant to the Federal Insurance Contributions Act (FICA).

2.1.26 **"Project"** shall mean the public improvement to which this Contract relates.

2.1.27 **"Procurement Policy Board" (PPB)** shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.

2.1.28 **"Required Quantity"** in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.

2.1.29 **"Resident Engineer"** shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.

2.1.30 **"Site"** shall mean the area upon or in which the Contractor's operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.31 **"Small Tools"** shall mean items that are ordinarily required for a worker's job

function, including but not limited to, equipment that ordinarily has no licensing, insurance or substantive storage costs associated with it; such as circular and chain saws, impactdrills, threaders, benders, wrenches, socket tools, etc.

2.1.32 **"Specifications"** shall mean all of the directions, requirements, and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.33 **"Subcontractor"** shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, or superintendence, supervision and/or management at the Site. Wherever the word Subcontractor appears, it shall also mean sub-Subcontractor.

2.1.34 **"Substantial Completion"** shall mean the written determination by the Engineer that the Work required under this Contract is substantially, but not entirely, complete and the approval of the **Final Approved Punch List**.

2.1.35 **"Work"** shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and obtaining any and all permits, certifications and licenses as may be necessary and required to complete the Work, and shall include both Contract Work and Extra Work.

CHAPTER II: THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings**, **Specifications,** and **Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship anddesign of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings**, **Specifications,** and **Addenda**, the **Means and Methods of Construction** shall be such as the **Contractor** may choose; subject, however, to the **Engineer's** right to reject the **Means and Methods of Construction** proposed by the **Contractor** which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project**.

4.2 The **Engineer's** approval of the **Contractor's Means and Methods of Construction**, orhis/her failure to exercise his/her right to reject such means or methods, shall not relieve the **Contractor** of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such rightto reject

create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** ("**PPB** Rules") in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB** Rules and a provision of this **Contract**, the **PPB** Rules shall take precedence.

5.3 Noise Control Code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** ("Administrative Code"), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the **City** Department of Environmental Protection.

5.3.2 The **Contractor** agrees to comply with Section 24-219 of the Administrative Code and implementing rules codified at 15 Rules of the City of New York ("RCNY") Section 28-100 *et seq*. In accordance with such provisions, the **Contractor**, if the **Contractor** is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each **Site**, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the **City** Department of Environmental Protection. In addition, the **Contractor**'s certified Construction Noise Mitigation Plan is subject inspection by the **City** Department of Environmental Protection in accordance with Section 28-101 of Title 15 of RCNY. No **Contract Work** may take place at a **Site** unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the **Contractor** specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) "Contractor" means any person or entity that enters into a Public Works Contract with a **City Agency**, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract.

5.4.1(b) "Motor Vehicle" means any self-propelled vehicle designed for transporting

persons or property on a street or highway.

5.4.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition,or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) horsepower or less and that are not used in any construction program or project.

5.4.1(e) "Public Works Contract" means a contract with a **City Agency** for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a **City Agency** for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a **City Agency** for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All **Contractors** shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), **Contractors** may use diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm)to fulfill the requirements of this Article 5.4.2, where the Commissioner of the **City** Department of Environmental Protection ("DEP Commissioner") has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of **Agencies** and **Contractors**. Any such determination shall expire after six (6) months unless renewed.

5.4.2(c) **Contractors** shall not be required to comply with this Article 5.4.2 where the **City Agency** letting this **Contract** makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such **Contractor** in its fulfillment of the requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per

million (30 ppm) is available. Any finding made pursuant to this Article 5.4.2(c) shall expire after sixty (60) **Days**, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the **City Agency** renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) **Contractors** may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the **City Agency** letting this **Contract**.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All **Contractors** shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, **Contractors** shall comply with the regulations of the **City** Department of Environmental Protection, as and when adopted, Chapter 14of Title 15 of the Rules of the City of New York (RCNY). The **Contractor** shall fully document all steps in the best available technology selection process and shall furnish such documentation to the **City Agency** or the DEP Commissioner upon request. The **Contractor** shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No **Contractor** shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three (3) years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty (20) **Days**.

5.4.3(d) The **Contractor** shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(i) Where the **City Agency** makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by this Article 5.4.3 is unavailable for such vehicle, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(ii) Where the DEP Commissioner has issued a written waiver based upon the Contractor having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(iii) In determining which technology to use for the purposes of Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above, the **Contractor** shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(iv) The **Contractor** shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the **ACCO** of the **City Agency** letting this **Contract**. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above shall expire after one hundred eighty (180) **Days**, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the **City Agency** renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. The **Contractor** shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) The **Contractor's** compliance with Article 5.4 may be independently monitored. If it is determined that the **Contractor** has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the **City** shall be reimbursed by the **Contractor**.

5.4.5(b) Any **Contractor** who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand ($1,000) and ten thousand ($10,000) dollars, in addition to twice the amount of money saved by such **Contractor** for failure to comply with Article 5.4.

5.4.5(c) No **Contractor** shall make a false claim with respect to the provisions of Article 5.4 to a **City Agency**. Where a **Contractor** has been found to have done so, such **Contractor** shall be liable for a civil penalty of twenty thousand ($20,000) dollars, in addition to twice the amount of money saved by such **Contractor** in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the **Contractor** shall report to the **City Agency** the following information:

5.4.6(a)(i) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(a)(ii) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(a)(iii) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(a)(iv) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(a)(v) The locations where such Nonroad Vehicles were used; and

5.4.6(a)(vi) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the **Contractor's** efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm).

5.4.6(b) The **Contractor** shall submit the information required by Article 5.4.6(a) at the completion of **Work** under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover **Work** performed during the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson River as it exists now or may be extended would intersect with the southerly line of West Houston Street in the Borough of Manhattan extended, thence easterly along the southerly side of West Houston Street to the southerly side of Houston Street, thence easterly along the southerly side of Houston Street to the southerly side of East Houston Street, thence northeasterly along the southerly side of East Houston Street to the point where it would intersect with the United States pierhead line in the East River as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the **City** known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower (HP) and greater, and that is not a Motor Vehicle or a vehicle used

solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) HP or less and that are not used in any construction program or project.

5.5.1(e) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine HP rating of fifty (50) HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor,** and any **Subcontractor** shall comply with Chapter 12 of the Administrative Code.

5.7 Waste Treatment, Storage, and Disposal Facilities and Transporters. In connection withthe **Work**, the **Contractor** and any **Subcontractor** shall use only those waste treatment, storage, and disposal facilities and waste transporters that possess the requisite license, permit or other governmental approval necessary to treat, store, dispose, or transport the waste, materials or hazardous substances.

5.8 Environmentally Preferable Purchasing. The **Contractor** shall ensure that products purchased or leased by the **Contractor** or any **Subcontractor** for the **Work** that are not specified by the **City** or are submitted as equivalents to a product specified by the **City** comply with the requirements of the New York City Environmentally Preferable Purchasing Program contained in Chapter 11 of Title 43 of the RCNY, pursuant to Chapter 3 of Title 6 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe, and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor's** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the

Contract shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective **Work** is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

ARTICLE 7. PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICESAND INDEMNIFICATION

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism,it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect all persons and the property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract.** The **Contractor's** obligation to protect shall include the duty to provide, place or replace, and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract**.

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall also send written notice of any such event to all insurance carriers that issued potentially responsive policies (including commercial general liability insurance carriers for events relating to the **Contractor**'s own employees) no later than twenty (20) days after such event and again no later than twenty (20) days after the initiation of any claim and/or action resulting therefrom. Such notice shall contain the following information: the number of the insurance policy, the name of the Named Insured, the date and location of the incident, and the identity of the persons injured or property damaged. For any policy on which the **City** and/or the **Engineer**, **Architect**, or **Project Manager** are Additional Insureds, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Additional Insured, such other AdditionalInsureds, as well as the Named Insured."

7.3.2(a) Whenever such notice is sent under a policy on which the **City** is an Additional Insured, the **Contractor** shall provide copies of the notice to the **Comptroller,** the **Commissioner** and the **City** Corporation Counsel. The copy to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, New York, 10007. The copy to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions. The copy to the **City** Corporation Counsel shall be sent to Insurance Claims Specialist, Affirmative Litigation

Division, New York City Law Department, 100 Church Street, New York, New York 10007.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to anyappropriate insurance carrier(s) in a timely and complete manner, the **Contractor**shall indemnify the **City** for all losses, judgments, settlements, and expenses, including reasonable attorneys' fees, arising from an insurer's disclaimer of coverage citing late notice by or on behalf of the **City**.

7.4 To the fullest extent permitted by law, the **Contractor** shall defend, indemnify, and hold the **City**, its employees, and officials (the "Indemnitees") harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors**) and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys' fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor's** and/or its **Subcontractors'** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of **Law** or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing orcontributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of **Law**, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The provisions of this Article 7 shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III: TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence the **Work** on the date specified in the **Notice to Proceed** or the **Order to Work**. The time for performance of the **Work** under the **Contract** shall be computed from the date specified in the **Notice to Proceed** or the **Order to Work**. **TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified in this Contract, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule based on the Critical Path Methodin the form of

a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the variousoperations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related contracts; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**, including the anticipated time for obtaining required approvals pursuant to Article 10; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the **Engineer**, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction**, at its sole cost and expense, as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the **City** of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to provide the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within fifteen (15) **Days** after the **Contractor** becomes aware or reasonably should be

aware of each such condition, the **Contractor** must notify the **Resident Engineer** or **Engineer**, as directed by the **Commissioner**, in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay. Such notice shall include a description of the construction activities that are or could be affected by the condition and may include any recommendations the **Contractor** may have to address the delay condition and any activities the **Contractor** may take to avoid or minimize the delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay as provided for in this Article 11,within forty-five (45) **Days** from the time such damages are first incurred for each such condition, the **Contractor** shall submit to the **Commissioner** a verified written statement of the details and estimates of the amounts of such damages, including categories of expected damages and projected monthly costs, together with documentary evidence of such damages as the **Contractor** may have at the time of submission ("statement of delay damages"), as further detailed in Article 11.6. The **Contractor** may submit the above statement within such additional time as may be granted by the **Commissioner** in writing upon written request therefor.

11.1.3 Articles 11.1.1 and 11.1.2 do not relieve the **Contractor** of its obligation to comply with the provisions of Article 44.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, inthe discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of both Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

11.4 Compensable Delays

11.4.1 The **Contractor** agrees to make claim only for additional costs attributable to delayin the performance of this **Contrac**t necessarily extending the time for completion of the **Work** or resulting from acceleration directed by the **Commissioner** and required to maintain the progress schedule, occasioned solely by any act or omission to act of the **City** listed below. The **Contractor** also agrees that delay from any other cause shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**.

11.4.1.1 The failure of the **City** to take reasonable measures to coordinate and progress the **Work** to the extent required by the **Contract**, except that the City shall not be responsible for the **Contractor's** obligation to coordinate and progress the **Work** of its **Subcontractors**.

11.4.1.2 Unreasonable delays attributable to the review of shop drawings, the issuance of change orders, or the cumulative impact of change orders that were not brought about by any act or omission of the **Contractor**.

11.4.1.3 The unavailability of the **Site** caused by acts or omissions of the **City**..

11.4.1.4 The issuance by the **Engineer** of a stop work order that was not brought about through any act or omission of the **Contractor**.

11.4.1.5 Differing site conditions or environmental hazards that were neitherknown nor reasonably ascertainable on a pre-bid inspection of the **Site**or review

of the bid documents or other publicly available sources, and that are not ordinarily encountered in the **Project**'s geographical area or neighborhood or in the type of **Work** to be performed.

11.4.1.6 Delays caused by the **City's** bad faith or its willful, malicious, or grossly negligent conduct;

11.4.1.7 Delays not contemplated by the parties;

11.4.1.8 Delays so unreasonable that they constitute an intentional abandonment of the **Contract** by the **City**; and

11.4.1.9 Delays resulting from the **City's** breach of a fundamental obligation of the **Contract**.

11.4.2 No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the **Work** will be or is substantially completed by the date of **Substantial Completion** provided for in Schedule A unless acceleration has been directed by the **Commissioner** to meet the date of **Substantial Completion** set forth in Schedule A, or unless there is a provision in the **Contract** providing for additional compensation for early completion.

11.4.3 The provisions of this Article 11 apply only to claims for additional costs attributable to delay and do not preclude determinations by the **Commissioner** allowing reimbursements for additional costs for **Extra Work** pursuant to Articles 25 and 26 of this **Contract**. To the extent that any cost attributable to delay is reimbursed as part of a change order, no additional claim for compensation under this Article 11 shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no claim for, and is deemed to have included in its bid prices for the various items of the **Contract**, the extra/additional costs attributable to any delays caused by or attributable to the items set forth below. For such items, the **Contractor** shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**, in accordance with the provisions of Article 13. Such extensions of time will be granted, if at all, pursuant to the grounds set forth in Article 13.3.

11.5.1 The acts or omissions of any third parties, including but not limited to **Other Contractors**, public/ governmental bodies (other than **City Agencies**), utilities or private enterprises, who are disclosed in the **Contract Documents** or are ordinarily encountered or generally recognized as related to the **Work**;

11.5.2 Any situation which was within the contemplation of the parties at the time of entering into the **Contract**, including any delay indicated or disclosed in the **Contract Documents** or that would be generally recognized by a reasonably prudent contractor as related to the nature of the **Work**, and/or the existence of any facility or appurtenance owned, operated or maintained by any third party, as indicated or disclosed in the **Contract Documents** or ordinarily encountered or generally recognized as related to the nature of the **Work**;

11.5.3 Restraining orders, injunctions or judgments issued by a court which were caused by a Contractor's submission, action or inaction or by a Contractor's **Means and Methods of Construction**, or by third parties, unless such order, injunction or judgment was the result of an act or omission by the **City**;

11.5.4 Any labor boycott, strike, picketing, lockout or similar situation;

11.5.5 Any shortages of supplies or materials, or unavailability of equipment, required by the **Contract Work**;

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God, or acts of war or of the public enemy or terrorist acts, including the **City's** reasonable responses thereto; and

11.5.7 **Extra Work** which does not significantly affect the overall completion of the **Contract**, reasonable delays in the review or issuance of change orders or field orders and/or in shop drawing reviews or approvals.

11.6 Required Content of Submission of Statement of Delay Damages

11.6.1 In the verified written statement of delay damages required by Article 11.1.2, the following information shall be provided by the **Contractor**:

11.6.1.1 For each delay, the start and end dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, an explanation of how they were delayed, and the reasons for the delay, including identifying the applicable act or omission of the City listed in Article 11.4.

11.6.1.2 A detailed factual statement of the claim providing all necessary dates, locations and items of **Work** affected by the claim.

11.6.1.3 The estimated amount of additional compensation sought and a breakdown of that amount into categories as described in Article 11.7.

11.6.1.4 Any additional information requested by the **Commissioner**.

11.7 Recoverable Costs

11.7.1 Delay damages may be recoverable for the following costs actually and necessarily incurred in the performance of the **Work**:

11.7.1.1 Direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits, based on time and materials records;

11.7.1.2 Necessary materials (including transportation to the **Site**), based on time and material records;

11.7.1.3 Reasonable rental value of necessary plant and equipment other than small tools, plus fuel/energy costs according to the applicable formula set forth in Articles 26.2.4 and/or 26.2.8, based on time and material records;

11.7.1.4 Additional insurance and bond costs;

11.7.1.5 Extended **Site** overhead, field office rental, salaries of field office staff, on-site project managers and superintendents, field office staff vehicles, **Project-**specific storage, field office utilities and telephone, and field office consumables;

11.7.1.6 Labor escalation costs based on actual costs;

11.7.1.7 Materials and equipment escalation costs based on applicable industry indices unless documentation of actual increased cost is provided;

11.7.1.8 Additional material and equipment storage costs based on actual documented costs and additional costs necessitated by extended manufacturer warranty periods; and

11.7.1.9 Extended home office overhead calculated based on the following formula:

(1) Subtract from the original **Contract** amount the amount earned by original contractual **Substantial Completion** date (not

including change orders);
(2) Remove 15% overhead and profit from the calculation in item (1) by dividing the results of item (1) by 1.15;
(3) Multiply the result of item (2) by 7.25% for the total home office overhead;
(4) Multiply the result of item (3) by 7.25% for the total profit; and
(5) The total extended home office overhead will be the total of items (3) and (4).

11.7.2 Recoverable Subcontractor Costs. When the **Work** is performed by a **Subcontractor**, the **Contractor** may be paid the actual and necessary costs of such subcontracted **Work** as outlined above in Articles 11.7.1.1 through 11.7.1.8, and an additional overhead of 5% of the costs outlined in Articles 11.7.1.1 through 11.7.1.3.

11.7.3 Non-Recoverable Costs. The parties agree that the **City** will have no liability for the following items and the **Contractor** agrees it shall make no claim for the following items:

11.7.3.1 Profit, or loss of anticipated or unanticipated profit, except as provided in Article 11.7.1.9;
11.7.3.2 Consequential damages, including, but not limited to, construction or bridge loans or interest paid on such loans, loss of bonding capacity, bidding opportunities, or interest in investment, or any resulting insolvency;
11.7.3.3 Indirect costs or expenses of any nature except those included in Article 11.7.1;
11.7.3.4 Direct or indirect costs attributable to performance of **Work** where the **Contractor**, because of situations or conditions within its control, hasnot progressed the **Work** in a satisfactory manner; and
11.7.3.5 Attorneys' fees and dispute and claims preparation expenses.

11.8 Any claims for delay under this Article 11 are not subject to the jurisdiction of the Contract Dispute Resolution Board pursuant to the dispute resolution process set forth in Article 27.

11.9 Any compensation provided to the **Contractor** in accordance with this Article 11 will be made pursuant to a claim filed with the **Comptroller**. Nothing in this Article 11 extendsthe time for the **Contractor** to file an action with respect to a claim within six months after **Substantial Completion** pursuant to Article 56.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work**, **Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project**. In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** determines that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract**. If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this Article 12 (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to the **Contractor's** failure to comply with the **Engineer's** directions promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a subcontractor of such **Other Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other**

12.5 **Contractor** under the provision similar to the following provisions which apply to this Contract and have been or will be inserted in the contracts with such Other Contractors:

> 12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any action based upon such claim and if any judgment or claim (even if the allegations of the action are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this Article 13 and the **PPB**

Rules.

13.2 Any extension of time may be granted only by the **ACCO** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

13.3.1 By the acts or omissions of the **City**, its officials, agents or employees; or

13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or

13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).

13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **ACCO** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period ofdelay resulting from such act, fault or omission.

13.5 The determination made by the **ACCO** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The **ACCO** or the Board acting entirely within their discretion may grant an application for an extension of time for causes of delay other than those herein referred.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **ACCO** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **ACCO** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original total bid price;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **ACCO** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multipleof six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **ACCO** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **ACCO** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **ACCO**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency** contract file. Neither the report itself nor anything contained therein shall operate as a

waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the **City** Corporation Counsel, and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any **Other Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, except as provided for in Article 11.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth below have been met.

14.2.1 Inspection: The **Engineer** or **Resident Engineer**, as applicable, has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of **Final Approved Punch List** and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer/Resident Engineer** shall furnish the **Contractor** with a final punch list, specifying all items of **Work** to be completed and proposing dates for the completion of each specified item of **Work**. The **Contractor** shall then submit in writing to the **Engineer/Resident Engineer** within ten (10) **Days** of the **Engineer/Resident Engineer** furnishing the final punch list either acceptance of the dates or proposed alternative dates for the completion of each specified item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer/Resident Engineer** shall be deemed accepted. If the **Contractor** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer/Resident Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the **Engineer/Resident Engineer** shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Date of **Substantial Completion**. The date of approval of the **Final Approved Punch List**, shall be the date of **Substantial Completion**. The date of approval of the **Final Approved Punch List** shall be either (a) if the **Contractor** approves the final punch list and proposed dates for completion furnished by the **Engineer/Resident Engineer**, the date of the **Contractor**'s approval; or (b) if the **Contractor** neither accepts the dates nor proposes alternative dates, ten (10) **Days** after the **Engineer/Resident Engineer** furnishes the **Contractor** with a final punch list and proposed dates for completion; or (c) if the **Contractor** proposes alternative dates, the date that the **Engineer/Resident Engineer** sends written notification to the

Contractor either approving the **Contractor**'s proposed alternative dates or establishing dates for the completion for each item of **Work**.

14.4 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer**'s/**Resident Engineer**'s inspection if, upon such inspection, the **Engineer/Resident Engineer** finds that all items on the **Final Approved Punch List** are complete andno further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.5 Request for Inspection: Inspection of the **Work** by the **Engineer/Resident Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within fourteen (14) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer/Resident Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer/Resident Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **Engineer/Resident Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to substantially complete the **Work** within the time fixed for such **Substantial Completion** in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in substantially completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the **Substantial Completion** of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This Article 15 shall also apply to the **Contractor** whether or not the **Contractor** is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the **Specifications**, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** or **Resident Engineer**, as applicable, shall inspect the part of the**Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by Article 16. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work:**

16.1.1 the **Engineer/Resident Engineer** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV: SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No **Work** may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**; the portion of the **Work** and materials which it is to perform and furnish; the cost of the subcontract; the VENDEX questionnaire if required; the proposed subcontract if requested by the **Commissioner**; and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience, and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 In addition to the requirements in Article 17.2, **Contractor** is required to list the **Subcontractor** in the web based Subcontractor Reporting System through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip.[1]For each **Subcontractor** listed, **Contractor** is required to provide the following information: maximum contract value, description of **Subcontractor's** Work, start and end date of the subcontract and identification of the **Subcontractor**'s industry. Thereafter, **Contractor** will be required to report in the system the payments made to each **Subcontractor** within 30 days of making the

[1] In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at www.nyc.gov/pip. Additional assistance with PIP may be obtained by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

payment. If any of the required information changes throughout the Term of the **Contract**, **Contractor** will be required to revise the information in the system.

Failure of the **Contractor** to list a **Subcontractor** and/or to report **Subcontractor** payments in a timely fashion may result in the **Commissioner** declaring the **Contractor** in default of the **Contract** and will subject **Contractor** to liquidated damages in the amount of $100 per day for each day that the **Contractor** fails to identify a **Subcontractor** along with the required information about the **Subcontractor** and/or fails to report payments to a **Subcontractor**, beyond the time frames set forth herein or in the notice from the **City**. Article 15 shall govern the issue of liquidated damages.

17.4 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

17.5 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is approved. If the proposed **Subcontractor** is not approved, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted to enter or perform any work on the **Site** unless approved.

17.6 Before entering into any subcontract hereunder, the **Contractor** shall provide the proposed **Subcontractor** with a complete copy of this document and inform the proposed **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such **Subcontractor** shall expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract.**

17.7 Documents given to a prospective **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.8 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties, and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents, and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.9 If the **Subcontractor** fails to maintain the necessary facilities, skill, integrity, past experience, and financial resources (other than due to the **Contractor's** failure to make payments where required) to perform the **Work** in accordance with the terms and conditions of this **Contract**, the **Contractor** shall promptly notify the **Commissioner** and replace such **Subcontractor** with a newly approved **Subcontractor** in accordance with this Article 17.

17.10 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** maintain all insurance required by **Law**.

17.11 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.11.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractor** shall contain the same terms and conditions as to method of payment for **Work**, labor, and materials, and as to retained percentages, as are contained in this **Contract**.

17.11.2 Prevailing Rate of Wages: The agreement between the **Contractor** and its **Subcontractor** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.11.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and a **Subcontractor** in excess of fifty thousand ($50,000) dollars shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 *et seq*.).

17.11.4 All requirements required pursuant to federal and/or state grant agreement(s), if applicable to the **Work**.

17.12 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor**, or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally resolved.

17.13 On contracts where performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.14 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all **Work** performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, conveyance or other disposition of this **Contract** shall not be valid until filed in the office of the **Commissioner** and the **Comptroller**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment,

transfer, conveyance or other disposition, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V: CONTRACTOR'S SECURITY AND GUARANTEE

ARTICLE 19. SECURITY DEPOSIT

19.1 If performance and payment bonds are required, the **City** shall retain the bid security to ensure that the successful bidder executes the **Contract** and furnishes the required payment and performance security within ten (10) **Days** after notice of the award of the **Contract**. If the successful bidder fails to execute the **Contract** and furnish the required payment and performance security, the **City** shall retain such bid security as set forth in the Information for Bidders. If the successful bidder executes the **Contract** and furnishes the required payment and performance security, the **City** shall return the bid security within a reasonable time after the furnishing of such bonds and execution of the **Contract** by the **City**.

19.2 If performance and payment bonds are not required, the bid security shall be retained by the **City** as security for the **Contractor**'s faithful performance of the **Contract**. If partial payments are provided, the bid security will be returned to the **Contractor** after the sum retained under Article 21 equals the amount of the bid security, subject to other provisions of this **Contract**. If partial payments are not provided, the bid security will be released when final payment is certified by the **City** for payment.

19.3 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.3.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

19.3.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where one hundred (100%) percent performance bonds and payment bonds are executed, this Article 20 does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond or where the **Contract** does not require a payment bond for one hundred (100%) percent of the **Contract** price, the **City** shall, in accordance with the terms of this Article 20, guarantee payment of all lawful claims for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 If the **Contractor** provides a payment bond for a value that is less than one hundred (100%) percent of the value of the **Contract Work**, the payment bond provided by the **Contractor** shall be primary (and non-contributing) to the payment guarantee provided under this Article 20.

20.3.2 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of Article 20.3.4 and 20.3.5.

20.3.3 Nothing in this Article 20 shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.4 Every person who has furnished labor or material, to the **Contractor** or to a **Subcontractor** of the **Contractor**, in the prosecution of the **Work** and who has not been paid in full therefor before the expiration of a period of ninety (90) **Days** after the date on which the last of the labor was performed or material was furnished by him/her for which the claim is made, shall have the right to sue on this payment guarantee in his/her own name for the amount, or the balance thereof, unpaid at the time of commencement of the action; provided, however, that a person having a direct contractual relationship with a **Subcontractor** of the **Contractor** but no contractual relationship express or implied with the **Contractor** shall not have a right of action upon the guarantee unless he/she shall have given written notice to the **Contractor** within one hundred twenty (120) **Days** from the date on which the last of the labor was performed or the last of the material was furnished, for which his/her claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or for whom the labor was performed. The notice shall be served by delivering the same personally to the **Contractor** or by mailing the same by registered mail, postage prepaid, in an envelope addressed to the **Contractor** at any place where it maintains an office or conducts its business; provided, however, that where such notice is actually received by the **Contractor** by other means,such notice shall be deemed sufficient.

20.3.5 Except as provided in Labor Law Section 220-g, no action on this payment guarantee shall be commenced after the expiration of the one-year limitations period set forth in Section 137(4)(b) of the State Finance Law.

20.3.6 The **Contractor** shall promptly forward to the **City** any notice or demand received pursuant to Article 20.3.4. The **Contractor** shall inform the **City** of any defenses to the notice or demand and shall forward to the **City** any documents the **City** requests concerning the notice or demand.

20.3.7 All demands made against the **City** by a beneficiary of this payment guarantee shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems reasonably appropriate or necessary, which may include, but shall not be

limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.8 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.9 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorneys' fees, except to the extent required by State Finance Law Section 137.

20.3.10

20.4 Upon the receipt by the **City** of a demand pursuant to this Article 20, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) **Days** of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

20.4.2 In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.3 In the event the **City** determines that the demand is invalid, any amount withheld pending the **City**'s review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a claim or an action has been filed, the terms and conditions set forth in Article 23 shall apply. In the event a lien has been filed, the parties will be governed by the provisions of the Lien Law of the State of New York.

20.5 The provisions of this Article 20 shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this Article 20, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor's** performance.

20.7 Nothing in this Article 20 shall relieve the **Contractor** of the obligation to pay the claims of all

persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this Article 20 shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or its **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right to commence an action against the **City** on the payment guarantee provided by this Article 20 within the one-year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires one hundred (100%) percent performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded does not exceed one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded exceeds one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract,** the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: The **Contractor** shall procure and maintain the following types of insurance if, and as indicated, in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be maintained from the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer**), except for insurance required pursuant to Article 22.1.4, which may terminate upon **Substantial Completion** of the **Contract**. All insurance shall meet the requirements set forth in this Article 22. Wherever this Article requires that insurance coverage be "at least as broad" as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the **Contractor** can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide Commercial General Liability Insurance covering claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this insurance shall be at least as broad as that provided by the latest edition of Insurance

Services Office ("ISO") Form CG 0001. Such insurance shall be "occurrence" based rather than "claims-made" and include, without limitation, the following types of coverage: premises operations; products and completed operations; contractual liability (including the tort liability of another assumed in a contract); broad form property damage; independent contractors; explosion, collapse and underground (XCU); construction means and methods; and incidental malpractice. Such insurance shall contain a "per project" aggregate limit, as specified in Schedule A, that applies separately to operations under this **Contract**.

22.1.1(a) Such Commercial General Liability Insurance shall name the **City** as an Additional Insured. Coverage for the City shall specifically include the **City's** officials and employees, be at least as broad as the latest edition of ISO Form CG 20 10 and provide completed operations coverage at least as broad as the latest edition of ISO Form CG 20 37.

22.1.1(b) Such Commercial General Liability Insurance shall name all other entities designated as additional insureds in Schedule A but only for claims arising from the **Contractor's** operations under this **Contract**, with coverage at least as broad as the latest edition of ISO Form CG 20 26.

22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08 or greater limits required by the Agency in accordance with Schedule A. If the **Work** does not require such a permit, the minimum limits shall be those provided for in Schedule A.

22.1.1(d) If any of the **Work** includes repair of a waterborne vessel owned by or to be delivered to the **City**, such Commercial General Liability shall include, or be endorsed to include, Ship Repairer's Legal Liability Coverage to protect against, without limitation, liability arising from navigation of such vessels prior to delivery to and acceptance by the **City**.

22.1.2 Workers' Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance: The **Contractor** shall provide, and shall cause its **Subcontractors** to provide, Workers Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those employees, if any, for which the **Laws** require insurance only pursuant to Article 22.1.3).

22.1.3 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: If specified in Schedule A of the General Conditions or if required by **Law**, the **Contractor** shall provide insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.4 Builders Risk Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall provide Builders Risk Insurance on a completed value form for the total value of the **Work** through **Substantial Completion** of the **Work** in its entirety. Such insurance shall be provided on an All Risk basis and include coverage, without limitation, for windstorm (including named windstorm), storm surge, flood and earth movement. Unless waived by the **Commissioner**, it shall include coverage for ordinance and law, demolition and increased costs of construction, debris removal, pollutant clean up and removal, and expediting costs. Such insurance shall cover, without limitation, (a) all buildings and/or structures involved in the

Work, as well as temporary structures at the **Site**, and (b) any property that is intended to become a permanent part of such building or structure, whether such property is on the **Site**, in transit or in temporary storage. Policies shall name the **Contractor** as Named Insured and list the **City** as both an Additional Insuredand a Loss Payee as its interest may appear.

22.1.4(a) Policies of such insurance shall specify that, in the event a loss occurs at an occupied facility, occupancy of such facility is permitted without the consent of the issuing insurance company.

22.1.4(b) Such insurance may be provided through an Installation Floater, at the **Contractor's** option, if it otherwise conforms with the requirements of this Article 22.1.4.

22.1.5 Commercial Automobile Liability Insurance: The **Contractor** shall provide Commercial Automobile Liability Insurance for liability arising out of ownership, maintenance or use of any owned (if any), non-owned and hired vehicles to be used in connection with this **Contract**. Coverage shall be at least as broad as the latest edition of ISO Form CA0001. If vehicles are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.6 Contractors Pollution Liability Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work**to maintain, Contractors Pollution Liability Insurance covering bodily injury and property damage. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured and any other entity specified in Schedule A. Coverage shall include, without limitation, (a) loss of use of damaged property or of property that has not been physically injured, (b) transportation, and (c) non- owned disposal sites.

22.1.6(a) Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees and be at least as broad as provided to the **Contractor** for this **Project**.

22.1.6(b) If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the **Work** under this **Contract** is completed.

22.1.7 Marine Insurance:

22.1.7(a) Marine Protection and Indemnity Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the**Subcontractor** doing such Work to maintain, Marine Protection and Indemnity Insurance with coverage at least as broad as Form SP-23. The insurance shall provide coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured for bodily injury and property damage arising from marine operations under this

Contract. Coverage shall include, without limitation, injury or death of crew members (if not fully provided through other insurance), removal of wreck, damage to piers, wharves and other fixed or floating objects and loss of or damage to any other vessel or craft, or to property on such other vessel or craft.

22.1.7(b) Hull and Machinery Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Hull and Machinery Insurance with coverage for the **Contractor** or **Subcontractor** (whichever is doing this Work) and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the latest edition of American Institute Tug Form for all tugs used under this **Contract** and Collision Liability at least as broad as the latest edition of American Institute Hull Clauses.

22.1.7(c) Marine Pollution Liability Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Pollution Liability Insurance covering itself (or the Subcontractor doing such Work) as Named Insured and the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured. Coverage shall be at least as broad as that provided by the latest edition of Water Quality Insurance Syndicate Form and include, without limitation, liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources.

22.1.8 The **Contractor** shall provide such other types of insurance, at such minimum limits and with such conditions, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance Coverage and Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-/VII or a Standard and Poor's rating of at least A, unless prior written approval is obtained from the **City** Corporation Counsel.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the **City** Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess, and umbrella policies of that type of coverage.

22.2.5 The **Contractor** may satisfy its insurance obligations under this Article 22 through primary policies or a combination of primary and excess/umbrella policies, so long as all policies provide the scope of coverage required herein.

22.2.6 Policies of insurance provided pursuant to this Article 22 shall be primary and non-contributing to any insurance or self-insurance maintained by the **City**.

22.3 Proof of Insurance:

22.3.1 For all types of insurance required by Article 22.1 and Schedule A, except for insurance required by Articles 22.1.4 and 22.1.7, the **Contractor** shall file proof of insurance in accordance with this Article 22.3 within ten (10) **Days** of award. For insurance provided pursuant to Articles 22.1.4 and 22.1.7, proof shall be filed by a date specified by the **Commissioner** or ten (10) **Days** prior to the commencement of the portion of the **Work** covered by such policy, whichever is earlier.

22.3.2 For Workers' Compensation Insurance provided pursuant to Article 22.1.2, the **Contractor** shall submit one of the following forms: C-105.2 Certificate of Workers' Compensation Insurance; U-26.3 - State Insurance Fund Certificate of Workers' Compensation Insurance; Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. For Disability Benefits Insurance provided pursuant to Article 22.1.2, the Contractor shall submit DB-120.1 - Certificate Of Insurance Coverage Under The NYS Disability Benefits Law, Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. ACORD forms are not acceptable.

22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured thereunder; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number); and (e) the number assigned to the **Contract** by the **City**. All such Certificates of Insurance shall be accompanied by either a duly executed "Certification by Insurance Broker or Agent" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

22.3.4 Documentation confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such proofs of insurance shall comply with the requirements of Articles 22.3.2 and 22.3.3.

22.3.5 The **Contractor** shall be obligated to provide the **City** with a copy of any policy of insurance provided pursuant to this Article 22 upon the demand for such policy by the **Commissioner** or the **City** Corporation Counsel.

22.4 Operations of the **Contractor**:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the

Commissioner of a certificate does not excuse the **Contractor** from securing insurance consistent with all provisions of this Article 22 or of any liability arising from its failure todo so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the **Commissioner**, the **Contractor** shall leave all plant, materials, equipment, tools, and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.4.4 In the event the **Contractor** receives notice, from an insurance company or other person, that any insurance policy required under this Article 22 shall be cancelled or terminated (or has been cancelled or terminated) for any reason, the **Contractor** shall immediately forward a copy of such notice to both the **Commissioner** and the New York City Comptroller, attn: Office of Contract Administration, Municipal Building, One Centre Street, room 1005, New York, New York 10007. Notwithstanding the foregoing, the**Contractor** shall ensure that there is no interruption in any of the insurance coverage required under this Article 22.

22.4.5 Where notice of loss, damage, occurrence, accident, claim or suit is required under an insurance policy maintained in accordance with this Article 22, the **Contractor** shall notify in writing all insurance carriers that issued potentially responsive policies of any such event relating to any operations under this **Contract** (including notice to Commercial General Liability insurance carriers for events relating to the **Contractor**'s own employees) no later than 20 days after such event. For any policy where the **City** is an Additional Insured, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Insured as well as the Named Insured." Such notice shall also contain the following information: the number of the insurance policy, the name of the named insured, the date and location of the damage, occurrence, or accident, and the identity of the persons or things injured, damaged or lost. The **Contractor** shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

22.4.6 In the event of any loss, accident, claim, action, or other event that does or can give rise to a claim under any insurance policy required under this Article 22, the **Contractor** shall at all times fully cooperate with the **City** with regard to such potential or actual claim.

22.5 **Subcontractor** Insurance: In the event the **Contractor** requires any **Subcontractor** to procure insurance with regard to any operations under this **Contract** and requires such **Subcontractor** to name the **Contractor** as an **Additional Insured** thereunder, the **Contractor** shall ensure that the **Subcontractor** name the **City**, including its officials and employees, as an Additional Insured with coverage at least as broad as the most recent edition of ISO Form CG 20 26.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents

are to be sent to the **Commissioner's** address as provided elsewhere in this **Contract**.

22.7 Apart from damages or losses covered by insurance provided pursuant to Articles 22.1.2, 22.1.3, or 22.1.5, the **Contractor** waives all rights against the **City**, including its officials and employees, for any damages or losses that are covered under any insurance required under this Article 22 (whether or not such insurance is actually procured or claims are paid thereunder) or any other insurance applicableto the operations of the **Contractor** and/or its employees, agents, or **Subcontractors**.

22.8 In the event the **Contractor** utilizes a self-insurance program to satisfy any of the requirements of this Article 22, the **Contractor** shall ensure that any such self-insurance program provides the **City** with all rights that would be provided by traditional insurance under this Article 22, including but not limited to the defense and indemnification obligations that insurers are required to undertake in liability policies.

22.9 Materiality/Non-Waiver: The **Contractor's** failure to secure policies in complete conformity with this Article 22, or to give an insurance company timely notice of any sort required in this **Contract** or to do anything else required by this Article 22 shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.10 Pursuant to General Municipal Law Section 108, this **Contract** shall be void and of no effect unless **Contractor** maintains Workers' Compensation Insurance for the term of this **Contract** tothe extent required and in compliance with the New York State Workers' Compensation Law.

22.11 Other Remedies: Insurance coverage provided pursuant to this Article 22 or otherwise shall not relieve the **Contractor** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

(a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the **City**, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever);or

(b) An infringement of copyrights, patents or use of patented articles, tools, etc., asreferred to in Article 57; or

(c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract,**

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**,

or both, shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller** shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this Article 23, and return the balance, if any, without interest, to the **Contractor**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guaranty are provided for in Schedule A.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** byauthorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expirationof the guarantee period fixed in the **Specifications**. The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers of such equipment and materials or lessees of the

premises into which the equipment and materials have been installed.

CHAPTER VI: CHANGES, EXTRA WORK, AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Law** and this **Contract**. All such changes, modifications, and amendments will become a part of the **Contract**. **Work** so ordered shall be performed by the **Contractor**.

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included inthe original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant toa written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO**.

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1 For any unit price item, the **Contractor** will be paid at the unit price bid for any quantity up to one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule. If during the progress of the **Work**, the actual quantity of any unit price item required to complete the **Work** approaches the estimated quantity forthat item, and for any reason it appears that the actual quantity of any unit price item necessary to complete the **Work** will exceed the estimated quantity for that item by twenty- five (25%) percent, the **Contractor** shall immediately notify the **Engineer** of such anticipated overrun. The **Contractor** shall not be compensated for any quantity of a unit price item provided which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule without written authorization from the **Engineer**.

26.1.2 If the actual quantity of any unit price item necessary to complete the **Work** will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of the item on the

basis of time and material records for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 **Extra Work:** For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is based on time and material records in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below, calculated in accordance with the formula specified therein, if any.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned (or **Subcontractor**-owned, as applicable), necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: (.035) x (HP rating) x (Fuel cost/gallon). Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by Equipment Watch (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by Equipment Watch (the "Blue Book") (the applicable Blue Book rate being for rental only without the addition of any operational costs listed in the Blue Book). The reasonable rental value is deemed to be inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five (75%) percent of such rental rates; second shift shall be sixty (60%) percent of the first shift rate; and third shift shall be forty (40%) percent of the first shift rate. Equipment on standby shall be reimbursed at one-third (1/3) the prorated monthly rental rate. **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment includes equipment from rental companies affiliated with or controlled by the **Contractor** (or **Subcontractor**, as applicable)**,** as determined by the **Commissioner**. In establishing cost reimbursement for non-operating **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment (scaffolding, sheeting systems, road plates, etc.), the **City** may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Necessary fees charged by governmental entities; plus

26.2.7 Necessary construction-related service fees charged by non-governmental entities, such as landfill tipping fees; plus

26.2.8 Reasonable rental costs of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: (.035) x (HP rating) x (Fuel cost/gallon). In lieu of renting, the **City** reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.9 Workers' Compensation Insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of Workers' Compensation Insurance is subject to applicable payroll limitation caps and shall be based upon the carrier's Manual Rate for such insurance derived from the applicable class Loss Cost ("LC") and carrier's Lost Cost Multiplier ("LCM") approved by the New York State Department of Financial Services, and with the exception of experience rating, rate modifiers as promulgated by the New York Compensation Insurance Rating Board ("NYCIRB"); plus

26.2.10 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.11 Twelve percent (12%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than Workers' Compensation Insurance; plus

26.2.12 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus the items in Article 26.2.11, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.13 Five (5%) percent of the total of items in Articles 26.2.6 through 26.2.10 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work,** the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with Article 25.3.4, or for **Extra Work** ordered in connection with omitted **Work**, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over

the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this Article 27.1 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this Article 27 and the **PPB** Rules. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This Article 27 shall not apply to disputes concerning matters dealt with in other sections of the **PPB** Rules, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This Article 27 shall apply only to disputes about the scope of **Work** delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this Article 27 shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this Article 27 shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this Article 27, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** inthe dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner** Inquiry. The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any **Other Contractor** with a contract related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Other Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this Article 27 as the **Contractor** initiating the dispute.

27.4.2 **Commissioner** Determination. Within thirty (30) **Days** after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO,** and **Engineer**, **Resident Engineer**,**Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 Finality of **Commissioner's** Decision. The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this Article 27. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 Presentation of Dispute to the **Comptroller**. Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 Time, Form, and Content of Notice. Within thirty (30) **Days** of its receipt of a decision by the **Commissioner,** the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 Response. Within thirty (30) **Days** of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the **Comptroller** any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in Sections 7-201 and 7-203 of the Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) **Days** any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor**, **Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) **Days** from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) **Days** from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in this Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this Article 27 as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.2 The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.3 A person with appropriate expertise who is not an employee of the **City**. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the **City** or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the **City**.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this Article 27, the **Contractor**, within thirty (30) **Days** thereafter, may petition the Contract Dispute Resolution Board to review the

Commissioner's determination.

27.7.1 Form and Content of Petition by **Contractor**. The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner,** (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the **City** Corporation Counsel (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract Dispute Resolution Board at OATH's offices with proof of service on the **City** Corporation Counsel. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency** Response. Within thirty (30) **Days** of its receipt of the Petition by the **City** Corporation Counsel, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) Days.

27.7.3 Further Proceedings. The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the **City** Corporation Counsel, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 Contract Dispute Resolution Board Determination. Within forty-five (45) **Days** of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) **Days**, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the **City** Corporation Counsel, the CCPO, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The

Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this Article 27.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this Article 27 shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this Article 27.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON ATIME & MATERIALS BASIS

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Work** on a time and material basis or **Extra Work** on a time and material basis ordered by the **Commissioner** under Article 25, or where the **Contractor** believes that it or any of its **Subcontractors** is performing **Extra Work** but a final determination by **Agency** has not been made, or the **Contractor** or any of its **Subcontractors** is performing disputed **Work** (whether on or off the **Site**), or complying with a determination or order under protest in accordance with Articles 11, 27, and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name, trade, and number of each worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports, and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the

Comptroller to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have withrespect to such **Extra Work** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter to the extent additional damages are being incurred for the same condition, verified statements of the details and the amounts of such damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to strictly comply with

the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this Article 30. This Article 30.1 does not apply to claims submitted to the **Commissioner** pursuant to Article 11 or to claims disputing a determination under Article 27.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer**, **Architect** or **Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article 30, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days'** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article 30.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article 30 is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolutionprocedure.

CHAPTER VII: POWERS OF THE RESIDENT ENGINEER, THE ENGINEER ORARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise, and control the performance

of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing bythe **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings**, **Specifications**, and **Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of **Other Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction, and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issuean **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract** and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various contractors engaged on this **Project** pursuant to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, official, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Engineer**, the **Resident Engineer**, or any other official, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII: LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the Commissioner may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor Law"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its work force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work**.

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, all laborers, workers, and mechanics employed in the performance of the C**ontract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by the **Contract**, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

35.3 In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the Administrative Code, respectively,

35.3.1 The **Contractor** shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this **Contract** to (a) the Commissioner of the Department of Investigation, (b) a member of the New York City Council, the Public Advocate, or the **Comptroller**, or (c) the **CCPO**, **ACCO**, **Agency** head, or **Commissioner**.

35.3.2 If any of the **Contractor**'s officers or employees believes that he or she has been the subject of an adverse personnel action in violation of Article 35.3.1, he or she shall be entitled to bring a cause of action against the **Contractor** to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (a) an injunction to restrain continued retaliation, (b) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (c) reinstatement of full fringe benefits and seniority rights, (d) payment of two times back pay, plus interest, and (e) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

35.3.3 The **Contractor** shall post a notice provided by the **City** in a prominent and accessible place on any site where work pursuant to the **Contract** is performed that contains information about:

35.3.3(a) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising outof or in connection with the **Contract**; and

35.3.3(b) the rights and remedies afforded to its employees under Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection withthe

reporting of allegations of fraud, false claims, criminality or corruption in connection with the **Contract**.

35.3.4 For the purposes of this Article 35.3, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

35.3.5 This Article 35.3 is applicable to all of the **Contractor**'s **Subcontractors** having subcontracts with a value in excess of $100,000; accordingly, the **Contractor** shall include this rider in all subcontracts with a value a value in excess of $100,000.

35.4 Article 35.3 is not applicable to this **Contract** if it is valued at $100,000 or less. Articles 35.3.1, 35.3.2, 35.3.4, and 35.3.5 are not applicable to this **Contract** if it was solicited pursuant to a finding of an emergency.

35.5 Paid Sick Leave Law.

35.5.1 Introduction and General Provisions.

35.5.1(a) The Earned Sick Time Act, also known as the Paid Sick Leave Law ("PSLL"), requires covered employees who annually perform more than 80 hours of work in New York City to be provided with paid sick time[2]. Contractors of the **City** or of other governmental entities may be required to provide sick time pursuant to the PSLL.

35.5.1(b) The PSLL became effective on April 1, 2014, and is codified at Title 20, Chapter 8, of the New York City Administrative Code. It is administered by the City's Department of Consumer Affairs ("DCA"); DCA's rules promulgated under the PSLL are codified at Chapter 7 of Title 6 of the Rules of the City of New York ("Rules").

35.5.1(c) The **Contractor** agrees to comply in all respects with the PSLL and the Rules, and as amended, if applicable, in the performance of this **Contract**. The **Contractor** further acknowledges that such compliance is a material term of this **Contract** and that failure to comply with the PSLL in performance of this **Contract** may result in its termination.

35.5.1(d) The **Contractor** must notify the **Agency Chief Contracting Officer** of the **Agency** with whom it is contracting in writing within ten (10) days of receipt of a complaint (whether oral or written) regarding the PSLL involving the performance of this **Contract**. Additionally, the **Contractor** must cooperate with DCA's education efforts and must comply with DCA's subpoenas and other document demands as set forth in the PSLL and Rules.

35.5.1(e) The PSLL is summarized below for the convenience of the **Contractor**. The **Contractor** is advised to review the PSLL and Rules in their entirety. On the

[2] Pursuant to the PSLL, if fewer than five employees work for the same employer, as determined pursuant to New York City Administrative Code § 20-912(g), such employer has the option of providing such employees uncompensated sick time.

website www.nyc.gov/PaidSickLeave there are links to the PSLL and the associated Rules as well as additional resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the **Contractor** can get more information about how to comply with the PSLL. The **Contractor** acknowledges that it is responsible for compliance with the PSLL notwithstanding any inconsistent language contained herein.

35.5.2 Pursuant to the PSLL and the Rules: Applicability, Accrual, and Use.

35.5.2(a) An employee who works within the City of New York for more than eighty hours in any consecutive 12-month period designated by the employer as its "calendar year" pursuant to the PSLL ("Year") must be provided sick time. Employers must provide a minimum of one hour of sick time for every 30 hours worked by an employee and compensation for such sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage. Employers are not required to provide more than 40 hours of sick time to an employee in any Year.

35.5.2(b) An employee has the right to determine how much sick time he or she will use, provided that employers may set a reasonable minimum increment for the use of sick time not to exceed four hours per **Day**. In addition, an employee may carry over up to 40 hours of unused sick time to the following Year, provided that no employer is required to allow the use of more than forty hours of sick time in a Year or carry over unused paid sick time if the employee is paid for such unused sick time and the employer provides the employee with at least the legally required amount of paid sick time for such employee for the immediately subsequent Year on the first **Day** of such Year.

35.5.2(c) An employee entitled to sick time pursuant to the PSLL may use sick time for any of the following:

i. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;
ii. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild or grandparent, or the child or parent of an employee's spouse or domestic partner) who has a mental illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;
iii. closure of such employee's place of business by order of a public official due to a public health emergency; or
iv. such employee's need to care for a child whose school or childcare providerhas been closed due to a public health emergency.

35.5.2(d) An employer must not require an employee, as a condition of taking sick time, to search for a replacement. However, an employer may require an employee to provide: reasonable notice of the need to use sick time; reasonable documentation that the use of sick time was needed for a reason above if for an absence of more than three consecutive work days; and/or written confirmation that an employee used sick time pursuant to the PSLL. However, an employer may not require documentation specifying the nature of a medical condition or otherwise require disclosure of the details of a medical condition as a condition of providing sick time and health information obtained solely due to an employee's use of sick time pursuant to the PSLL must be treated by the

employer as confidential.

35.5.2(e) If an employer chooses to impose any permissible discretionary requirement as a condition of using sick time, it must provide to all employees a written policy containing those requirements, using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny sick time to an employee because of non-compliance with such a policy.

35.5.2(f) Sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the sick time was used.

35.5.3 Exemptions and Exceptions. Notwithstanding the above, the PSLL does not apply to any of the following:

35.5.3(a) an independent contractor who does not meet the definition of employee under section 190(2) of the New York State Labor Law;

35.5.3(b) an employee covered by a valid collective bargaining agreement in effect on April 1, 2014, until the termination of such agreement;

35.5.3(c) an employee in the construction or grocery industry covered by a valid collective bargaining agreement if the provisions of the PSLL are expressly waived in such collective bargaining agreement;

35.5.3(d) an employee covered by another valid collective bargaining agreement if such provisions are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the PSLL for such employee;

35.5.3(e) an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines his or her own schedule, has the ability to reject or accept any assignment referred to him or her, and is paid an average hourly wage that is at least four times the federal minimum wage;

35.5.3(f) an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

35.5.3(g) an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

35.5.3(h) a participant in a Work Experience Program (WEP) under section 336-c of the New York State Social Services Law.

35.5.4 Retaliation Prohibited. An employer may not threaten or engage in retaliation against an employee for exercising or attempting in good faith to exercise any right provided by the PSLL. In addition, an employer may not interfere with any investigation, proceeding, or hearing pursuant to the PSLL.

35.5.5 Notice of Rights.

35.5.5(a) An employer must provide its employees with written notice of their rights pursuant to the PSLL. Such notice must be in English and the primary language spoken

by an employee, provided that DCA has made available a translation into such language. Downloadable notices are available on DCA's website at http://www.nyc.gov/html/dca/html/law/PaidSickLeave.shtml.

35.5.5(b) Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed fifty dollars for each employee who was not given appropriate notice.

35.5.6 Records. An employer must retain records documenting its compliance with the PSLL for a period of at least three years, and must allow DCA to access such records in furtherance of an investigation related to an alleged violation of the PSLL.

35.5.7 Enforcement and Penalties.

35.5.7(a) Upon receiving a complaint alleging a violation of the PSLL, DCA has the right to investigate such complaint and attempt to resolve it through mediation. Within 30 **Days** of written notification of a complaint by DCA, or sooner in certain circumstances, the employer must provide DCA with a written response and such other information as DCA may request. If DCA believes that a violation of the PSLL has occurred, it has the right to issue a notice of violation to the employer.

35.5.7(b) DCA has the power to grant an employee or former employee all appropriate relief as set forth in New York City Administrative Code § 20-924(d). Such relief may include, among other remedies, treble damages for the wages that should have been paid, damages for unlawful retaliation, and damages and reinstatement for unlawful discharge. In addition, DCA may impose on an employer found to have violated the PSLL civil penalties not to exceed $500 for a first violation, $750 for a second violation within two years of the first violation, and
$1,000 for each succeeding violation within two years of the previous violation.

35.5.8 More Generous Polices and Other Legal Requirements. Nothing in the PSLL is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous sick time policy, or the obligation of an employer to comply with any contract,

collective bargaining agreement, employment benefit plan or other agreement providing more generous sick time. The PSLL provides minimum requirements pertaining to sick time and does not preempt, limit or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of sick leave or time, whether paid or unpaid, or that extends other protections to employees. The PSLL may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

35.6 HireNYC: Hiring and Reporting Requirements. This Article 35.6 applies to construction contracts of $1,000,000 or more. The **Contractor** shall comply with the requirements of Articles 35.6.1-35.6.5 for all non-trades jobs (e.g., for an administrative position arising out of **Work** ant located in New York City). The **Contractor** shall reasonably cooperate with SBS and the **City** on specific outreach events, including "Hire-on-the-Spot" events, for the hiring of trades workers in connection with the **Work**. If provided elsewhere in this **Contract**, this **Contract** is subject to a project labor agreement.

35.6.1 Enrollment. The **Contractor** shall enroll with the HireNYC system, found at www.nyc.gov/sbs, within thirty (30) days after the registration of this **Contract** pursuant to Section 328 of the New York City Charter. The **Contractor** shall provide information about the business, designate a primary contact and say whether it intends to hire for any entry

to mid-level job opportunities arising from this **Contract** and located in New York City, and, if so, the approximate start date of the first hire.

35.6.2 Job Posting Requirements.

35.6.2(a) Once enrolled in HireNYC, the **Contractor** agrees to update the HireNYC portal with all entry to mid-level job opportunities arising from this **Contract** and located in New York City, if any, which shall be defined as jobs requiring no more than an associate degree, as provided by the New York State Department of Labor (see Column F of https://labor.ny.gov/stats/2012-2022- NYS- Employment-Prospects.xls). The information to be updated includes the types of entry and mid-level positions made available from the work arising from the **Contract** and located in New York City, the number of positions, the anticipated schedule of initiating the hiring process for these positions, and the contact information for the **Contractor's** representative charged with overseeing hiring. The **Contractor** must update the HireNYC portal with any hiring needs arising from the contract and located in New York City, and the requirements of the jobs to be filled, no less than three weeks prior to the intended first day of employment for each new position, except with the permission of SBS, not to be unreasonably withheld, and must also update the HireNYC portal as set forth below.

35.6.2(b) After enrollment through HireNYC and submission of relevant information, SBS will work with the **Contractor** to develop a recruitment plan which will outline the candidate screening process, and will provide clear instructions as to when, where, and how interviews will take place. HireNYC will screen applicants based on employer requirements and refer applicants whom it believes are qualified to the **Contractor** for interviews. The **Contractor** must interview referred applicants whom it believes are qualified.

35.6.2(c) After completing an interview of a candidate referred by HireNYC, the **Contractor** must provide feedback via the portal within twenty (20) business days to indicate which candidates were interviewed and hired, if any. In addition, the **Contractor** shall provide the start date of new hires, and additional information reasonably related to such hires, within twenty (20) business days after the start date. In the event the **Contractor** does not have any job openings covered by this Rider in any given year, the **Contractor** shall be required to provide an annual update to HireNYC to that effect. For this purpose, the reporting year shall run from the date of the registration of the **Contract** pursuant to Charter section 328 and each anniversary date.

35.6.2(d) These requirements do not limit the **Contractor's** ability to assess the qualifications of prospective workers, and to make final hiring and retention decisions. No provision of this Article 35.6 shall be interpreted so as to require the **Contractor** to employ any particular worker.

35.6.2(e) In addition, the provisions of this Article 35.6 shall not apply to positions that the **Contractor** intends to fill with employees employed pursuant to the job retention provision of Section 22-505 of the Administrative Code of the City of New York. The **Contractor** shall not be required to report such openings with HireNYC. However, the **Contractor** shall enroll with the HireNYC system pursuant to Article 35.6.1, above, and, if such positions subsequently become open, then the remaining provisions of this Article 35.6 will apply.

35.6.3 Breach and Liquidated Damages. If the **Contractor** fails to comply with the termsof the **ContrSact** and this Article 35.6 (l) by not enrolling its business with HireNYC; (2) by not informing HireNYC, as required, of open positions; or (3) by failing to interview a qualified candidate, the **Agency** may assess liquidated damages in the amount of two- thousand five hundred dollars ($2,500) per breach. For all other events of noncompliance with the terms of this Article 35.6, the **Agency** may assess liquidated damages in the amount of five hundred dollars ($500) per breach. Furthermore, in the event the **Contractor** breaches the requirements of this Article 35.6 during the term of the **Contract**, the **City** may hold the **Contractor** in default of this **Contract**.

35.6.4 Audit Compliance. In addition to the auditing requirements set forth in other partsof the **Contract**, the **Contractor** shall permit SBS and the **City** to inspect any and all records concerning or relating to job openings or the hiring of individuals for work arising from the **Contract** and located in New York City. The **Contractor** shall permit an inspection within seven (7) business days of the request.

35.6.5 Other Reporting Requirements. The **Contractor** shall report to the **City**, on amonthly basis, all information reasonably requested by the **City** that is necessary for the **City** to comply with any reporting requirements imposed by **Law**, including any requirement that the **City** maintain a publicly accessible database. In addition, the **Contractor** agrees to comply with all reporting requirements imposed by **Law**, or as otherwise requested by the **City**.

35.6.6 Federal Hiring Requirements. If this **Contract** is federally funded (as indicated elsewhere in this Contract), the **Contractor** shall comply with all federal hiring requirements as may be set forth in this **Contract**, including, as applicable: (a) Section 3 of the HUD Act of 1968, which requires, to the greatest extent feasible, economic opportunities for 30 percent of new hires be given to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing and Executive Order 11246, which prohibits discrimination in employment due to race, color, religion,sex or national origin, and requires the implementation of goals for minority and female participation for work involving any construction trade.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualifiedand available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of **Work** under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty ($50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this

Contract; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this Article 36.

36.1.5 This Article 36 covers all construction, alteration and repair of any public building or public work occurring in the State of New York and the manufacture, sale, and distribution of materials, equipment, and supplies to the extent that such operations are performed within the State of New York pursuant to this **Contract**.

36.2 The **Contractor** specifically agrees, as required by Section 6-108 of the Administrative Code,as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repairof buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract**.

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this Article 36.2 shall, upon conviction thereof, be punished by a fine of not more than one hundred ($100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) ("E.O. 50"), as revised, and the rules and regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicantfor employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, ratesof pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner's race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status,

disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under E.O. 50 and the rules and regulations promulgated thereunder; and

36.3.5 Will furnish, before the award of the **Contract**, all information and reports, including an employment report, that are required by E.O. 50, the rules and regulations promulgated thereunder, and orders of the **City** Department of Business Services, Division of Labor Services (**DLS**) and will permit access to its books, records, and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

In addition to any actions taken under this **Contract**, failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in a **City Agency** declaring the **Contractor** to be non-responsible in future procurements. The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the AdministrativeCode, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title 8 of the Administrative Code; and

36.5.2 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as

amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers, and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and **Days** of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor Law Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by

the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary, and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this Article 37.3.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller,** where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s)**. The **Contractor** also agrees that, should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any **Work** done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated prevailing wage scale as provided in Labor Law section 220, as amended, or

37.4.1(b) The stipulated minimum hourly wage scale as provided in Labor Law section 220-d, as amended.

37.4.2 For any breach or violation of either working conditions (Article 37.3) or minimum wages (Article 37.2.6) provisions, the party responsible therefor shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any contracts with the **City** of such party responsible, or may be recovered in actions brought by the **City** Corporation Counsel in the name of the **City**, in addition to damages for any other breach of this **Contract**, for a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract**. In addition, the **Commissioner** shall have the right to cancel contracts and enter into other contracts for the completion of the original contract, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this Article 37.4 and Labor Law Section 220 may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law**.

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this Article 37.4 may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award

of a contract with the **City**, as well as any other sanctions provided for by **Law**.

37.4.4(b) Labor Law Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor Law and this Article 37.4, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public works projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor Law Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this Article 37.4 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages, and other stipulations contained in Sections 220 and 220-h of the Labor Law, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract**.

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At **Site**: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the **Project**, the Workers' Compensation **Law** Section 51 notice, all other notices required by **Law** to be posted at the **Site**, the **City** notice that this **Project** is a public works project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 Daily **Site** Sign-in Sheets: Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began work and the time the employee left

work, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the **Comptroller** upon application by the **Agency**. In the alternative, subject to the approval of the **CCPO**, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 Individual Employee Information Notices: Distribute a notice to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public works project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he orshe is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, such notice shall also include a statement that each worker, laborer or mechanic must be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. "Worker, laborer or mechanic" includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this Article 37.6.3, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3(a) The **Contractor** and each **Subcontractor** shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of wages for their particular job classification. Such notification shall be given to every worker, laborer, and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site** Laminated Identification Badges: The **Contractor** shall provide laminated identification badges which include a photograph of the worker's, laborer's or mechanic's face and indicate the worker's, laborer's or mechanic's name, trade, employer's name, and employment starting date (month/day/year). Further, the **Contractor** shall require as acondition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**. The **Commissioner** may grant a written waiver from the requirement that the laminated identification badge include a photograph if the **Contractor** demonstrates that the identity of an individual wearing a laminated identification badge can be easily verified by another method; and

37.6.5 Language Other Than English Used On **Site**: Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices described in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under this Article 37; and

37.6.6 Provision of Records: The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller,** such records as are required to be kept by this Article 37.6; and

37.6.7 The **Contractor** and **Subcontractor(s)** shall pay employees by check or direct deposit. If this **Contract** is for an amount greater than one million ($1,000,000) dollars, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than seven hundred fifty thousand ($750,000) dollars, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be usedif approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor Law. The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of this Article 37.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract.**

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage, and other provisions and stipulations required by Labor Law Section 220 and of compliance with the training requirements of Labor Law Section 220-h set forth in Article 35.2. This certification of compliance shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law from the award of the **Contract**.

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract**, and grounds for cancellation thereof by the **City**.

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** and its **Subcontractor(s)** shall maintain on the **Site** during the performanceof the **Work** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain and shall submit such original payrolls or transcripts, subscribed and affirmed by it as true, within thirty (30) **Days** after issuance of its first payroll, and every thirty (30) **Days** thereafter, pursuant to Labor Law Section 220(3-a)(a)(iii). The **Contractor** and **Subcontractor(s)** shall submit such original payrolls or transcripts along with each and every payment requisition. If payment requisitions are not submitted at least once a month, the **Contractor** and its **Subcontractor(s)** shall submit original payrolls and transcripts both along with its payment requisitions and independently of its payment requisitions.

38.2 The **Contractor** shall maintain payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**. If such payrolls and transcripts are maintained outside of New York City after the completion of the **Work** and their production is required pursuant to this Article 38, the **Contractor** shall produce such records in New York City upon request by the City.

38.3 The **Contractor** and **Subcontractor(s)** shall comply with any written order, direction, or request made by the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law**

Investigator(s), or the **Comptroller**, to provide to the requesting party any of the following information and/or records within five (5) **Days** of such written order, direction, or request:

38.3.1 Such original payrolls or transcripts thereof subscribed and affirmed by it as true and the statements signed by each worker pursuant to this Chapter VIII; and/or

38.3.2 Attendance sheets for each **Day** on which any employee of the **Contractor** and/or any of the **Subcontractor(s)** performed **Work** on the **Site**, which attendance sheet shall be in a form acceptable to the **Agency** and shall provide information acceptable to the **Agency** to identify each such employee; and/or

38.3.3 Any other information to satisfy the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)** or the **Comptroller**, that this Chapter VIII and the Labor Law, as to the hours of employment and prevailing rates of wages and/or supplemental benefits, are being observed.

38.4 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 38.1 and/or 38.2 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract**, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** voidable at the sole discretion of the **City**.

CHAPTER IX: PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices for which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once each calendar month (except where the **Commissioner** approves in writing the submission of invoices on a more frequent basis and for invoices relating to **Work** performed pursuant to a change order), the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures, and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor Law Section 220-a.

42.4 Within thirty (30) **Days** after receipt of a satisfactory payment application, and within sixty (60) **Days** after receipt of a satisfactory payment application in relation to **Work** performed pursuant to a change order, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the bid will be applicable to payments made under this **Contract**. The provisions require the payment to the **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share(s) of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s)**.

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract**.

43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) **Days** after receipt of payment by the **City** pursuant to this Article 43.5,

then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at the rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with Section 756-b (1)(b) of the New York General Business Law. Accrual of interest shall commence on the **Day** immediately following the expiration of the seventh **Day** following receipt of payment by the **Contractor** from the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or **Materialmen** for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

44.1 The **Contractor** shall submit with the **Substantial Completion** requisition:

44.1.1 A final verified statement of any pending Article 27 disputes in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.1.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 44.1.1(a) is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this Article 44, will have waived any such claims.

44.1.2 A **Final Approved Punch List**.

44.1.3 Where required, a request for an extension of time to achieve **Substantial Completion** or final extension of time.

44.2 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a partial and not a final payment. No **Substantial Completion** payment shall be made under this Article 44 where the **Contractor** failed to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.3 No further partial payments shall be made to the **Contractor** after **Substantial Completion**, except the **Substantial Completion** payment and payment pursuant to any **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.4 The **Contractor** acknowledges that nothing contained in this Article 44 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. Such submission shall be within 90 days of the date of the **Commissioner's** written determination of **Final Acceptance**, or within such additional time as may be granted by the **Commissioner** in writing. If the **Contractor** fails to submit all required certificates and documents within the time allowed, no payment of the balance claimed shall be made to the **Contractor** and the **Contractor** shall be deemed to have forfeited its right to payment of any balance claimed. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner**.

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any pending dispute resolution procedures in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 45.2, is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**. In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer**

thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor**.

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this Article 45 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any court, or otherwise, shall constitute and operate as a release of the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officials, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this Article 46, or those for amounts deducted by the **Commissioner** from the final requisition or from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any official, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred by this Article 46 from commencing an action for breach of **Contract** to the extent permitted by **Law** and by the terms of the **Contract** for any claims that are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45 or that arose after submission of the final payment requisition, provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the making of such final payment by electronic funds transfer (EFT)or the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs, and other sculptures, monuments, fountains, arches, and other structures of a permanent character intendedfor ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant

to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X: CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the progress schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the

Commissioner's opinion, attributable to conditions within the **Contractor's** control; orif

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made; or if

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB** Rules.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days**' notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare the **Contractor** in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a "Notice of Default").

49.2 The **Commissioner's** determination that the **Contractor** is in default shall be conclusive, final, and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence an action in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools, and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by contract with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor's** plant, materials, equipment, tools, and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other Contractor(s)** or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools, and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provisions of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to be completed in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List**. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The expense of completion permitted under Article 54.1, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by

the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

54.3 The previous provisions of this Chapter X shall be in addition to any and all other remedies available under **Law** or in equity.

54.4 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

CHAPTER XI: MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to performthe **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract**.

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any action, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any action be instituted or maintained on any such claims unless such action is commenced within six (6) months after **Substantial Completion**; except that:

56.2.1 Any claims arising out of events occurring after **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work**;

56.2.2 If the **Commissioner** exercises his/her right to complete or cause to complete any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List** pursuant to Article 54, any such action shall be commenced within six (6) months from the date the **Commissioner** notifies the **Contractor** in writing that he/she has exercised such right. Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be assertedwithin six (6) months after the date when such monies otherwise become due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such action shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall defend, indemnify, and hold the **City** harmless from any and all claims (even if the allegations of the lawsuit are without merit) and judgments for damages and from costs and expenses to which the **City** may be subject to or which it may suffer or incur allegedly arising out of or in connection with any infringement by the **Contractor** of any copyright, trade secrets, trademark or patent rights or any other property or personal right of any third party by the **Contractor** and/or its **Subcontractors** in the performance or completion of the **Work**. Insofar as the facts or **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent permitted by **Law**.

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any official, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract**.

ARTICLE 59. SERVICE OF NOTICES

59.1 The **Contractor** hereby designates the business address, fax number, and email address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Any notice, direction, or communication from either party to the other shall be in writing and shall be deemed to have been given when (i) delivered personally; (ii) sent by certified mail, return receipt requested; (iii) delivered by overnight or same day courier service in a properly addressed envelope with confirmation; or (iv) sent by fax or email and, unless receipt of the fax or e-mail is acknowledged by the recipient by fax or e-mail, deposited in a post office box regularly maintained by the United States Postal Service in a properly addressed, postage pre- paid envelope.

59.2 **Contractor's** notice address, email address, or fax number may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner**.

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, and local taxes, including sales and compensating use taxes of the State of New York and its cities and counties on all tangible personal property sold to the **City** pursuant to the provisions of this **Contract**. These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor**, **Subcontractor** or **Materialman** or to tangible personal property which, even though it is consumed, is not incorporated into the completed **Work** (consumable supplies) and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**. The **Contractor** and its **Subcontractors** and **Materialmen** shall be responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property and upon all such consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all tangible personal property, other than consumable supplies and other tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**, that is required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such tangible personal property shall be in full payment and consideration for the sale of such tangible personal property.

> 62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid forthe performance of such **Work**, labor, and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, and services, shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work,** labor, and services.

62.3 20 NYCRR Section 541.3(d) provides that a **Contractor**'s purchases of tangible personal property that is either incorporated into real property owned by a governmental entity or purchased for and sold to a governmental entity are exempt from sales and use tax. The **City** shall not pay sales tax for any such tangible personal property that it purchases from the **Contractor** pursuant to the **Contract.** With respect to such tangible personal property, the **Contractor**, at the request of the **City**, shall furnish to the **City** such bills of sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such tangible personal property, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such tangible personal property as the property of the **City**.

62.4 Title to all tangible personal property to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such tangible personal property to the **Site**. Notwithstanding such transfer of title, the **Contractor** shall

have the full and continuing responsibility to install such tangible personal property in accordance with the provisions of this **Contract**, protect it, maintain it in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional tangible personal property in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of the tangible personal property is rejected as being defective or otherwise unsatisfactory, title to all such tangible personal property shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** or **Materialmen** of tangible personal property to be sold hereunder shall be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid sales and compensating use taxes, provided that the subcontracts and purchase agreements provide for the resale of such tangible personal property and that such subcontracts and purchase agreements are in a form similar to this **Contract** with respect to the separation of the sale of consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work** from the **Work** and labor, services, and any other matters to be provided, and provided further that the subcontracts and purchase agreements provide separate prices for tangible personal property and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for tangible personal property from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and **Materialmen** shall furnish a **Contractor** Exempt Purchase Certificate to all persons, firms or corporations from which they purchase tangible personal property for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this Article 62 shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this Article 62 shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a **City** governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision or public authority thereof, or the Port Authority of NewYork and New Jersey, or any local development corporation within the **City**, or any public benefit corporation organized under the **Laws** of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a **City** or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interestin, and is

seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision thereof or any local development corporation within the **City**, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) **Days**' written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the **City** incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the **City**; and/or

63.6.2 The cancellation or termination of any and all such existing **City** contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this **Contract**, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the **City** incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the **City**.

63.7 The **Commissioner** shall consider and address in reaching his/her determination and inassessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The **Commissioner** may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party tothe hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility theperson has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the **City**.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity thathas a significant interest in an entity subject to penalties under Article 63.6, provided that the party

or entity has given actual notice to the **Commissioner** upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used in this Article 63 shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used in this Article 63 shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term "entity" as used in this Article 63 shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the **City** or otherwise transacts business with the **City**.

63.8.4 The term "member" as used in this Article 63 shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this **Contract**, the **Commissioner** may in his/her sole discretion terminate this **Contract** upon not less than three (3) **Days'** written notice in the event the **Contractor** fails to promptly report in writing to the **Commissioner** of the Department of Investigations ("DOI") of the **City** any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the **City** or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this **Contract** by the **Contractor**, or affecting the performance of this **Contract**.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this **Contract**, the **Commissioner** may, at any time, terminate this **Contract** by written notice to the **Contractor**. In the event of termination, the **Contractor** shall, upon receipt of such notice, unless otherwise directed by the **Commissioner**:

64.1.1 Stop **Work** on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the **City's** materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the **City** and deliver to the **Site** or another location designated by the **Commissioner**, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract** and not incorporated in the **Work**;

64.1.5 Take no action which will increase the amounts payable by the **City** under this
64.1.5 **Contract**.

64.2 In the event of termination by the **City** pursuant to this Article 64, payment to the **Contractor** shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum **Contracts**, or on lump sum items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this **Contract**. On lump sum **Contracts** only, the **City** will also pay the **Contractor** an additional sum as provided in Article 64.2.1(c).

64.2.1(a) For **Work** completed prior to the notice of termination, the **Contractor** shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the **Work**, as determined by the **Commissioner**. For the purpose of determining the pro rata portion of the lump sum bid amount to which the **Contractor** is entitled, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The **Commissioner's** determination hereunder shall be final, binding, and conclusive.

64.2.1(b) For non-cancelable material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of the following, less salvage value:

64.2.1(b)(i) The Direct Cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, if less than Direct Cost, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of the amount described in Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied tothe difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million ($5,000,000) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million ($5,000,000) dollars and fifteen million ($15,000,000) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million ($15,000,000) dollars.

64.2.1(d) In the event the **City** terminates a lump sum **Contract** pursuant to this Article 64 within ninety (90) **Days** after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this Article 64.2.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items ina

Contract, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment willbe made pursuant to Article 64.2.1(b).

64.2.3 Time and Materials Contracts or Items Based on Time and Material Records: On all **Contracts** or items in a **Contract** where payment for the **Work** is based on time and material records, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this Article 64.2 shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Costs shall not include overhead.

64.3 In no event shall any payments under this Article 64 exceed the **Contract** price for such items.

64.4 All payments pursuant to Article 64 shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this Article 64, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this Article 64 shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a change order will be issued to reflect an appropriate reduction in the **Contract** sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal court or in a New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in a New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in a Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a Federal Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a court located other than in the **City** and County of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a New York State Court of competent jurisdiction located in the **City** and County of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a New York State Court of competent jurisdiction in New York County.

65.3 If any provision(s) of this Article 65 is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions ofthe Federal Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce (Commerce Department) promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof for participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction contract shall be awarded unless and until these requirements have been complied with in their entirety; however, compliance with this Article 67 is not required if the Agency sets Subcontractor Participation Goals for Minority- and Women-Owned Business Enterprises (M/WBEs).

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the **City** Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprises (LBEs); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The **Contractor** shall not require performance and payment bonds from LBE **Subcontractors**.

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner**, which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work**.

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract**, and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBEs on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of this **Contract**. Remedy for such breach may include the imposition of any or all of the following sanctions:

67.6.1 Reducing the **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 If the **Contractor** is an LBE, de-certifying and declaring the **Contractor** ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells, and transfers to the **City** all right, title, and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract**.

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand ($10,000.) dollars, or for construction involving an amount greater than fifteen thousand ($15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or contraction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law**, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City** Charter.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City** Council shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in

Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling toand from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to asses, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative actionefforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in

accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the **City** Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code, and the Penal Law are applicable under the terms of this **Contract** in relation to conflicts of interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strictaccordance with the **Specifications** and **Addenda** thereto, numbered as shown in Schedule A.

ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR

75.1 The **City** will pay and the **Contractor** will accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum shown in Schedule A, this said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the Administrative Code, the **Contractor** agrees to accept payments under this **Contract** from the **City** by electronic funds transfer (EFT). An EFT is any transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this **Contract**, the **Contractor** shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of the **City** Department of Finance with information necessary for the **Contractor** to receive electronic funds transfer payments through a designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the **Contractor** shall constitute full satisfaction by the **City** for the amount of the payment under this **Contract**. The account information supplied by the **Contractor** to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by **Law**.

76.2 The **Commissioner** may waive the application of the requirements of this Article 76 to payments on contracts entered into pursuant to Section 315 of the **City** Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to which the **Agency** may waive the requirements of this Article 76 for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the **City**.

ARTICLE 77. RECORDS RETENTION

77.1 The **Contractor** agrees to retain all books, records, and other documents relevant to this **Contract** for six years after the final payment or termination of this **Contract**, whichever is later. **City**, state, and federal auditors and any other persons duly authorized by the **City** shall have full access to and the right to examine any such books, records, and other documents during the retention period.

ARTICLE 78. EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS

78.1 Pre-Bidding (Investigation) Viewing of Site – Bidders must carefully view and examine the **Site** of the proposed **Work**, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions and hazards on, about or above the **Site** relating to or affecting in any way the performance of the **Work** to be done under the **Contract** that were or should have been known by a reasonably prudent bidder. To arrange a date for visiting the **Site**,

bidders are to contact the **Agency** contact person specified in the bid documents.

78.2 Should the **Contractor** encounter during the progress of the Work site conditions or environmental hazards at the **Site** materially differing from any shown on the **Contract Drawings** or indicated in the **Specifications** or such conditions or environmental hazards as could not reasonablyhave been anticipated by the **Contractor**, which conditions or hazards will materially affect the cost of the **Work** to be done under the **Contract**, the attention of the **Commissioner** must be called immediately to such conditions or hazards before they are disturbed. The **Commissioner** shall thereupon promptly investigate the conditions or hazards. If the **Commissioner** finds that they do so materially differ, and that they could not have been reasonably anticipated by the **Contractor**, the **Contract** may be modified with the **Commissioner**'s written approval.

ARTICLE 79. PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

ARTICLE I. M/WBE PROGRAM

Section 6-129 of the Administrative Code of the City of New York ("Section 6-129") establishes the program for participation in City procurement ("M/WBE Program") by minority- owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6- 129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan") and are detailed below.

The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129.

References to MBEs or WBEs shall also include such businesses certified pursuant to the executive law where credit is required by section 311 of the New York City Charter or other provision of law.

Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts.

Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A: PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The MBE and/or WBE Participation Goals established for this Contract or Task Orders issued pursuant to this Contract, ("Participation Goals"), as applicable, are set forth on Schedule B, Part 1 to this Contract (see Page 1, Line 1 Total Participation Goals) or will be set forth on Schedule B, Part 1 to Task Orders issued pursuant to this Contract, as applicable.

The Participation Goals represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with DSBS as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If Participation Goals have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the Participation Goals, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If Participation Goals have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant Participation Goal, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant Participation Goal. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If Participation Goals have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part 2 (see Pages1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the Participation Goals, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE Participation Goals, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part 2 (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the Participation Goals that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed non- responsive.

(ii) Participation Goals on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If Participation Goals have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part 2 (see Pages 1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. The contractor must engage in good faith efforts to meet the Participation Goals as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART 2). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART 3). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an M/WBE Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multi- year contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work. In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the Participation Goals. Such certification must occur prior to the firms' commencement of work. A list of city-certified MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6451, or by visiting or writing DSBS at One Liberty Plaza ., New York, New York, 10006, 11th floor. Eligible firms that have not yet

been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an M/WBE Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to,: the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6- 129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's M/WBE Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its M/WBE Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an M/WBE Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or $500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the Participation Goals should be modified.

10. Pre-award waiver of the Participation Goals. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the Participation Goals in accordance with Section 6-129, which requests that Agency change one or more Participation Goals on the grounds that the Participation Goals are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the Participation Goals, a bidder, proposer, or contractor, as applicable, must complete Part 3 of Schedule B **and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing by email at MWBEModification@ddc.nyc.gov. Full or partial waiver requests that are received later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due may be rejected as untimely.** Bidders, proposers, or contractors, as applicable, who have submitted timely requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the Participation Goals are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the Participation Goals to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its M/WBE Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited

to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the Participation Goals. In making such determination, Agency may consider whether the M/WBE Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of M/WBE Utilization Plan. (a) A Contractor may request a modification of its M/WBE Utilization Plan after award of this Contract. PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below $3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission. The Agency may grant a request for Modification of a Contractor's M/WBE Utilization Plan if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the Participation Goals. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;
(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
(vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's M/WBE officer shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the Participation Goals when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its M/WBE Utilization Plan would be awarded to subcontractors.

12. If the Contractor was required to identify in its bid or proposal the MBEs and/or WBEs they intended to use in connection with the performance of the Contract or Task Order, substitutions to the identified firms may only be made with the approval of the Agency, which shall only be given when the Contractor has proposed to use a firm that would satisfy the Participation Goals to the same extent as the firm previously identified, unless the Agency determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts. In making such determination, the Agency shall require evidence of the

efforts listed in Section 11(a) above, as applicable, along with any other relevant factors.

13. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an M/WBE Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the Participation Goals, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

14. If Participation Goals have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its M/WBE Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

15. If Participation Goals have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B: MISCELLANEOUS

The Contractor shall take notice that, if this solicitation requires the establishment of a M/WBE Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the M/WBE Utilization Plan.

1. Pursuant to DSBS rules, construction contracts that include a requirement for a M/WBE Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

2. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

3. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

4. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required Participation Goals.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129

or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any M/WBE Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any M/WBE Utilization Plan, Agency may determine that one of the following actions should be taken:

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
(c) making a finding that the Contractor is in default of the Contract;
(d) terminating the Contract;
(e) declaring the Contractor to be in breach of Contract;
(f) withholding payment or reimbursement;
(g) determining not to renew the Contract;
(h) assessing actual and consequential damages;
(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
(k) taking any other appropriate remedy.

4. If an M/WBE Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its Participation Goals contained in its M/WBE Utilization Plan or the Participation Goals as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the Participation Goals and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor’s failure to meet the Participation Goals, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6- 129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its M/WBE Utilization Plan shall be a factor in the evaluation of

its performance. Whenever Agency determines that a Contractor's compliance with an M/WBE Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in PASSPort as caution data.

CONTRACT SIGNATURE PAGE

This Contract is entered by and between the City of New York ("City"), acting by and through the **DEPARTMENT OF DESIGN AND CONSTRUCTION**, and **MASPETH SUPPLY CO LLC** ("Contractor").

This Contract consists of this contract signature page as well as the following documents ("Contract Documents") which are located in the Documents tab of the PASSPort record titled **85023B0061-QED1059** .

1. **(Question answer) - Apprenticeship_FormLetter.pdf - Jun 8 2023 6:48PM**
2. **(Question answer) - EMR Letter 2022.pdf - Jun 8 2023 6:48PM**
3. **(Question answer) - Maspeth Supply OSHA 300 Forms - 19 to 21.pdf - Jun 8 2023 6:48PM**
4. **(Question answer) - QED-1059 Bid Bond.pdf - Jun 8 2023 6:48PM**
5. **(Question answer) - QED1059 Bid Schedule 4.18.23.xlsx - Jun 8 2023 6:48PM**
6. **(Question answer) - QED-1059_QUALIFICATION_FORM.docx - Jun 8 2023 6:48PM**
7. **(Question answer) - QED-1059_QUALIFICATION_FORM.pdf - Jun 8 2023 6:48PM**
8. **Bid Schedule - Jun 21 2023 1:51PM**
9. **DDC_PASSPORT_Bid_Information_2022-04-28 - Jun 8 2023 6:48PM**
10. **NOTICE TO BIDDERS-COVID19 R4 - Jun 8 2023 6:48PM**
11. **Proposal/Bid - Jun 8 2023 6:48PM**
12. **QED1059 - BID SCHEDULE - Jun 8 2023 6:48PM**
13. **QED1059 Addendum 1 - Jun 8 2023 6:48PM**
14. **QED1059 Addendum 2 - Jun 8 2023 6:48PM**
15. **QED1059 Addendum 3 - Jun 8 2023 6:48PM**
16. **QED-1059 Broker's Certification - Jun 20 2023 4:58PM**
17. **QED1059 CONTRACT DRAWINGS - Jun 8 2023 6:48PM**
18. **QED-1059 Disability Insurance - Jun 20 2023 4:58PM**
19. **QED-1059 Insurance Certificate - Jun 20 2023 4:59PM**
20. **QED1059 Planholder List (Add 3) - Jun 8 2023 6:48PM**
21. **QED1059 PLANHOLDER LIST Addendum1 - Jun 8 2023 6:48PM**
22. **QED-1059 Security - Bond - Jun 20 2023 5:00PM**
23. **QED1059 Volume 2 - Jun 8 2023 6:48PM**
24. **QED1059 Volume 3 Addendum1 - Jun 8 2023 6:48PM**
25. **QED-1059 Worker's Compensation - Jun 20 2023 5:01PM**
26. **RFx Document - Jun 8 2023 6:48PM**
27. **Round_Addendum_job_Aid - Jun 8 2023 6:48PM**
28. **Schedule B - Jun 21 2023 1:53PM**
29. **Schedule B - MWBE Utilization + Waiver Instructions July 2022 - Jun 8 2023 6:48PM**
30. **V1_Infra_Bid_Booklet - Jun 8 2023 6:48PM**

The above order does not represent an order of precedence. The Contract shall be governed by the order of precedence, if any, in the Contract Documents or by ordinary contract principles if no such order of precedence exists.

Each party is signing this Contract electronically on the date stated in that party's electronic signature.

The City of New York
By: **DEPARTMENT OF DESIGN AND CONSTRUCTION**

DocuSigned by:
ERIC MACFARLANE
1A87ABA0188B41C...
(Signature)

Name: ERIC MACFARLANE

Title: First Deputy Commissioner

Date: 6/28/2023 | 10:27:57 PDT

Contractor

By: **MASPETH SUPPLY CO LLC**

DocuSigned by:
Harvey Lyons
2BC383B1AA7C48D...

(Signature)

Name: Harvey Lyons

Title: Member

Date: 6/28/2023 | 07:45:19 PDT

Policy Number:

Date Entered:

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/13/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: SCOTT RODRIGUES	
Scott Rodrigues 8 Bartles Corner Rd Suite 23 Flemington, NJ 08822	PHONE (A/C, No, Ext): (908)751-5922	FAX (A/C, No): (866)619-5712
	E-MAIL ADDRESS: shannon@ff-nj.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : FARM FAMILY CASUALTY INSURANCE CO	13803
INSURED MASPETH SUPPLY CO, LLC 55-14 48TH STREET MASPETH, NY 11378	INSURER B : United Farm Family Insurance Company	29963
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR [X] Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:	X	X	3103L9307	6/3/2023	6/3/2024	EACH OCCURRENCE	$ 2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 2,000,000
							GENERAL AGGREGATE	$ 4,000,000
							PRODUCTS - COMP/OP AGG	$ 4,000,000
								$
B	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [X] HIRED AUTOS ONLY [X] SCHEDULED AUTOS [X] NON-OWNED AUTOS ONLY	X	X	3101C8704	6/3/2023	6/3/2024	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	[ ] UMBRELLA LIAB [X] OCCUR [X] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 10,000	X	X	3101E5144	6/3/2023	6/3/2024	EACH OCCURRENCE	$ 10,000,000
							AGGREGATE	$ 10,000,000
								$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		3104W7270	6/3/2023	6/3/2024	[X] PER STATUTE [ ] OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Project - QED1059

City of New York, including its officials and employees, Consolidated Edison, Verizon and National Grid are included as additional insured on General Liability, Umbrella and Auto Liability with coverage as broad as the most recent ISO forms CG 2010, CG 2037 on a Primary and Non-Contributory basis.

Waiver of Subrogation is included in favor of the additional insureds.

CERTIFICATE HOLDER

City of New York Department of Design and Construction
30-30 Thomson Avenue, 4th Floor
Long Island City, NY 11101

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

CITY OF NEW YORK

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker or agent represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

Scott Rodrigues
[Name of broker or agent (typewritten)]

8 Barltes Corner Rd, Suite 23, Flemington, NJ 08822
[Address of broker or agent (typewritten)]

scott@ff-nj.com
[Email address of broker or agent (typewritten)]

908-751-5922 / 866-619-5712
[Phone number/Fax number of broker or agent (typewritten)]

[Signature of authorized official, broker, or agent]

Scott Rodrigues - Captive Agent for American National
[Name and title of authorized official, broker, or agent (typewritten)]

REBECCA H YINGLING
Notary Public - State of New Jersey
My Commission Expires Sep 19, 2023

State of ..New Jersey.....)
) ss.:
County of ..Hunterdon.....)

Sworn to before me this 13th day of June 2023

Rebecca Yingling
NOTARY PUBLIC FOR THE STATE OF newjersey

Client#: 734069 MASPESUP1

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 6/13/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Yarden Bleicher	
USI Insurance Services - C/L 725 RXR Plaza East Tower 7th Floor Uniondale, NY 11556	PHONE (A/C, No, Ext): 516 419-4000	FAX (A/C, No): 877 727-5171
	E-MAIL ADDRESS: Yarden.Bleicher@USI.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : SiriusPoint Specialty Insurance Corp	16820
INSURED Maspeth Supply Co., LLC 55-14 48th Street Maspeth, NY 11378	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	☐ OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
	☐							$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐	N / A					E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$
A	Pollution Liab			CPPLS00023941	06/03/2023	06/03/2024	1,000,000 per Occ/Agg	
A	Professional Liab			CPPLS00023941	06/03/2023	06/03/2024	1,000,000 per Occ/Agg	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Project: QED1059 - Replacement of Distribution Water Mains in Various Locations, Etc - Borough of Queens

CERTIFICATE HOLDER

City of New York Department of
Design and Construction
30-30 Thomson Avenue, 4th Floor
Long Island City, NY 11101

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

YXBCW

Policy Number: 3104W7270

CERTIFICATE OF NYS WORKERS' COMPENSATION INSURANCE COVERAGE

1a. Legal Name & Address of Insured (use street address only) MASPETH SUPPLY CO, LLC 55-14 48th Street Maspeth, NY 11378 Work Location of Insured *(Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy)*	1b. Business Telephone Number of Insured 718-786-7000 1c. NYS Unemployment Insurance Employer Registration Number of Insured 45864849 1d. Federal Employer Identification Number of Insured or Social Security Number 11-3493939
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) City of New York Department of Design and Construction 30-30 Thomson Avenue, 4th Floor Long Island City, NY 11101	3a. Name of Insurance Carrier United Farm Family Insurance Company 3b. Policy Number of Entity Listed in Box "1a" 3104W7270 3c. Policy effective period 6/3/2023 to 6/3/2024 3d. The Proprietor, Partners or Executive Officers are ☒ included. (Only check box if all partners/officers included) ☐ all excluded or certain partners/officers excluded.

This certifies that the insurance carrier indicated above in box "3" insures the business referenced above in box "1a" for workers' compensation under the New York State Workers' Compensation Law. **(To use this form, New York (NY) must be listed under Item 3A on the INFORMATION PAGE of the workers' compensation insurance policy).** The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed above as the certificate holder in box "2".

The insurance carrier must notify the above certificate holder and the Workers' Compensation Board within 10 days IF a policy is canceled due to nonpayment of premiums or within 30 days IF there are reasons other than nonpayment of premiums that cancel the policy or eliminate the insured from the coverage indicated on this Certificate. (These notices may be sent by regular mail.) **Otherwise, this Certificate is valid for one year after this form is approved by the insurance carrier or its licensed agent, or until the policy expiration date listed in box "3c", whichever is earlier.**

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Workers' Compensation contract of insurance only while the underlying policy is in effect.

Please Note: Upon cancellation of the workers' compensation policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of Workers' Compensation Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Workers' Compensation Law.

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has the coverage as depicted on this form.

Approved by: Scott Rodrigues
(Print name of authorized representative or licensed agent of insurance carrier)

Approved by: Rodrigues 6/13/2023
(Signature) (Date)

Title: Captive Agent for Farm Family

Telephone Number of authorized representative or licensed agent of insurance carrier: 908-751-5922

Please Note: Only insurance carriers and their licensed agents are authorized to issue Form C-105.2. Insurance brokers are NOT authorized to issue it.

Workers' Compensation Law

Section 57. Restriction on issue of permits and the entering into contracts unless compensation is secured.

1. The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any compensation to any such employee if so employed.

2. The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter.

NEW YORK STATE | Workers' Compensation Board

CERTIFICATE OF INSURANCE COVERAGE
under the NYS DISABILITY AND PAID FAMILY LEAVE BENEFITS LAW

PART 1. To be completed by Disability and Paid Family Leave Benefits Carrier or Licensed Insurance Agent of that Carrier

1a. Legal Name & Address of Insured (use street address only)

MASPETH SUPPLY COMPANY LLC.
C/O JAY FUCHS
55-14 48TH STREET
MASPETH NY 11378

Work Location of Insured
(Only required if coverage is specifically limited to certain locations in New York State, i.e., Wrap-Up Policy)

1b. Business Telephone Number of Insured

718-786-7000

1c. Federal Employer Identification Number of Insured or Social Security Number

113493939

2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder)

City of New York Department of Design and Construction
30-30 Thomson Avenue, 4th Floor
Long Island City, NY 11101

3a Name of Insurance Carrier

HARTFORD LIFE AND ACCIDENT INSURANCE COMPANY

3b Policy Number of Entity Listed in Box "1a"

LNY-333114

3c Policy effective period

10/01/2022 to 09/30/2023

4. Policy provides the following benefits:

- [0] A. Both disability and paid family leave benefits.
- [ ] B. Disability benefits only.
- [ ] C. Paid family leave benefits only.

5. Policy covers:

- [0] A. All of the employer's employees eligible under the NYS Disability and Paid Family Leave Benefits Law
- [ ] B. Only the following class or classes of employer's employees:

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has NYS Disability and/(55-14 48TH STREET

Date Signed 08/22/2022 *Elizabeth Tello*

(Signature of insurance carrier's authorized representative or NYS Licensed Insurance Agent of that insurance carrier)

Telephone Number (212) 553-8074 Name and Title: Elizabeth Tello – Assistant Director, Statutory Services

IMPORTANT: If Boxes 4A and 5A are checked, and this form is signed by the insurance carrier's authorized representative or NYS Licensed Insurance Agent of that carrier, this certificate is COMPLETE. Mail it directly to the certificate holder.

If Box 4B, 4C or 5B is checked, this certificate is NOT COMPLETE for purposes of Section 220, Subd. 8 of the NYS Disability and Paid Family Leave Benefits Law. It must be mailed for completion to the Workers' Compensation Board, Plans Acceptance Unit, PO Box 5200, Binghamton, NY 13902-5200.

PART 2. To be completed by the NYS Workers' Compensation Board (Only if Box 4C or 5B of Part 1 has been checked)

State of New York
Workers' Compensation Board

According to information maintained by the NYS Workers' Compensation Board, the above-named employer has complied with the NYS Disability and Paid Family Leave Benefits Law with respect to all of his/her employees.

Date Signed By

(Signature of Authorized NYS Workers' Compensation Board Employee)

Telephone Number Name and Title

Please Note: Only insurance carriers licensed to write NYS disability and paid family leave benefits insurance policies and NYS licensed insurance agents of those insurance carriers are authorized to issue Form DB-120.1. Insurance brokers are NOT authorized to issue this form.

Additional Instructions for Form DB-120.1

By signing this form, the insurance carrier identified in Box 3 on this form is certifying that it is insuring the business referenced in box "1 a" for disability and/or paid family leave benefits under the New York State Disability and Paid Family Leave Benefits Law. The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed as the certificate holder in Box 2.

The insurance carrier must notify the above certificate holder and the Workers' Compensation Board within 10 days IF a policy is cancelled due to nonpayment of premiums or within 30 days IF there are reasons other than nonpayment of premiums that cancel the policy or eliminate the insured from coverage indicated on this Certificate. (These notices my be sent by regular mail.) Otherwise, this Certificate is valid for one year after this form is approved by the insurance carrier or its licensed agent, or until the policy expiration date listed in Box 3c, whichever is earlier

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Disability and/or Paid Family Leave Benefits contract of insurance only while the underlying policy is in effect.

Please Note: Upon the cancellation of the disability and/or paid family leave benefits policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of NYS Disability and/or Paid Family Leave Benefits Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Disability and Paid Family Leave Benefits Law.

DISABILITY AND PAID FAMILY LEAVE BENEFITS LAW

§220. Subd. 8

(a) The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in employment as defined in this article, and not withstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits and after January first, two thousand and twenty-one, the payment of family leave benefits for all employees has been secured as provided by this article. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any disability benefits to any such employee if so employed.

(b) The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in employment as defined in this article and notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits and after January first, two thousand eighteen, the payment of family leave benefits for all employees has been secured as provided by this article.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
CITY OF NEW YORK, INCLUDING ITS OFFICIALS AND EMPLOYEES, CONSOLIATED EDISON, VERIZON AND NATIONAL GRID	PROJECT #QED1059
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

POLICY NUMBER: 3103L9307

COMMERCIAL GENERAL LIABILITY
CG 20 37 07 04

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location And Description Of Completed Operations
CITY OF NEW YORK, INCLUDING ITS OFFICIALS AND EMPLOYEES, CONSOLIATED EDISON, VERIZON AND NATIONAL GRID	PROJECT #QED1059
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

Bond No. SU1150236

PERFORMANCE BOND #2

Performance Bond #2 (4 pages): Use if the total contract price is more than $5 Million.

PERFORMANCE BOND #2 (Page 1)

PERFORMANCE BOND #2KNOW ALL PERSONS BY THESE PRESENTS:,

That we, **Maspeth Supply Company LLC**

55-14 48th Street, Maspeth, NY 11378

hereinafter referred to as the "Principal,"
and, **Arch Insurance Company**

Harborside 3, Hudson Street, Suite 300, Jersey City, NJ 07311

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns in the penal sum of **Fourteen Million Seven Hundred Sixteen Thousand Six Hunded Thirty Seven 09/100 Dollars**

($ **14,716,637.09**) Dollars, lawful money of the United States for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for **QED1059, Replacement of distribution water mains in various locations, etc., Borough of Queens**

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth infull;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the Cityfrom all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

good any such default and shall protect the said City of New York against, and pay any and all amounts,damages, cost and judgments which may or shall be recovered against said City or its officers or agents orwhich the said City of New York may be called upon to pay any person or corporation by reason of anydamages arising or growing out of the Principal's default of the Contract, then this obligation shall be nulland void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the Citythat the City has determined that the Principal is in default of the Contract, to either (1) pay the full amount of the above penal sum in complete discharge and exoneration of this bond and of all the liabilities of the Surety relating to this bond, or (2) fully perform and complete the Work to be performed under theContract, pursuant to the terms, conditions, and covenants thereof. The Surety (Sureties) further agrees, at its option, either to tender the penal sum or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereoffrom the City and to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to commence and to complete all Work as provided herein.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected byany extension of time, modification, omission, addition, or change in or to the said Contract or the Workto be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any Work to be performed or any moneys due or to become due thereunder; and said Surety (Sureties) does herebywaive notice of any and all of such extensions, modifications, omissions, additions, changes, payments,waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any andall things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal.

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this

14th day of June 20 23.

(Seal)

Maspeth Supply Company LLC (L.S.)
Principal

(Seal)

By: _____

Surety
Arch Insurance Company

(Seal)

By: _____.
Raymond C. Carman, Attorney-In-Fact.
Surety

(Seal)

By: _____.
_____.
Surety

(Seal)

By: _____.
_____.
Surety

(Seal)

By: _____.
_____.
Surety

By: _____.

Bond Premium Rate Scale.

Bond Premium Cost $111,658.00.

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by aduly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the numberof counterparts of the Contract.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of_____County of_____ss:

On this_____day of_____, 20_____before me personally came_____,
to me known, who, being by me duly sworn did depose and say that he residesat __
_____ ; that he/she is the _____
of the corporation described in and which executed the foregoing instrument; that he/she signed his/her name to theforegoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of_____County of_____ss:

On this_____day of_____, 20_____before me personally came_____,
to me known, who, being by me duly sworn did depose and say that he/she residesat_____
_____; that he/she is_____partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument;and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of_____County of_____ss:

On this_____day of_____, 20_____before me personally came_____,
to me known, who, being by me duly sworn did depose and say that he/she residesat_____
_____, and that he/she is the individual whose name is subscribed to the within instrument and acknowledged to me that by his/her signature on the instrument, said individual executed the instrument.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

State of New York ss.
County of Queens

On this 16 day of June, 2023 before me personally appeared Harvey Lyons to me known who being by me duly sworn, did depose and say, that he/she resides in Nassau County, that he/she is the member of the Maspeth Supply Co, the Limited Liability Company described in and which executed the foregoing instrument: and that he/she authorized under the Articles of Organization and the Operating Agreement as amended and in effect this date to execute the forgoing instrument and so bind the Limited Liability Company.

Jay Warren Fuchs
Notary Public, residing at Nassau County, Long Island
Commission expires 2/24/26

JAY WARREN FUCHS
Notary Public, State of New York
No. 01FU4992547
Qualified in Nassau County
Commission Expires Feb. 24, 2026

Individual Acknowledgment

State of _____

County of_____

On this _____day of_____, 2022, before me personally came _____to me known, and known to me to be the individual in and who executed the foregoing instrument, and acknowledged to me that he/she executed the same.

My commission expires_____ _____
Notary Public

Corporation Acknowledgment

State of _____

County of _____

On the ___day of _____, 2022, before me personally came _____ to me known; who being by me duly sworn, did depose and say that he/she/they reside(s) _____ that he/she/they is (are) the _____ of the corporation described in and which executed the above instrument; that he/she/they know(s) the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of the board of directors of said corporation, and that he/she/they signed his/her/their name(s) thereto by like authority.

My Commission expires_____ _____
Notary Public

Surety Acknowledgment

State of New York

County of Nassau

On the 14th day of June, 2023 before me personally came Raymond C. Carman who, being by me duly sworn, did depose and say that he/she/they is an attorney in fact of **Arch Insurance Company** _____, the corporation described in and which executed the within instrument; that he/she/they know(s) the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he/she/they signed the said instrument and affixed the said seal as Attorney-in-fact by authority of the Board of Directors of said corporation and by authority of this office under the standing resolution thereof.

My commission expires _____ _____
Notary Public

THERESA A. LANFRANCO
Notary Public, State of New York
No. 01LA6110977
Qualified in Suffolk County
Certified in Nassau County
Commission Expires June 1, 2024

BONDING COMPANY REPRESENTATIVE CONTACT INFORMATION:

Name: Raymond C. Carman

Address: USI Insurance Services, 725 RXR Plaza, Uniondale, NY 11556

Telephone Number: 516-419-4023

Email Address: Raymond.carman@usi.com

ARCH INSURANCE COMPANY
STATEMENT OF FINANCIAL CONDITION
DECEMBER 31, 2022

Assets

Cash & Cash Equivalents in Banks	$164,221,743
Bonds owned	5,593,459,350
Stocks	661,945,887
Premiums in course of collection	759,892,858
Accrued interest and other assets	1,233,903,208
Total Assets	$ 8,413,423,046

Liabilities

Reserve for losses and adjustment expenses	$3,263,943,304
Reserve for unearned premiums	1,564,373,124
Ceded reinsurance premiums payable	408,386,710
Amounts withheld or retained by company for account of others	212,472,379
Reserve for taxes, expenses and other liabilities	983,651,831
Total Liabilities	$6,432,827,348
Surplus as regards policyholders	1,980,595,698
Total Surplus and Liabilities	$8,413,423,046

By: _____ Attest: _____

Executive Vice President, Chief Financial Officer and Treasurer

Executive Vice President, General Counsel and Secretary

State of New Jersey)
) SS
County of Hudson)

Thomas James Ahern, Executive Vice President, Chief Financial Officer and Treasurer and Regan Shulman, Executive Vice President, General Counsel and Secretary being duly sworn, of ARCH INSURANCE COMPANY, Missouri; and that the foregoing is a true and correct statement of financial condition of said company, as of December 31, 2022.

Subscribed and sworn to before me, this 14 day of March 2023

Notary Public _____

BRITTANY CONKLIN
Notary Public, State of New Jersey
Comm. # 50204279
My Commission Expires 11/07/2027

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Note, Loan, Letter of Credit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:
That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Dominick Scotto, Louis J. Spina, Raymond C. Carman, Tara Laverdiere and Theresa A. Lanfranco of Uniondale, NY (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed: Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding One Hundred Fifty Million Dollars ($150,000,000.00). This authority does not permit the same obligation to be split into two or more bonds In order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on August 31, 2022, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:
"**VOTED**, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on August 31, 2022:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on August 31, 2022, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company. **In Testimony Whereof**, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this **18th day of January, 2023**.

Attested and Certified

Regan A. Shulman, Secretary

Arch Insurance Company
CORPORATE SEAL 1977
Missouri

Arch Insurance Company

Stephen C. Ruschak, Executive Vice President

STATE OF PENNSYLVANIA SS
COUNTY OF PHILADELPHIA SS

I, **Michele Tripodi**, a Notary Public, do hereby certify that Regan A. Shulman and Stephen C. Ruschak personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

Commonwealth of Pennsylvania - Notary Seal
MICHELE TRIPODI, Notary Public
Philadelphia County
My Commission Expires July 31, 2025
Commission Number 1168622

Michele Tripodi, Notary Public
My commission expires 07/31/2025

CERTIFICATION
I, **Regan A. Shulman**, Secretary of the Arch Insurance Company, do hereby certify that the attached **Power of Attorney dated January 18, 2023** on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said Stephen C. Ruschak, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.
IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 14th **day of** June, **20** 23.

Regan A. Shulman, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:
Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Arch Insurance Company
CORPORATE SEAL 1977
Missouri

***To verify the authenticity of this Power of Attorney, please contact Arch Insurance Company at* SuretyAuthentic@archinsurance.com**
Please refer to the above named Attorney-in-Fact and the details of the bond to which the power is attached.

Bond No. SU1150236

PAYMENT BOND

Use for any contract for which a Payment Bond is required.

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

Maspeth Supply Company LLC

55-14 48th Street

Maspeth, NY 11378

hereinafter referred to as the "Principal", and _____

Arch Insurance Company

Harborside 3, Hudson Street, Suite 300, Jersey City, NJ 07311

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns, in the penal sum of

Fourteen Million Seven Hundred Sixteen Thousand Six Hundred Thirty Seven 09/100 Dollars

($ **14,716,637.09**) Dollars, lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

QED1059, Replacement of distribution water mains in various locations, etc., Borough of Queens

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom Work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for

(a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the Work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents servants or employees of the Principal or any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics at or in the vicinity of the site of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain infull force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies,as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the rightof the City to require a bond containing the foregoing provisions, and they do hereby further expressly waiveany defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

And the Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties), and its bonds shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or of the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any part thereof, or of any Work to be performed, or any moneys due to become due thereunder and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, Subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done or in relation to said Principal.

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their handsand seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this 14th day of June, 2023.

(Seal)

Maspeth Supply Company LLC (L.S.) Principal

By: _____

(Seal)

Arch Insurance Company Surety

By: _____

Raymond C. Carman, Attorney-In-Fact

(Seal)

_____ Surety

By: _____

(Seal)

_____ Surety

By: _____

(Seal)

_____ Surety

By: _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by aduly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the numberof counterparts of the Contract.

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of_____County of_____ss:

On this _____ day of_____,_____, before me personally came _____ to me known, who, being by me duly sworn did depose and say that he resides at _____ _____ that he is the_____of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of_____County of_____ss:

On this_____day of_____,_____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of_____County of_____ss:

On this _____ day of_____,_____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

_____
Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bondis executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

State of New York ss.
County of Queens

On this 16 day of June, 2023 before me personally appeared HARVEY Lyons to me known who being by me duly sworn, did depose and say, that he/~~she~~ resides in Nassau County, that he/~~she~~ is the member of the Maspeth Supply Co, the Limited Liability Company described in and which executed the foregoing instrument: and that he/she authorized under the Articles of Organization and the Operating Agreement as amended and in effect this date to execute the forgoing instrument and so bind the Limited Liability Company.

Jay Warren Fuchs
Notary Public, residing at Nassau County, Long Island
Commission expires 2/24/26

JAY WARREN FUCHS
Notary Public, State of New York
No. 01FU4992547
Qualified in Nassau County
Commission Expires Feb. 24, 2026

Individual Acknowledgment

State of _____

County of_____

On this _____day of_____, _2022_, before me personally came _____to me known, and known to me to be the individual in and who executed the foregoing instrument, and acknowledged to me that he/she executed the same.

My commission expires_____ _____

Notary Public

Corporation Acknowledgment

State of _____

County of _____

On the ___day of _____, 2022, before me personally came _____ to me known; who being by me duly sworn, did depose and say that he/she/they reside(s) _____ that he/she/they is (are) the _____ of the corporation described in and which executed the above instrument; that he/she/they know(s) the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of the board of directors of said corporation, and that he/she/they signed his/her/their name(s) thereto by like authority.

My Commission expires_____ _____

Notary Public

Surety Acknowledgment

State of New York

County of Nassau

On the **14th** day of **June , 2023** before me personally came **Raymond C. Carman** who, being by me duly sworn, did depose and say that he/she/they is an attorney in fact of **Arch Insurance Company** _____, the corporation described in and which executed the within instrument; that he/she/they know(s) the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he/she/they signed the said instrument and affixed the said seal as Attorney-in-fact by authority of the Board of Directors of said corporation and by authority of this office under the standing resolution thereof.

My commission expires _____ _____

Notary Public

THERESA A. LANFRANCO
Notary Public, State of New York
No. 01LA6110977
Qualified in Suffolk County
Certified in Nassau County
Commission Expires June 1, 2024

BONDING COMPANY REPRESENTATIVE CONTACT INFORMATION:

Name: Raymond C. Carman

Address: USI Insurance Services, 725 RXR Plaza, Uniondale, NY 11556

Telephone Number: 516-419-4023

Email Address: Raymond.carman@usi.com

ARCH INSURANCE COMPANY
STATEMENT OF FINANCIAL CONDITION
DECEMBER 31, 2022

Assets

Cash & Cash Equivalents in Banks	$164,221,743
Bonds owned	5,593,459,350
Stocks	661,945,887
Premiums in course of collection	759,892,858
Accrued interest and other assets	1,233,903,208
Total Assets	$ 8,413,423,046

Liabilities

Reserve for losses and adjustment expenses	$3,263,943,304
Reserve for unearned premiums	1,564,373,124
Ceded reinsurance premiums payable	408,386,710
Amounts withheld or retained by company for account of others	212,472,379
Reserve for taxes, expenses and other liabilities	983,651,831
Total Liabilities	$6,432,827,348
Surplus as regards policyholders	1,980,595,698
Total Surplus and Liabilities	$8,413,423,046

By: _____ Attest: _____

Executive Vice President, Chief Financial Officer and Treasurer

Executive Vice President, General Counsel and Secretary

State of New Jersey)
) SS
County of Hudson)

Thomas James Ahern, Executive Vice President, Chief Financial Officer and Treasurer and Regan Shulman, Executive Vice President, General Counsel and Secretary being duly sworn, of ARCH INSURANCE COMPANY, Missouri; and that the foregoing is a true and correct statement of financial condition of said company, as of December 31, 2022.

Subscribed and sworn to before me, this 14 day of March 2023

Notary Public _____

BRITTANY CONKLIN
Notary Public, State of New Jersey
Comm. # 50204279
My Commission Expires 11/07/2027

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Note, Loan, Letter of Credit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:
That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Dominick Scotto, Louis J. Spina, Raymond C. Carman, Tara Laverdiere and Theresa A. Lanfranco of Uniondale, NY (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed: Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding One Hundred Fifty Million Dollars ($150,000,000.00). This authority does not permit the same obligation to be split into two or more bonds In order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on August 31, 2022, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:
"**VOTED**, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on August 31, 2022:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on August 31, 2022, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company. **In Testimony Whereof**, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this **18th day of January, 2023**.

Attested and Certified

Regan A. Shulman, Secretary

Arch Insurance Company
CORPORATE SEAL 1971
Missouri

Arch Insurance Company

Stephen C. Ruschak, Executive Vice President

STATE OF PENNSYLVANIA SS
COUNTY OF PHILADELPHIA SS

I, **Michele Tripodi**, a Notary Public, do hereby certify that Regan A. Shulman and Stephen C. Ruschak personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

Commonwealth of Pennsylvania - Notary Seal
MICHELE TRIPODI, Notary Public
Philadelphia County
My Commission Expires July 31, 2025
Commission Number 1168622

Michele Tripodi, Notary Public
My commission expires 07/31/2025

CERTIFICATION

I, **Regan A. Shulman**, Secretary of the Arch Insurance Company, do hereby certify that the attached **Power of Attorney dated January 18, 2023** on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said Stephen C. Ruschak, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 14th **day of** June, **20** 23.

Regan A. Shulman, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:
Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102

Arch Insurance Company
CORPORATE SEAL 1971
Missouri

To verify the authenticity of this Power of Attorney, please contact Arch Insurance Company at **SuretyAuthentic@archinsurance.com**
Please refer to the above named Attorney-in-Fact and the details of the bond to which the power is attached.

LABOR LAW ARTICLE 8 - NYC PUBLIC WORKS

Workers, Laborers and Mechanics employed on a public work project must receive not less than the prevailing rate of wage and benefits for the classification of work performed by each upon such public work. Pursuant to New York Labor Law Article 8 the Comptroller of the City of New York has promulgated this schedule solely for Workers, Laborers and Mechanics engaged by private contractors on New York City public work projects. Prevailing rates are required to be annexed to and form part of the public work contract pursuant to Labor Law section 220 (3).

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to Labor Law section 220 (5). The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

Agency Chief Contracting Officers should contact the Bureau of Labor Law's Classification Unit with any questions concerning trade classifications, prevailing rates or prevailing practices with respect to procurement on New York City public work contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public work contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public work contracts in the procurement stage must contact the contracting agency responsible for the procurement.

Any error as to compensation under the prevailing wage law or other information as to trade classification, made by the contracting agency in the contract documents or in any other communication, will not preclude a finding against the contractor of prevailing wage violation.

Any questions concerning trade classifications, prevailing rates or prevailing practices on New York City public work contracts that have already been awarded may be directed to the Bureau of Labor Law's Classification Unit by calling (212) 669-4443. All callers must have the agency name and contract registration number available when calling with questions on public work contracts. Please direct all other compliance issues to: laborlaw@comptroller.nyc.gov or Bureau of Labor Law, Attn: Paul Brumlik, Office of the Comptroller, 1 Centre Street, Room 651, New York, N.Y. 10007.

Pursuant to Labor Law § 220 (3-a) (a), the appropriate schedule of prevailing wages and benefits must be posted in a prominent and accessible place at all public work sites along with the Construction Poster provided on our web site at comptroller.nyc.gov/wages. In addition, covered employees must be given the appropriate schedule of prevailing wages and benefits along with the Worker Notice provided on our web site at the time the public work project begins, and with the first paycheck to each such employee after July first of each year.

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site comptroller.nyc.gov/wages. Contractors must pay the wages and supplements in effect when the worker, laborer, mechanic performs the work. Preliminary schedules for future one-year periods appear in the City Record on or about June 1 each succeeding year. Final schedules appear on or about July 1 in the City Record and on our web site comptroller.nyc.gov/wages.

Prevailing rates and ratios for apprentices are published in the Construction Apprentice Prevailing Wage Schedule. Pursuant to Labor Law § 220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant, registered with the

New York State Department of Labor, may be paid at the apprentice rates. Apprentices who are not so registered must be paid as journey persons.

New York City public work projects awarded pursuant to a Project Labor Agreement ("PLA") in accordance with Labor Law section 222 may have different labor standards for shift, premium and overtime work. Please refer to the PLA's pre-negotiated labor agreements for wage and benefit rates applicable to work performed outside of the regular workday. More information is available at the Mayor's Office of Contract Services (MOCS) web page at:

https://www1.nyc.gov/site/mocs/legal-forms/project-labor-agreements.page

All the provisions of Labor Law Article 8 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller in accordance with the trade classifications in this schedule; however, we will enforce shift, premium, overtime and other non-standard rates as they appear in a project's pre-negotiated labor agreement.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

1) **Provide bona fide fringe benefits which cost the employer no less than the prevailing supplemental benefits rate; or**
2) **Supplement the employee's hourly wage by an amount no less than the prevailing supplemental benefits rate; or**
3) **Provide a combination of bona fide fringe benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.**

Although prevailing wage laws do not require employers to provide bona fide fringe benefits (as opposed to wage supplements) to their employees, other laws may. For example, the Employee Retirement Income Security Act, 29 U.S.C. § 1001 et seq., the Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 et seq., and the New York City Paid Sick Leave Law, N.Y.C. Admin. Code § 20-911 et seq., require certain employers to provide certain benefits to their employees. Labor agreements to which employers are a party may also require certain benefits. The Comptroller's Office does not enforce these laws or agreements.

Employers must provide prevailing supplemental benefits at the straight time rate for each hour worked unless otherwise noted in the classification.

Paid Holidays, Vacation and Sick Leave when listed must be paid or provided in addition to the prevailing hourly supplemental benefit rate.

For more information, please refer to the Comptroller's Prevailing Wage Law Regulations in Title 44 of the Rules of the City of New York, Chapter 2, available at comptroller.nyc.gov/wages.

Paul Brumlik
Director of Classifications
Bureau of Labor Law

TABLE OF CONTENTS

ASBESTOS HANDLER
SEE HAZARDOUS MATERIAL HANDLER

BLASTER

Blaster

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.21
Supplemental Benefit Rate per Hour: $50.43

Blaster - Hydraulic Trac Drill

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $51.35
Supplemental Benefit Rate per Hour: $50.43

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $50.02
Supplemental Benefit Rate per Hour: $50.43

Blaster - Journeyperson

(Laborer, Chipper/Jackhammer including Walk Behind Self Propelled Hydraulic Asphalt and Concrete Breakers and Hydro (Water) Demolition, Powder Carrier, Hydraulic Chuck Tender, Chuck Tender and Nipper)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.00
Supplemental Benefit Rate per Hour: $50.43

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.00
Supplemental Benefit Rate per Hour: $50.43

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Labor Day
Thanksgiving Day

Shift Rates
When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

BOILERMAKER

Boilermaker

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $64.38
Supplemental Benefit Rate per Hour: $47.35
Supplemental Note: For time and one half overtime - $70.58 For double overtime - $93.80

Overtime Description
For Repair and Maintenance work:
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
For New Construction work:
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day

Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Quadruple time the regular rate for work on the following holiday(s).
Labor Day

Paid Holidays
Good Friday
Day after Thanksgiving
Day before Christmas
Day before New Year's Day

Shift Rates
On jobs requiring two (2) or three (3) shifts, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work eight (8) hours and receive eight hours at the regular straight time hourly rate plus two dollars ($2.00) per hour. The third shift shall work eight (8) hours and receive eight hours at the regular straight time hourly rate plus two dollars and twenty-five cents ($2.25) per hour.

(Local #5)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.23
Supplemental Benefit Rate per Hour: $37.75

Overtime Description
Time and one half the regular rate after a 7 hour day. If working on a job that is predominately Pointer, Cleaner, Caulker work, then Time and one half the regular rate after an 8 hour day.

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day

Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
The second shift wage rate shall be a 15% wage premium with no premium for supplemental benefits. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, eight hours will be paid at straight time rate for seven hours of work.

(Bricklayer District Council)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $55.05
Supplemental Benefit Rate per Hour: $47.83

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

CARPENTER - HEAVY CONSTRUCTION WORK

(Construction of Engineered Structures and Building Foundations including all form work)

Heavy Construction Work

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.16
Supplemental Benefit Rate per Hour: $54.26

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate and the supplemental benefits shall be paid at the straight time rate. When two (2) or more shifts of Carpenters are employed, single time will be paid for each shift.

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS
(Excludes Engineered Structures and Building Foundations)

Carpenter High Rise A

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $50.78
Supplemental Benefit Rate per Hour: $44.44

Carpenter High Rise B

Carpenter High Rise B worker is excluded from high risk operations such as erection decking, perimeter debris netting, leading edge work, self-climbing form systems, and the installation of cocoon systems unless directly supervised by a Carpenter High Rise A worker.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $40.19
Supplemental Benefit Rate per Hour: $17.75

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

The second shift wage rate shall be 113% of the straight time hourly wage rate. However, any shift beginning after 5:00 P.M. shall be paid at time and one half the regular hourly rate. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST

Carpenter - Hod Hoist

(Assisted by Mason Tender)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $53.00
Supplemental Benefit Rate per Hour: $47.65

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

The second shift will receive 112% of the straight time hourly rate. Benefit fund contributions shall be paid at the straight time rate. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

CARPENTER - WOOD WATER STORAGE TANK

Tank Mechanic

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $36.42
Supplemental Benefit Rate per Hour: $23.10

Tank Helper

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $28.76
Supplemental Benefit Rate per Hour: $23.10

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Day after Thanksgiving
1/2 day on Christmas Eve if work is performed in the A.M.
Christmas Day
1/2 day on New Year's Eve if work is performed in the A.M.

Vacation

Employed for one (1) year.....one (1) week vacation (40 hours)
Employed for three (3) years.....two (2) weeks vacation (80 hours)
Employed for more than twenty (20) years.....three (3) weeks vacation (120 hours)

SICK LEAVE:
Two (2) sick days after being employed for twenty (20) years.

(Carpenters District Council)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.28
Supplemental Benefit Rate per Hour: $30.20
Supplemental Note: $34.20 on Saturdays; $38.20 on Sundays & Holidays

Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $35.80
Supplemental Benefit Rate per Hour: $22.20
Supplemental Note: $24.20 on Saturdays; $26.20 on Sundays & Holidays

Overtime Description
Time and one half the regular rate after 7 hour day (time and one half the regular rate after an 8 hour day when working with Dockbuilders on pile cap forms and for work below street level to the top of the foundation wall, not to exceed 2 feet or 3 feet above the sidewalk-brick shelf, when working on the foundation and structure.)

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day before Christmas Day
1/2 day before New Year's Day

Shift Rates
On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement & Concrete Workers District Council 16)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.77
Supplemental Benefit Rate per Hour: $41.01
Supplemental Note: Supplemental benefit time and one half rate: $71.97; Double time rate: double the base supplemental benefit rate.

Overtime Description
Time and one-half the regular rate after an 8 hour day, double time the regular rate after 10 hours. Time and one-half the regular rate on Saturday, double time the regular rate after 10 hours. Double time the regular rate on Sunday. Four Days a week at Ten (10) hours straight time is allowed.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

Shift Rates
For off shift work, (at times other than the regular 7:00 A.M. to 3:30 P.M. work day) a cement mason shall be paid at the regular hourly rate plus a 25% per hour differential.

(Local #780) (BCA)

CORE DRILLER

Core Driller

Effective Period: 7/1/2022 - 10/17/2022
Wage Rate per Hour: $42.54
Supplemental Benefit Rate per Hour: $30.60

Effective Period: 10/18/2022 - 6/30/2023
Wage Rate per Hour: $43.88
Supplemental Benefit Rate per Hour: $31.35

Core Driller Helper

Effective Period: 7/1/2022 - 10/17/2022
Wage Rate per Hour: $33.47
Supplemental Benefit Rate per Hour: $30.60

Effective Period: 10/18/2022 - 6/30/2023
Wage Rate per Hour: $34.47
Supplemental Benefit Rate per Hour: $31.35

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2022 - 10/17/2022
Wage Rate per Hour: $30.12
Supplemental Benefit Rate per Hour: $30.60

Effective Period: 10/18/2022 - 6/30/2023
Wage Rate per Hour: $31.02
Supplemental Benefit Rate per Hour: $31.35

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2022 - 10/17/2022
Wage Rate per Hour: $26.78
Supplemental Benefit Rate per Hour: $30.60

Effective Period: 10/18/2022 - 6/30/2023
Wage Rate per Hour: $27.58
Supplemental Benefit Rate per Hour: $31.35

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2022 - 10/17/2022
Wage Rate per Hour: $23.43
Supplemental Benefit Rate per Hour: $30.60

Effective Period: 10/18/2022 - 6/30/2023
Wage Rate per Hour: $24.13
Supplemental Benefit Rate per Hour: $31.35

Overtime Description
Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Shift Rates
When two (2) or more shifts are employed, single time shall be paid for each shift, but those employees employed on a shift other than from 8:00 A.M. to 5:00 P.M. shall, in addition, receive two dollars ($2.00) per hour differential for each hour worked. When three (3) shifts are needed, each shift shall work seven and one-half (7 ½) hours paid for eight (8) hours of labor and be permitted one-half (½) hour for mealtime.

(Carpenters District Council)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.76
Supplemental Benefit Rate per Hour: $56.24

Derrick Person & Rigger - Site Work

Assists the Stone Mason-Setter in the setting of stone and paving stone.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.20
Supplemental Benefit Rate per Hour: $44.97

Overtime Description
The first two hours of overtime on weekdays and the first seven hours of work on Saturdays are paid at time and one half for wages and supplemental benefits. All additional overtimes is paid at double time for wages and supplemental benefits.

Overtime
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $73.03
Supplemental Benefit Rate per Hour: $54.26

Diver Tender (Marine)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $52.57
Supplemental Benefit Rate per Hour: $54.26

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day

Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.16
Supplemental Benefit Rate per Hour: $54.26

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Dump Truck

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.17
Supplemental Benefit Rate per Hour: $53.95
Supplemental Note: Over 40 hours worked: at time and one half rate - $24.00; at double time rate - $32.00

Driver - Tractor Trailer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.32
Supplemental Benefit Rate per Hour: $52.40
Supplemental Note: Over 40 hours worked: at time and one half rate - $23.25; at double time rate - $31.00

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.88
Supplemental Benefit Rate per Hour: $52.40
Supplemental Note: Over 40 hours worked: at time and one half rate - $23.25; at double time rate - $31.00

Overtime Description
For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay. For Thanksgiving week, the prorated share shall be 5 1/3 hours of holiday pay for each day worked in Thanksgiving week.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day

Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Off shift work commencing between 6:00 P.M. and 4:30 A.M. shall work eight and one half (8 1/2) hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $40.89
Supplemental Benefit Rate per Hour: $47.85
Supplemental Note: Over 40 hours worked: time and one half rate $18.68; double time rate $24.90

Overtime Description

For Paid Holidays: Employees who do not work on a contractual holiday shall be compensated two (2) hours extra pay in straight time wages and benefits for every day on which the Employee does not pass up a day's work during the calendar week (Sunday through Saturday) of the holiday, up to a maximum of ten (10) hours in wages and eight (8) hours in benefit contributions for the holiday

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
President's Day
Columbus Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day

Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including installation of low voltage cabling carrying data, video and/or voice on building construction/alteration/renovation projects.)

Electrician "A" (Regular Day / Day Shift)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $59.00
Supplemental Benefit Rate per Hour: $57.84
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $61.00
Supplemental Benefit Rate per Hour: $60.06
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician "A" (Regular Day Overtime after 7 hrs / Day Shift Overtime after 8 hrs)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $88.50
Supplemental Benefit Rate per Hour: $59.74
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $91.50
Supplemental Benefit Rate per Hour: $62.02
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician "A" (Swing Shift)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $69.23
Supplemental Benefit Rate per Hour: $65.68
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $71.57
Supplemental Benefit Rate per Hour: $68.14
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician "A" (Swing Shift Overtime after 7.5 hours)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $103.85
Supplemental Benefit Rate per Hour: $67.90
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $107.36
Supplemental Benefit Rate per Hour: $70.45
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $77.54
Supplemental Benefit Rate per Hour: $72.31
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $80.17
Supplemental Benefit Rate per Hour: $74.99
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician "A" (Graveyard Shift Overtime after 7 hours)

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $116.31
Supplemental Benefit Rate per Hour: $74.80

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $120.26
Supplemental Benefit Rate per Hour: $77.57
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

*** Supplemental Benefit Rate per Hour Note**
In addition to the Supplemental Benefit Rates per Hour listed above, the employer must provide an additional 6.2% of taxable gross pay earned on covered work only. This additional Supplemental Benefit Rate will terminate

when the employee has contributed the maximum annual Social Security tax required by law, on all work performed.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on a holiday.
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
For multiple shifts of temporary light and/or power, the temporary light and/or power employee shall be paid for 8 hours at the straight time rate. For three or less workers performing 8 hours temporary light and/or power the supplemental benefit rate is $24.36, effective 04/13/2023 the supplemental benefit rate is $24.78 - See * Supplemental Benefit Rate per Hour Note above.

Electrician "M" (First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $31.25
Supplemental Benefit Rate per Hour: $25.30
First and Second Year "M" Wage Rate Per Hour: $26.75
First and Second Year "M" Supplemental Rate: $22.88

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $31.25
Supplemental Benefit Rate per Hour: $26.55
First and Second Year "M" Wage Rate Per Hour: $26.75
First and Second Year "M" Supplemental Rate: $24.13

Electrician "M" (Overtime After First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2022 - 4/12/2023
Wage Rate per Hour: $46.88
Supplemental Benefit Rate per Hour: $27.28
First and Second Year "M" Wage Rate Per Hour: $40.13
First and Second Year "M" Supplemental Rate: $24.57

Effective Period: 4/13/2023 - 6/30/2023
Wage Rate per Hour: $46.88
Supplemental Benefit Rate per Hour: $28.53
First and Second Year "M" Wage Rate Per Hour: $40.13
First and Second Year "M" Supplemental Rate: $25.82

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN

(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

Alarm Technician

Effective Period: 7/1/2022 - 3/8/2023
Wage Rate per Hour: $35.40
Supplemental Benefit Rate per Hour: $19.79
Supplemental Note: $17.91 only after 8 hours worked in a day

Effective Period: 3/9/2023 - 6/30/2023
Wage Rate per Hour: $36.40
Supplemental Benefit Rate per Hour: $20.67
Supplemental Note: $18.80 only after 8 hours worked in a day

Overtime Description

Time and one half the regular rate for work on the following holidays: Columbus Day, Veterans Day, Day after Thanksgiving.
Double time the regular rate for work on the following holidays: New Year's day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Night Differential is based upon a ten percent (10%) differential between the hours of 4:00 P.M. and 12:30 A.M. and a fifteen percent (15%) differential for the hours 12:00 A.M. to 8:30 A.M.

Vacation

At least 1 year of employment.....ten (10) days
5 years or more of employment.....fifteen (15) days
10 years of employment.....twenty (20) days

Plus one Personal Day per year

Sick Days:
One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2022 - 4/19/2023
Wage Rate per Hour: $59.00
Supplemental Benefit Rate per Hour: $59.85

Effective Period: 4/20/2023 - 6/30/2023
Wage Rate per Hour: $61.00
Supplemental Benefit Rate per Hour: $62.13
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2022 - 4/18/2023
Wage Rate per Hour: $44.66
Supplemental Benefit Rate per Hour: $45.27

Effective Period: 4/20/2023 - 6/30/2023
Wage Rate per Hour: $46.66
Supplemental Benefit Rate per Hour: $47.16
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2022 - 4/18/2023
Wage Rate per Hour: $38.61
Supplemental Benefit Rate per Hour: $41.00

Effective Period: 4/20/2023 - 6/30/2023
Wage Rate per Hour: $40.61
Supplemental Benefit Rate per Hour: $42.88
*** Supplemental Note: See Supplemental Benefit Rate per Hour Note below**

*** Supplemental Benefit Rate per Hour Note**
In addition to the Supplemental Benefit Rates per Hour listed above, the employer must provide an additional 6.2% of taxable gross pay earned on covered work only. This additional Supplemental Benefit Rate will terminate when the employee has contributed the maximum annual Social Security tax required by law, on all work performed.

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.
Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.
Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate per Hour: $75.14
Supplemental Benefit Rate per Hour: $39.11

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate per Hour: $77.49
Supplemental Benefit Rate per Hour: $40.62

Overtime Description

For New Construction: work performed after an 8 hour day, Saturday, Sunday or between 4:30pm and 7:00am shall be paid at double time rate.

Existing buildings: work performed after an 8 hour day, Saturday, Sunday or between 5:30pm and 7:00 am shall be paid time and one half.

Overtime
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Vacation
Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate per Hour: $59.09
Supplemental Benefit Rate per Hour: $39.01

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate per Hour: $60.89
Supplemental Benefit Rate per Hour: $40.52

Overtime Description
For Scheduled Service Work: Double time - work scheduled in advance by two or more workers performed on Sundays, Holidays, and between midnight and 7:00am.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Afternoon shift - regularly hourly rate plus a (15%) fifteen percent differential. Graveyard shift - time and one half the regular rate.

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ENGINEER

Engineer - Heavy Construction Operating Engineer I

Cherrypickers 20 tons and over and Loaders (rubber tired and/or tractor type with a manufacturer's minimum rated capacity of six cubic yards and over).

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $74.86
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $119.78

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherrypickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar

nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $72.55
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $116.08

Engineer - Heavy Construction Operating Engineer III

Minor Equipment such as Tractors, Post Hole Diggers, Ditch Witch (Walk Behind), Road Finishing Machines, Rollers five tons and under, Tugger Hoists, Dual Purpose Trucks, Fork Lifts, and Dempsey Dumpers, Fireperson.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $68.68
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $109.89

Engineer - Heavy Construction Maintenance Engineer I

Installing, Repairing, Maintaining, Dismantling and Manning of all equipment including Steel Cutting, Bending and Heat Sealing Machines, Mechanical Heaters, Grout Pumps, Bentonite Pumps & Plants, Screening Machines, Fusion Coupling Machines, Tunnel Boring Machines Moles and Machines of a similar nature, Power Packs, Mechanical Hydraulic Jacks; all drill rigs including but not limited to Churn, Rotary Caisson, Raised Bore & Drills of a similar nature; Personnel, Inspection & Safety Boats or any boats used to perform functions of same, Mine Hoists, Whirlies, all Climbing Cranes, all Tower Cranes, including but not limited to Truck Mounted and Crawler Type and machines of similar nature; Maintaining Hydraulic Drills and machines of a similar nature; Well Point System-Installation and dismantling; Burning, Welding, all Pumps regardless of size and/or motor power, except River Cofferdam Pumps and Wells Point Pumps; Motorized Buggies (three or more); equipment used in the cleaning and televising of sewers, but not limited to jet-rodder/vacuum truck, vacall/vactor, closed circuit television inspection equipment; high powered water pumps, jet pumps; screed machines and concrete finishing machines of a similar nature; vermeers.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $72.19
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $115.50

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $95.74
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $153.18

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.62
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $74.59

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.90
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $76.64

Engineer - Heavy Construction Service Engineer

Gradalls: Concrete Pumps: Power Houses: Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $64.78
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $103.65

Engineer - Heavy Construction Service Mechanic

Shovels: Cranes: Draglines: Backhoes: Keystones: Pavers: Trenching Machines: Gunite Machines: Compressors (three (3) or more in Battery): Crawler Cranes- having a straight lattice boom with no attachment or luffing boom, no jib and no auxiliary attachment.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $43.90
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $70.24

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $69.19
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime

Shift Wage Rate: $110.70

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $64.57
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $103.31

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $48.44
Supplemental Benefit Rate per Hour: $44.72
Supplemental Note: $82.04 on overtime
Shift Wage Rate: $77.50

Overtime Description
On jobs of more than one shift, if the next shift employee fails to report for work through any cause over which the employer has no control, the employee on duty who works the next shift continues to work at the single time rate.

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

---

Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $64.47
Supplemental Benefit Rate per Hour: $43.81
Supplemental Note: $80.22 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $49.42
Supplemental Benefit Rate per Hour: $43.81
Supplemental Note: $80.22 on overtime

Engineer - Building Work Oilers I

All gasoline, electric, diesel or air operated Gradealls: Concrete Pumps, Overhead Cranes in Power Houses: Their duties shall be to assist the Engineer in oiling, greasing and repairing of all machines; Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $61.15
Supplemental Benefit Rate per Hour: $43.81
Supplemental Note: $80.22 on overtime

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Gunite Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.68
Supplemental Benefit Rate per Hour: $43.81
Supplemental Note: $80.22 on overtime

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

When two (2) or more shifts are employed, single time will be paid for each shift.

(Local #15)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $42.49
Supplemental Benefit Rate per Hour: $25.50
Supplemental Note: Overtime Benefit Rate - $30.50 per hour (time & one half) $35.50 per hour (double time).

Instrument Person

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $34.64
Supplemental Benefit Rate per Hour: $25.50
Supplemental Note: Overtime Benefit Rate - $30.50 per hour (time & one half) $35.50 per hour (double time).

Rodperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $29.69
Supplemental Benefit Rate per Hour: $25.50
Supplemental Note: Overtime Benefit Rate - $30.50 per hour (time & one half) $35.50 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (BUILDING CONSTRUCTION)
(Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $66.46
Supplemental Benefit Rate per Hour: $40.09
Supplemental Note: Overtime Benefit Rate - $56.54 per hour (time & one half) $72.98 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $50.97
Supplemental Benefit Rate per Hour: $40.09
Supplemental Note: Overtime Benefit Rate - $56.54 per hour (time & one half) $72.98 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.90
Supplemental Benefit Rate per Hour: $40.09
Supplemental Note: Overtime Benefit Rate - $56.54 per hour (time & one half) $72.98 per hour (double time).

Overtime Description

Time and one half the regular rate after a 7 hour work and time and one half the regular rate for Saturday for the first seven hours worked, Double time the regular time rate for Saturday for work performed in excess of seven hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (HEAVY CONSTRUCTION)

(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations, Engineering Structures etc.)

Field Engineer - HC Party Chief

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $77.31
Supplemental Benefit Rate per Hour: $42.52
Supplemental Note: Overtime benefit rate - $60.06 per hour (time & one half), $77.60 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $55.97
Supplemental Benefit Rate per Hour: $42.52
Supplemental Note: Overtime benefit rate - $60.06 per hour (time & one half), $77.60 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.47
Supplemental Benefit Rate per Hour: $42.52
Supplemental Note: Overtime benefit rate - $60.06 per hour (time & one half), $77.60 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $71.98
Supplemental Benefit Rate per Hour: $42.07
Supplemental Note: Overtime benefit rate - $59.38 per hour (time & one half), $76.69 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $55.42
Supplemental Benefit Rate per Hour: $42.07
Supplemental Note: Overtime benefit rate - $59.38 per hour (time & one half), $76.69 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $36.05
Supplemental Benefit Rate per Hour: $42.07
Supplemental Note: Overtime benefit rate - $59.38 per hour (time & one half), $76.69 per hour (double time).

Overtime Description

Time and one half the regular rate for Saturday for the first eight hours worked.
Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime

Time and one half the regular rate after an 8 hour day.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $88.32
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $141.31

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $91.40
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $146.24

Operating Engineer - Road & Heavy Construction III

Mine Hoists (Cranes, etc. when used as Mine Hoists)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $94.31
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $150.90

Operating Engineer - Road & Heavy Construction IV

Gradealls, Keystones, Cranes on land or water (with digging buckets), Bridge Cranes, Vermeer Cutter and machines of a similar nature, Trenching Machines.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $92.06
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $147.30

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (working alongside Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $90.26
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $144.42

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $85.80
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $137.28

Operating Engineer - Road & Heavy Construction VII

Barrier Movers, Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $69.52
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $111.23

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $54.21
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $68.04

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $81.67
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $130.67

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $75.16
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $120.26

Operating Engineer - Road & Heavy Construction XI

Compressors (Portable 3 or more in battery), Driving of Truck Mounted Compressors, Well-point Pumps, Tugger Machines Well Point Pumps, Churn Drill.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.61
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $93.78

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $86.71
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $138.74

Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $84.02
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $134.43

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $80.36
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $128.58

Operating Engineer - Road & Heavy Construction XV

Compressors (Portable Single or two in Battery, not over 100 feet apart), Pumps (River Cofferdam) and Welding Machines, Push Button Machines, All Engines Irrespective of Power (Power-Pac) used to drive auxiliary equipment, Air, Hydraulic, etc.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $54.56
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $87.30

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Hoists (Single Drum), Load Masters, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $76.80
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $122.88

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $77.36
Supplemental Benefit Rate per Hour: $35.30

Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $123.78

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $110.56
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $176.90

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $85.80
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $137.28

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $83.63
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $133.81

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $70.88
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $113.41

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $91.66

Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $54.97
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $73.46
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $95.02
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $152.03

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $91.33
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $146.13

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $54.68
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $87.49

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine. (Public Works Only)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $52.10
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
Shift Wage Rate: $83.36

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $73.28
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, Jacking System, etc.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $54.94
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $86.78
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $91.86
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $81.38
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $80.52
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $64.09
Supplemental Benefit Rate per Hour: $35.30
Supplemental Note: $64.40 overtime hours
For New House Car projects Wage Rate per Hour $51.21
For New House Car projects: Supplemental Benefit overtime hours: $49.85

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day

Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

When two (2) or more shifts are employed, single time will be paid for each shift.
For Steel Erection Only: Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $55.05
Supplemental Benefit Rate per Hour: $47.83

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Day before Christmas
Christmas Day
Day before New Year's Day

Shift Rates

Two shifts may be utilized with the first shift working 8 a.m. to the end of the shift at straight time rate of pay. The wage rate for the second shift consisting of 7 hours shall be paid at 114.29% of straight time wage rate. The wage rate for the second shift consisting of 8 hours shall be paid 112.5% of the straight time wage rate. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

GLAZIER
(New Construction, Remodeling, and Alteration)

Glazier

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.55
Supplemental Benefit Rate per Hour: $50.04
Supplemental Note: Supplemental Benefit Overtime Rate: $75.07

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Shifts shall be any 8 consecutive hours after the normal working day for which the Glazier shall receive 9 hours pay for 8 hours worked.

(Local #1281)

GLAZIER - REPAIR & MAINTENANCE

(For the Installation of Glass - All repair and maintenance work on a particular building.)

Craft Jurisdiction for repair, maintenance and fabrication

Plate glass replacement, Residential glass replacement, Residential mirrors and shower doors, Storm windows and storm doors, Residential replacement windows, Herculite door repairs, Door closer repairs, Retrofit apartment house (non-commercial buildings), Glass tinting.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $26.40
Supplemental Benefit Rate per Hour: $25.32

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).
Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Local #1281)

HAZARDOUS MATERIAL HANDLER

(Removal, abatement, encapsulation or decontamination of asbestos, lead, mold, or other toxic or hazardous waste/materials)

Handler

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $38.05

Supplemental Benefit Rate per Hour: $19.10

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $38.05
Supplemental Benefit Rate per Hour: $19.60

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.
Time and one half the regular hourly rate after 40 straight time hours in any work week.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day
Easter

Paid Holidays
None

(Local #78 and Local #12A)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $62.71
Supplemental Benefit Rate per Hour: $41.91

Overtime Description
Double time shall be paid for supplemental benefits during overtime work.
8th hour paid at time and one half.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Triple time the regular rate for work on the following holiday(s).
Labor Day

Paid Holidays
None

Shift Rates
The first shift shall work seven hours at the regular straight time rate. The second and third shift shall work seven hours the regular straight time hourly rate plus a fourteen percent wage and benefit premium.There must be a first shift to work the second shift, and a second shift to work the third shift. Off-hour jobs in occupied buildings may be worked on weekdays with an increment of one-dollar ($1.00) per hour and eight (8) hours pay for seven (7) hours worked.

(Local #12) (BCA)

HOUSE WRECKER
(TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter will be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). Other House Wreckers may be Tier B House Wreckers.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $38.23
Supplemental Benefit Rate per Hour: $30.97

House Wrecker - Tier B

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.46
Supplemental Benefit Rate per Hour: $23.38

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

Iron Worker - Ornamental

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.65
Supplemental Benefit Rate per Hour: $61.62
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description
Time and one half the regular rate after a 7 hour day for a maximum of two hours on any regular work day (the 8th and 9th hour) and double time shall be paid for all work on a regular work day thereafter, time and one half the regular rate for Saturday for the first seven hours of work and double time shall be paid for all work on a Saturday thereafter.

Overtime
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When two or three shifts are employed on a job, Monday through Friday, the second and third shift are paid eight and one half (8 ½) hours at the straight time rate for seven (7) hours of work, and ten (10) hours at the straight time rate for eight (8) hours of work. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, eight hours will be paid at straight time rate for seven hours of work, and all overtime shall be paid at time and one-half the regular straight time rates but on Sundays and Holidays, time and one-half the regular straight time rate shall be paid for all work up to seven (7) hours and double time shall be paid for all work thereafter.

(Local #580)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $55.70
Supplemental Benefit Rate per Hour: $84.79
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description
Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time. Four Days a week at Ten (10) hours straight time is allowed.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
Monday through Friday - First Shift: First eight hours are paid at straight time, the 9th & 10th hours are paid at time and a half, double time paid thereafter. Second and third Shifts: First eight hours are paid at time and one-half, double time thereafter. Saturdays: All shifts, first eight hours paid at time and one-half, double time thereafter: Sunday all shifts are paid at double time.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday.

(Local #40 & #361)

LABORER
(Foundation, Concrete, Excavating, Street Pipe Layer and Common)

Laborer

Excavation and foundation work for buildings, heavy construction, engineering work, and hazardous waste removal in connection with the above work. Landscaping tasks in connection with heavy construction work, engineering work and building projects. Projects include, but are not limited to pollution plants, sewers, parks, subways, bridges, highways, etc.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.00
Supplemental Benefit Rate per Hour: $50.43

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Labor Day

Thanksgiving Day

Shift Rates

When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING

(Landscaping tasks, such as tree pruning, tree removing and spraying in connection with Green Infrastructure maintenance and the planting of street trees and trees in City parks, but not when such activities are performed as part of construction or reconstruction projects.)

Landscaper (Year 6 and above)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $35.06
Supplemental Benefit Rate per Hour: $17.55

Landscaper (Year 3 - 5)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $33.93
Supplemental Benefit Rate per Hour: $17.55

Landscaper (up to 3 years)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.09
Supplemental Benefit Rate per Hour: $17.55

Groundperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.09
Supplemental Benefit Rate per Hour: $17.55

Tree Remover / Pruner

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate per Hour: **$40.76**
Supplemental Benefit Rate per Hour: **$17.55**

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$29.39**
Supplemental Benefit Rate per Hour: **$17.55**

Watering - Plant Maintainer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$23.68**
Supplemental Benefit Rate per Hour: **$17.55**

Overtime Description
For all overtime work performed, supplemental benefits shall include an additional seventy-five ($0.75) cents per hour.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Shift Rates
Work performed on a 4pm to 12am shift has a 15% differential. Work performed on a 12am to 8am shift has a 20% differential.

(Local #175)

MARBLE MECHANIC

Marble Setter

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: **$57.17**

Supplemental Benefit Rate per Hour: $42.26

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $57.40
Supplemental Benefit Rate per Hour: $42.66

Marble Finisher

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $44.42
Supplemental Benefit Rate per Hour: $39.46

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $44.65
Supplemental Benefit Rate per Hour: $39.76

Marble Polisher

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $43.35
Supplemental Benefit Rate per Hour: $32.26

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $43.71
Supplemental Benefit Rate per Hour: $32.46

Marble Maintenance Finisher

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $27.01
Supplemental Benefit Rate per Hour: $13.99

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $27.17
Supplemental Benefit Rate per Hour: $14.23

Overtime Description
Supplemental Benefit contributions are to be made at the applicable overtime rates.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday

Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $39.95
Supplemental Benefit Rate per Hour: $31.99

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
The employer may work two (2) shifts with the first shift at the straight time wage rate and the second shift receiving eight (8) hours paid for seven (7) hours work at the straight time wage rate. When it is not possible to conduct alteration work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Local #79)

MASON TENDER (INTERIOR DEMOLITION WORKER)

Mason Tender Tier A

Tier A Interior Demolition Worker performs all burning, chopping, and other technically skilled tasks related to interior demolition work.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $37.69
Supplemental Benefit Rate per Hour: $26.10

Mason Tender Tier B

Tier B Interior Demolition Worker performs manual work and work incidental to demolition work, such as loading and carting of debris from the work site to an area where it can be loaded in to bins/trucks for removal. Also performs clean-up of the site when demolition is completed.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $26.88
Supplemental Benefit Rate per Hour: $20.42

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.40
Supplemental Benefit Rate per Hour: $51.30
Supplemental Note: For time and one half overtime - $63.05 For double overtime - $79.10

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
Off-shift work outside of normal working hours shall receive straight time rate plus $12 per hour for the first eight (8) hours.

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.80
Supplemental Benefit Rate per Hour: $55.96

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Second and third shifts receives the straight time rate of pay plus fifteen (15%) percent allowing for one half hour for a meal. There must be a first shift to work a second and third shift. All additional hours worked shall be paid at the time and one-half rate of pay plus fifteen (15%) percent for weekday hours.

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $52.75
Supplemental Benefit Rate per Hour: $44.37

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $51.14
Supplemental Benefit Rate per Hour: $44.37

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $51.14
Supplemental Benefit Rate per Hour: $44.37

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $43.00
Supplemental Benefit Rate per Hour: $38.78
Supplemental Note: $46.62 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.00
Supplemental Benefit Rate per Hour: $38.78
Supplemental Note: $46.62 on overtime

Overtime
Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(District Council of Painters #9)

PAINTER - LINE STRIPING (ROADWAY)

Striping - Machine Operator

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $39.00
Supplemental Benefit Rate per Hour: $15.27
Supplemental Note: Overtime Supplemental Benefit rate - $15.90

Lineperson (Thermoplastic)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $43.00
Supplemental Benefit Rate per Hour: $15.27
Supplemental Note: Overtime Supplemental Benefit rate - $15.90

Striping Assistant & Traffic Safety

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $37.00
Supplemental Benefit Rate per Hour: $15.27
Supplemental Note: Overtime Supplemental Benefit rate - $15.90

Overtime Description
For Paid Holidays: Employees will only receive Holiday Pay for holidays not worked if said employee worked both the regularly scheduled workday before and after the holiday.

Overtime

Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Vacation

Employees with one to two years service shall accrue vacation based on hours worked: 250 hours worked - 1 day vacation; 500 hours worked - 2 days vacation; 750 hours worked - 3 days vacation; 900 hours worked - 4 days vacation; 1,000 hours worked - 5 days vacation. Employees with two to five years service receive two weeks vacation. Employees with five to twenty years service receive three weeks vacation. Employees with twenty to twenty-five years service receive four weeks vacation. Employees with 25 or more years service receive five weeks vacation.

(Local #1010)

PAINTER - METAL POLISHER

METAL POLISHER

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $32.51
Supplemental Benefit Rate per Hour: $10.92

METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $33.46
Supplemental Benefit Rate per Hour: $10.92

METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $36.01
Supplemental Benefit Rate per Hour: $10.92

ASSISTANT METAL POLISHER

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $25.31
Supplemental Benefit Rate per Hour: $10.44

ASSISTANT METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $26.26
Supplemental Benefit Rate per Hour: $10.44

ASSISTANT METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.81
Supplemental Benefit Rate per Hour: $10.44

Overtime Description
All work performed on Saturdays shall be paid at time-in-a half. The exception being; for suspended scaffold work and work deemed as a construction project; an eight (8) hour shift lost during the week due to circumstances beyond the control of the employer, up to a maximum of eight (8) hours per week, may be worked on Saturday at the straight time rate.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.
Triple time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

PAINTER - SIGN

Sign Painter

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $45.54
Supplemental Benefit Rate per Hour: $22.29

Assistant Sign Painter

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $38.70
Supplemental Benefit Rate per Hour: $20.20

Overtime Description
If any employee is required to work on any of the paid holidays then the employee shall receive double time rate of wages as well as the holiday pay for that day.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Paid Holidays
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Vacation
At least 1 year of employment.....1 week
2 years or more of employment.....2 weeks
8 years or more of employment.....3 weeks

(Local #8A-28A)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $53.00
Supplemental Benefit Rate per Hour: $49.83

Painter - Power Tool

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $59.50
Supplemental Benefit Rate per Hour: $49.83
Overtime Wage Rate: $6.50 above the "Painters on Structural Steel" overtime rate.

Overtime Description
Supplemental Benefits shall be paid for each hour worked, up to forty (40) hours per week for the period of May 1st to November 15th or up to fifty (50) hours per week for the period of November 16th to April 30th.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Second shift is paid at regular hourly wage rates plus a ten percent (10%) differential. There must be a first shift in order to work a second shift.

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.37

Supplemental Benefit Rate per Hour: $39.06
Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $48.35
Supplemental Benefit Rate per Hour: $50.19
Supplemental Note: For time and one half overtime - $54.44 For double overtime - $58.69

Paver & Roadbuilder - Laborer

Paving and road construction work, regardless of material used, including but not limited to preparation of job sites, removal of old surfaces, asphalt and/or concrete, by whatever method, including but not limited to milling; laying of concrete; laying of asphalt for temporary, patchwork, and utility paving (but not production paving); site preparation and incidental work for installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry/seal coating, paving stones, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.48
Supplemental Benefit Rate per Hour: $50.19
Supplemental Note: For time and one half overtime - $54.44 For double overtime - $58.69

Production Paver & Roadbuilder - Screed Person

(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is traditionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $48.95
Supplemental Benefit Rate per Hour: $50.19
Supplemental Note: For time and one half overtime - $54.44 For double overtime - $58.69

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $48.35
Supplemental Benefit Rate per Hour: $50.19
Supplemental Note: For time and one half overtime - $54.44 For double overtime - $58.69

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamper, AC paint and liquid tar work.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.48
Supplemental Benefit Rate per Hour: $50.19
Supplemental Note: For time and one half overtime - $54.44 For double overtime - $58.69

Overtime Description
If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
Memorial Day
Independence Day
Labor Day
Columbus Day

Thanksgiving Day

Paid Holidays

Memorial Day
Independence Day
Labor Day
Thanksgiving Day

Shift Rates

When two shifts are employed, the work period for each shift shall be a continuous eight (8) hours. When three shifts are employed, each shift will work seven and one half (7 ½) hours but will be paid for eight (8) hours at the straight time rate since only one half (1/2) hour is allowed for meal time.
When two or more shifts are employed, single time will be paid for each shift.

Night Work - On night work, the first eight (8) hours of work will be paid for at the single time rate, except that production paving work shall be paid at 10% over the single time rate for the screed person, rakers and shovelers directly involved only. This differential is to be paid when there is only one shift and the shift works at night. All other workers will be exempt. Hours worked over eight (8) hours during said shift shall be paid for at the time and one-half rate.

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.03
Supplemental Benefit Rate per Hour: $28.79

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When it is not possible to conduct work during regular working hours (between 6:30am and 4:30pm), a shift differential shall be paid at the regular hourly rate plus a twelve percent (12%) per hour differential. Workers on shift work shall be allowed a paid one-half hour meal break.

(Local #262)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $39.95
Supplemental Benefit Rate per Hour: $31.99

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $72.50
Supplemental Benefit Rate per Hour: $41.45
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Plumber - Temporary Services

Temporary Services - When there are no Plumbers on the job site, there may be three shifts designed to cover the entire twenty-four hour period, including weekends if necessary, at the following rate straight time.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.08
Supplemental Benefit Rate per Hour: $33.08

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHNICAL EQUIPMENT AND SERVICE)

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Plumber

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.60
Supplemental Benefit Rate per Hour: $19.96

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $50.35
Supplemental Benefit Rate per Hour: $29.73

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER: PUMP & TANK
Oil Trades (Installation and Maintenance)

Plumber - Pump & Tank

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $69.73
Supplemental Benefit Rate per Hour: $28.48

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day

Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER
(Exterior Building Renovation)

Journeyperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $58.83
Supplemental Benefit Rate per Hour: $30.10

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

All work outside the regular work day (an eight hour workday between the hours of 6:00 A.M. and 4:00 P.M.) is to be paid at time and one half the regular rate. However, the employer may establish one (1) or two (2) shifts starting at or after 4:00 P.M. to be paid at the regular hourly rate plus a 10% differential.

(Bricklayer District Council)

ROOFER

Roofer

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $45.25
Supplemental Benefit Rate per Hour: $37.56

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Second shift - Regular hourly rate plus a 10% differential. Third shift - Regular hourly rate plus a 15% differential. There must be a first shift to work the second shift, and a second shift to work the third shift. All other work outside the regular work day (an eight hour workday between the hours of 5:00 A.M. and 4:00 P.M.) is to be paid at time and one half the regular rate.

(Local #8)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $52.10
Supplemental Benefit Rate per Hour: $55.18
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $41.68
Supplemental Benefit Rate per Hour: $55.18

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $19.12
Supplemental Benefit Rate per Hour: $12.01

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Work that can only be performed outside regular working hours (eight hours of work between 7:30 A.M. and 3:30 P.M.) - First shift (work between 3:30 P.M. and 11:30 P.M.) - 10% differential above the established hourly rate. Second shift (work between 11:30 P.M. and 7:30 A.M.) - 15% differential above the established hourly rate.

For Fan Maintenance: On all full shifts of fan maintenance work the straight time hourly rate of pay will be paid for each shift, including nights, Saturdays, Sundays, and holidays.

(Local #28)

SHEET METAL WORKER - SPECIALTY
(Decking & Siding)

Sheet Metal Specialty Worker

The first worker to perform this work must be paid at the rate of the Sheet Metal Worker. The second and third workers shall be paid the Specialty Worker Rate. The ratio of One Sheet Metal Worker, then Two Specialty Workers shall be utilized thereafter.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $49.05
Supplemental Benefit Rate per Hour: $27.76
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Local #28)

SHIPYARD WORKER

Shipyard Mechanic - First Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $28.85
Supplemental Benefit Rate per Hour: $3.93

Shipyard Mechanic - Second Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.07
Supplemental Benefit Rate per Hour: $3.79

Shipyard Laborer - First Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.48
Supplemental Benefit Rate per Hour: $3.77

Shipyard Laborer - Second Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $17.93
Supplemental Benefit Rate per Hour: $3.78

Shipyard Dockhand - First Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.15
Supplemental Benefit Rate per Hour: $3.70

Shipyard Dockhand - Second Class

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.04
Supplemental Benefit Rate per Hour: $3.61

Overtime Description

Work performed on holiday is paid double time the regular hourly wage rate plus holiday pay.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Based on Survey Data

SIGN ERECTOR
(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $53.79
Supplemental Benefit Rate per Hour: $59.56

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Time and one half the regular hourly rate is to be paid for all hours worked outside the regular workday either (7:00 A.M. through 2:30 P.M.) or (8:00 A.M. through 3:30 P.M.)

(Local #137)

STEAMFITTER

Steamfitter

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $61.30
Supplemental Benefit Rate per Hour: $59.89
Supplemental Note: Overtime supplemental benefit rate: $119.04

Steamfitter -Temporary Services

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $46.59
Supplemental Benefit Rate per Hour: $48.70

Overtime Description
Double time after a 7 hour day except for Temporary Services.

Overtime
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
May be performed outside of the regular workday except Saturday, Sunday and Holidays. When shift work is performed the wage rate for regular time worked is a 15% percent premium on wage and 15% percent premium on supplemental benefits.

Local 638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER
(Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $43.85
Supplemental Benefit Rate per Hour: $19.96

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Christmas Day

Double time and one half the regular rate for work on the following holiday(s).
Martin Luther King Jr. Day
President's Day
Memorial Day
Columbus Day

Paid Holidays
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #638-B)

STONE MASON - SETTER

Stone Mason - Setter

(Assisted by Derrickperson and Rigger)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.16
Supplemental Benefit Rate per Hour: $50.17

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates
For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $48.47
Supplemental Benefit Rate per Hour: $30.01

Overtime
Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

(Local #1974)

TELECOMMUNICATION WORKER
(Install/maintain/repair telecommunications cables carrying data, video, and/or voice except for installation on building construction/alteration/renovation projects.)

Telecommunication Worker

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.03
Supplemental Benefit Rate per Hour: $23.15
Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. $22.84 for Staten Island only.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Lincoln's Birthday
Washington's Birthday

Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

After 6 months.....one week.
After 12 months but less than 7 years.....two weeks.
After 7 or more but less than 15 years.....three weeks.
After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $44.40
Supplemental Benefit Rate per Hour: $35.56

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.41
Supplemental Benefit Rate per Hour: $40.11

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day

Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TIMBERPERSON

Timberperson

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $53.05
Supplemental Benefit Rate per Hour: $53.94

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate. Benefits for off-shift work shall be paid at the straight time rate.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $68.58
Supplemental Benefit Rate per Hour: $60.19

Tunnel Workers (Compressed Air Rates)

Includes shield driven liner plate portions or solidification portions work (8 hour shift) during excavation phase.

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $66.14
Supplemental Benefit Rate per Hour: $58.29

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $65.04
Supplemental Benefit Rate per Hour: $57.14

Outside Lock Tender, Outside Gauge Tender,Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $63.74
Supplemental Benefit Rate per Hour: $56.20

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $63.74
Supplemental Benefit Rate per Hour: $56.20

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $56.04
Supplemental Benefit Rate per Hour: $52.83

Blasters (Free Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $65.41
Supplemental Benefit Rate per Hour: $57.80

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $62.58
Supplemental Benefit Rate per Hour: $55.38

All Others (Free Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $57.84
Supplemental Benefit Rate per Hour: $51.26

Microtunneling (Free Air Rates)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $50.06
Supplemental Benefit Rate per Hour: $44.30

Overtime Description

For work performed during excavation and primary concrete tunnel lining phases - Double time the regular rate after an 8 hour day and Saturday, Sunday and on the following holiday(s) listed below.
For Repair-Maintenance Work on Existing Equipment and Facilities - Time and one half the regular rate after a 7 hour day, Saturday, Sunday and double time the regular rate for work on the following holiday(s) listed below.
For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.
For work not listed above - Time and one half the regular rate after an 8 hour day and Saturday and double time the regular rate on Sunday and on the following holiday(s) listed below.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #147)

UTILITY LOCATOR
(Locate & mark underground utilities for street excavation.)

Utility Locator (Year 7 and above)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.56
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Year 5 - 6)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.85
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Year 4)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $21.54
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Year 3)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.30
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Year 2)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $19.13
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Year 1)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.04
Supplemental Benefit Rate per Hour: $1.43

Utility Locator (Up to 1 year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $1.43
Supplemental Note: No benefits for the first 90 days of employment.

Overtime

Time and one half the regular rate for work on the following holiday(s).
Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day
Memorial Day
Independence Day
Thanksgiving Day
Christmas Day

Shift Rates

10% shift differential to employees working any shift starting between noon and 5 AM.

Vacation

For up to 1 year 0 hours
For year 1 - 2 48 hours per year
For year 3 - 9 96 hours per year
For year 10 or more 144 hours per year

Sick Days:
For up to 1 year employee receives 40 hours paid sick leave.
For year 1 employee earns 2 hours of paid sick leave for every 100 overtime hours worked.
For year 2 - 9 years employee earns 4 hours of paid sick leave for every 100 overtime hours worked.
For year 10 or more employee earns 6 hours of paid sick leave for every 100 overtime hours worked.

(C.W.A.)

WELDER

TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE PERFORMING THE WORK.

OFFICE OF THE COMPTROLLER

CITY OF NEW YORK

CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Pursuant to Labor Law § 220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant and registered with the New York State Department of Labor, may be paid at the apprentice rates in this schedule. Apprentices who are not so registered must be paid as journey persons in accordance with the trade classification of the work they actually performed.

Apprentice ratios are established to ensure the proper safety, training and supervision of apprentices. A ratio establishes the number of journey workers required for each apprentice in a program and on a job site. Ratios are interpreted as follows: in the case of a 1:1, 1:4 ratio, there must be one journey worker for the first apprentice, and four additional journey workers for each subsequent apprentice.

TABLE OF CONTENTS

BOILERMAKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Boilermaker (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.57

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $35.54

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $37.51

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $39.48

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $41.45

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $43.42

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $45.39

(Local #5)

BRICKLAYER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Bricklayer (First 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $23.85

(Bricklayer District Council)

CARPENTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Carpenter (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour For Building Apprentice: $19.80
Supplemental Benefit Rate Per Hour For Building Apprentice: $16.85

Wage Rate Per Hour For Heavy Apprentice: $24.60
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $36.26

Carpenter (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour For Building Apprentice: $22.80
Supplemental Benefit Rate Per Hour For Building Apprentice: $18.35

Wage Rate Per Hour For Heavy Apprentice: $30.20
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $36.26

Carpenter (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour For Building Apprentice: $27.05
Supplemental Benefit Rate Per Hour For Building Apprentice: $21.95

Wage Rate Per Hour For Heavy Apprentice: $38.58
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $36.26

Carpenter (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour For Building Apprentice: $34.93
Supplemental Benefit Rate Per Hour For Building Apprentice: $23.95

Wage Rate Per Hour For Heavy Apprentice: $46.97
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $36.26

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS
(Ratio of Apprentice to Journeyperson: 1 to 1, 2 to 5)

Carpenter - High Rise (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.27
Supplemental Benefit Rate per Hour: $16.55

Carpenter - High Rise (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.70
Supplemental Benefit Rate per Hour: $17.68

Carpenter - High Rise (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.28
Supplemental Benefit Rate per Hour: $17.81

Carpenter - High Rise (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $38.90
Supplemental Benefit Rate per Hour: $17.96

(Carpenters District Council)

CEMENT AND CONCRETE WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Cement & Concrete Worker (First 1333 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 53% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $14.79

Cement & Concrete Worker (Second 1333 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 69% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $19.72

Cement & Concrete Worker (Last 1334 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $21.30

(Cement Concrete Workers District Council)

CEMENT MASON
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cement Mason (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $19.92
Supplemental Benefit Rate per Hour: $15.61

Cement Mason (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.82
Supplemental Benefit Rate per Hour: $15.91

Cement Mason (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $30.22
Supplemental Benefit Rate per Hour: $16.02

(Local #780)

DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 50% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $24.60
Supplemental Benefit Rate Per Hour: $36.26

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $30.20
Supplemental Benefit Rate Per Hour: $36.26

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $38.58
Supplemental Benefit Rate Per Hour: $36.26

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $46.97

Supplemental Benefit Rate Per Hour: $36.26

(Carpenters District Council)

ELECTRICIAN
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Electrician (First Term: 0-6 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.00
Supplemental Benefit Rate per Hour: $15.68
Overtime Supplemental Rate Per Hour: $16.88

Electrician (First Term: 7-12 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.50
Supplemental Benefit Rate per Hour: $15.94
Overtime Supplemental Rate Per Hour: $17.17

Electrician (Second Term: 0-6 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $19.50
Supplemental Benefit Rate per Hour: $16.47
Overtime Supplemental Rate Per Hour: $17.76

Electrician (Second Term: 7-12 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.50
Supplemental Benefit Rate per Hour: $16.99
Overtime Supplemental Rate Per Hour: $18.35

Electrician (Third Term: 0-6 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $21.50
Supplemental Benefit Rate per Hour: $17.52
Overtime Supplemental Rate Per Hour: $18.94

Electrician (Third Term: 7-12 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.50
Supplemental Benefit Rate per Hour: $18.04
Overtime Supplemental Rate Per Hour: $19.53

Electrician (Fourth Term: 0-6 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $23.50
Supplemental Benefit Rate per Hour: $18.56
Overtime Supplemental Rate Per Hour: $20.12

Electrician (Fourth Term: 7-12 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $25.50
Supplemental Benefit Rate per Hour: $19.61
Overtime Supplemental Rate Per Hour: $21.30

Electrician (Fifth Term: 0-12 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $26.75
Supplemental Benefit Rate per Hour: $22.88
Overtime Supplemental Rate Per Hour: $24.57

Electrician (Fifth Term: 13-18 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.25
Supplemental Benefit Rate per Hour: $25.30
Overtime Supplemental Rate Per Hour: $27.28

Overtime Description
Overtime Wage paid at time and one half the regular rate

(Local #3)

ELEVATOR CONSTRUCTOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator (Constructor) - First Year

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $33.38

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $34.64

Elevator (Constructor) - Second Year

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $33.96

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $35.24

Elevator (Constructor) - Third Year

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $35.10

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $36.43

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $36.24

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $37.63

(Local #1)

ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator Service/Modernization Mechanic (First Year)

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: $33.33

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: $34.59

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $33.90

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $35.18

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $35.03

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $36.37

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2022 - 3/16/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $36.17

Effective Period: 3/17/2023 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $37.55

(Local #1)

ENGINEER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.47
Supplemental Benefit Rate per Hour: $30.97

Engineer - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $34.34
Supplemental Benefit Rate per Hour: $30.97

Engineer - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $37.77
Supplemental Benefit Rate per Hour: $30.97

Engineer - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $41.21
Supplemental Benefit Rate per Hour: $30.97

(Local #15)

ENGINEER - OPERATING
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 40% of Operating Engineer - Road & Heavy Construction V's Rate
Supplemental Benefit Per Hour: $24.80

Operating Engineer - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 50% of Operating Engineer - Road & Heavy Construction V's Rate
Supplemental Benefit Per Hour: $24.80

Operating Engineer - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Operating Engineer - Road & Heavy Construction V's Rate

Supplemental Benefit Per Hour: $24.80

(Local #14)

FLOOR COVERER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Floor Coverer (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.80
Supplemental Benefit Rate per Hour: $16.83

Floor Coverer (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.80
Supplemental Benefit Rate per Hour: $18.33

Floor Coverer (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $32.05
Supplemental Benefit Rate per Hour: $21.93

Floor Coverer (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $39.93
Supplemental Benefit Rate per Hour: $23.93

(Carpenters District Council)

GLAZIER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Glazier (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Glazier (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Glazier (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Glazier (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #1281)

HAZARDOUS MATERIAL HANDLER
(Ratio of Apprentice Journeyperson: 1 to 1, 1 to 3)

Handler (First 1000 Hours)

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $20.00
Supplemental Benefit Rate per Hour: $14.25

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $20.00
Supplemental Benefit Rate per Hour: $14.75

Handler (Second 1000 Hours)

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $21.00
Supplemental Benefit Rate per Hour: $14.25

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $21.00
Supplemental Benefit Rate per Hour: $14.75

Handler (Third 1000 Hours)

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $24.00
Supplemental Benefit Rate per Hour: $14.25

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $24.00
Supplemental Benefit Rate per Hour: $14.75

Handler (Fourth 1000 Hours)

Effective Period: 7/1/2022 - 7/3/2022
Wage Rate per Hour: $26.00
Supplemental Benefit Rate per Hour: $14.25

Effective Period: 7/4/2022 - 6/30/2023
Wage Rate per Hour: $26.00
Supplemental Benefit Rate per Hour: $14.75

(Local #78)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

(Local #12)

HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

House Wrecker - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.80
Supplemental Benefit Rate per Hour: $10.67

House Wrecker - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.75
Supplemental Benefit Rate per Hour: $10.67

House Wrecker - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.25
Supplemental Benefit Rate per Hour: $10.67

House Wrecker - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $26.75
Supplemental Benefit Rate per Hour: $10.67

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Iron Worker (Ornamental) - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.63
Supplemental Benefit Rate per Hour: $17.61

Iron Worker (Ornamental) - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.22
Supplemental Benefit Rate per Hour: $18.86

Iron Worker (Ornamental) - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.80
Supplemental Benefit Rate per Hour: $20.12

Iron Worker (Ornamental) - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.38
Supplemental Benefit Rate per Hour: $21.38

(Local #580)

IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $28.97
Supplemental Benefit Rate per Hour: $58.62

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $29.57
Supplemental Benefit Rate per Hour: $58.62

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate per Hour: $30.18
Supplemental Benefit Rate per Hour: $58.62

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)
(Ratio Apprentice to Journeyperson: 1 to 1, 1 to 3)

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $50.43

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $50.43

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $50.43

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: $50.43

(Local #731)

MARBLE MECHANICS
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 45% of Journeyperson's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Cutters & Setters - Seventh 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Cutters & Setters - Eighth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Cutters & Setters - Ninth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Cutters & Setters - Tenth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

Polishers & Finishers - First 900 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 900 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

Polishers & Finishers - Third 900 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

MASON TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Mason Tender - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.95
Supplemental Benefit Rate per Hour: $10.82

Mason Tender - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.90
Supplemental Benefit Rate per Hour: $10.82

Mason Tender - Third Year

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate per Hour: **$24.40**
Supplemental Benefit Rate per Hour: **$10.82**

Mason Tender - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$26.90**
Supplemental Benefit Rate per Hour: **$10.82**

(Local #79)

MASON TENDER (INTERIOR DEMOLITION WORKER)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Mason Tender (Interior Demolition) - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$20.70**
Supplemental Benefit Rate per Hour: **$10.82**

Mason Tender (Interior Demolition) - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$22.65**
Supplemental Benefit Rate per Hour: **$10.82**

Mason Tender (Interior Demolition) - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$24.15**
Supplemental Benefit Rate per Hour: **$10.82**

Mason Tender (Interior Demolition) - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: **$26.65**
Supplemental Benefit Rate per Hour: **$10.82**

(Local #79)

METALLIC LATHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metallic Lather (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $22.55
Supplemental Benefit Rate per Hour: $17.87

Metallic Lather (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $23.60
Supplemental Benefit Rate per Hour: $16.87

Metallic Lather (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.60
Supplemental Benefit Rate per Hour: $15.92

Metallic Lather (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $37.18
Supplemental Benefit Rate per Hour: $21.82

(Local #46)

MILLWRIGHT
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Millwright (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.24
Supplemental Benefit Rate per Hour: $35.94

Millwright (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $36.69
Supplemental Benefit Rate per Hour: $39.64

Millwright (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $42.14
Supplemental Benefit Rate per Hour: $43.99

Millwright (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $53.04
Supplemental Benefit Rate per Hour: $50.75

(Local #740)

PAINTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painter - Brush & Roller - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $17.20
Supplemental Benefit Rate per Hour: $17.42

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $21.50
Supplemental Benefit Rate per Hour: $22.41

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $25.80
Supplemental Benefit Rate per Hour: $26.46

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate per Hour: $34.40
Supplemental Benefit Rate per Hour: $34.15

(District Council of Painters)

PAINTER - LINE STRIPING (ROADWAY)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painter - Line Striping (Roadway) - First Year (Minimum 1000 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $30.36
Supplemental Benefit Rate per Hour: $15.27

Painter - Line Striping (Roadway) - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $15.27

(Local #1010)

PAINTER - METAL POLISHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metal Polisher (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $16.00
Supplemental Benefit Rate per Hour: $7.96
New Construction - Wage Rate Per Hour: $16.39
Scaffold Over 34 Feet - Wage Rate Per Hour: $18.50

Metal Polisher (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $17.00

Supplemental Benefit Rate per Hour: $7.96
New Construction - Wage Rate Per Hour: $17.44
Scaffold Over 34 Feet - Wage Rate Per Hour: $19.50

Metal Polisher (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $18.00
Supplemental Benefit Rate per Hour: $7.96
New Construction - Wage Rate Per Hour: $18.54
Scaffold Over 34 Feet - Wage Rate Per Hour: $20.50

(Local 8A-28)

PAINTER - STRUCTURAL STEEL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #806)

PAVER AND ROADBUILDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $29.86
Supplemental Benefit Rate per Hour: $24.60

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $24.60

(Local #1010)

PLASTERER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)
(Each Term is 800 Hours.)

Plasterer - First Term

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $17.48

Plasterer - Second Term

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $18.63

Plasterer - Third Term

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $20.93

Plasterer - Fourth Term

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $22.10

(Local #262)

PLASTERER - TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer Tender - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $21.45
Supplemental Benefit Rate per Hour: $10.32

Plasterer Tender - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $23.40
Supplemental Benefit Rate per Hour: $10.32

Plasterer Tender - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.90
Supplemental Benefit Rate per Hour: $10.32

Plasterer Tender - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $27.40
Supplemental Benefit Rate per Hour: $10.32

(Local #79)

PLUMBER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $16.78
Supplemental Benefit Rate per Hour: $5.43

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $19.78
Supplemental Benefit Rate per Hour: $6.43

Plumber - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $28.99
Supplemental Benefit Rate per Hour: $21.95

Plumber - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $31.09
Supplemental Benefit Rate per Hour: $21.95

Plumber - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $33.94
Supplemental Benefit Rate per Hour: $21.95

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $35.34
Supplemental Benefit Rate per Hour: $21.95

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.41
Supplemental Benefit Rate per Hour: $21.95

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER

(Exterior Building Renovation)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $29.86
Supplemental Benefit Rate per Hour: $15.00

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $33.74
Supplemental Benefit Rate per Hour: $20.05

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $39.02
Supplemental Benefit Rate per Hour: $23.80

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $47.05
Supplemental Benefit Rate per Hour: $24.80

(Bricklayer District Council)

ROOFER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Roofer - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $3.82

Roofer - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.92

Roofer - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $22.64

Roofer - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $28.24

(Local #8)

SHEET METAL WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Sheet Metal Worker (0-6 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 25% of Journeyperson's rate
Supplemental Rate Per Hour: $6.84

Sheet Metal Worker (7-18 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $20.20

Sheet Metal Worker (19-30 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $27.48

Sheet Metal Worker (31-36 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $32.52

Sheet Metal Worker (37-42 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $32.52

Sheet Metal Worker (43-48 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $40.08

Sheet Metal Worker (49-54 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $40.08

Sheet Metal Worker (55-60 Months)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $45.12

(Local #28)

SIGN ERECTOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $17.09

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $19.39

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $21.70

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $24.02

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $32.50

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $35.35

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $39.00

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $41.95

Sign Erector - Fifth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $44.89

Sign Erector - Sixth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $47.80

(Local #137)

STEAMFITTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Steamfitter - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate and Supplemental Rate per Hour: 60% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate and Supplemental Rate Per Hour: 70% of Journeyperson's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

(Local #638)

STEAMFITTER - REFRIGERATION & AIR CONDITIONER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Refrigeration & Air Conditioner (First Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $21.23
Supplemental Benefit Rate per Hour: $13.29

Refrigeration & Air Conditioner (Second Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $25.63
Supplemental Benefit Rate per Hour: $14.57

Refrigeration & Air Conditioner (Third Year)

Effective Period: 7/1/2022 - 6/30/2023

Wage Rate per Hour: $29.85
Supplemental Benefit Rate per Hour: $15.91

Refrigeration & Air Conditioner (Fourth Year)

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $36.05
Supplemental Benefit Rate per Hour: $17.72

(Local #638-B)

STONE MASON - SETTER
(Ratio Apprentice of Journeyperson: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fourth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fifth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Sixth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: 100% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

(Bricklayers District Council)

TAPER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Drywall Taper - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $20.97
Supplemental Benefit Rate per Hour: $14.25

Drywall Taper - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $24.24
Supplemental Benefit Rate per Hour: $21.26

Drywall Taper - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $29.08
Supplemental Benefit Rate per Hour: $23.01

Drywall Taper - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate per Hour: $38.78
Supplemental Benefit Rate per Hour: $26.51

(Local #1974)

TILE LAYER - SETTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour:35% of Journeyperson's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour 40% of Journeyperson's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Tile Layer - Setter - Seventh 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Tile Layer - Setter - Eighth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Ninth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour:80% of Journeyperson's rate

Tile Layer - Setter - Tenth 750 Hours

Effective Period: 7/1/2022 - 6/30/2023
Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

TIMBERPERSON
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Timberperson - First Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $22.42
Supplemental Rate Per Hour: $36.22

Timberperson - Second Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $27.53
Supplemental Rate Per Hour: $36.22

Timberperson - Third Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $35.18
Supplemental Rate Per Hour: $36.22

Timberperson - Fourth Year

Effective Period: 7/1/2022 - 6/30/2023
Wage Rate Per Hour: $42.84
Supplemental Rate Per Hour: $36.22

(Local #1536)

THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
1 CENTRE STREET ROOM 1120
NEW YORK, N.Y. 10007-2341

TELEPHONE: (212) 669-3622
FAX NUMBER: (212) 669-8499

Leonard A. Mancusi
SENIOR ASSISTANT COMPTROLLER

ALAN G. HEVESI
COMPTROLLER

MEMORANDUM

November 6, 2000

To *Agency Chief Contracting Officers*

From: *Leonard A. Mancusi*

Re: *Security at Construction Sites*

Prior to the enactment of Administrative Code §6-109, security guards on construction sites were not subject to prevailing wages. Security guards under the New York State labor law are covered under §230 which provides that prevailing wages are to be paid for security guards in existing buildings. §6-109 of the Administrative Code which was enacted in 1996 closed this loophole by including all security guards working pursuant to a city contract as a prevailing wage trade.

Although some construction contract boilerplate language has been amended to include §6-109, sub-contractors performing security services have advised us that they were not aware of this provision and, since traditionally, security guards were not a covered trade on construction sites, and they were not advised by a prime contractor that they would have to pay prevailing wages, they have not been doing so.

To avoid the possibility of issuing stop payments against prime contractors for the failure of their security service sub-contractors to pay

prevailing wages, we suggest that you write to all your existing security guard sub-contractors and their primes and in the future, upon approval of a security guard sub-contractor, advise the contractors of their obligation to pay prevailing wages under §6-109 of the Administrative Code.

As always, your cooperation is appreciated.

LAM:er
ACCO.SECURITY AT SITES

Department of Design and Construction

DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

VOLUME 2 OF 3

PROJECT ID: QED1059

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC

Together With All Work Incidental Thereto

BOROUGH OF QUEENS
CITY OF NEW YORK

_____

Contractor

_____

Dated_____, 20___

_____

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY

_____

Acting Corporation Counsel

_____

Dated_____, 20___

_____

Department of Design and Construction

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE
30-30 THOMSON AVENUE
LONG ISLAND CITY, NY, 11101
TEL: 718.391.1000
WEB: www.nyc.gov/ddc

TO BE FILLED IN BY THE BIDDER:

BIDDER'S NAME:

_____

_____

BID SECURITY (CIRCLE ONE):
BID BOND / CERTIFIED CHECK

NUMBER OF ADDENDUMS RECEIVED AND ATTACHED TO BID:
____ ADDENDUMS

DDC CLIENT AGENCY:
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
PREPARED BY:
IN-HOUSE DESIGN
DATE PREPARED:
02/01/2022

VOLUME 3 OF 3

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: QED1059

SCHEDULE A SPECIFICATIONS AND REVISIONS TO STANDARD SPECIFICATIONS

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC.

TOGETHER WITH ALL WORK INCIDENTAL THERETO

BOROUGH OF QUEENS
CITY OF NEW YORK

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

ADDENDA CONTROL SHEET

BID SUBMISSION DATE/ TIME: April 18, 2023; between 8:30 AM and 11:00 AM
BID OPENING DATE/ TIME: April 18, 2023; 11:30 AM

PROJECT No. : QED1059

TITLE: **RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT BOROUGH OF QUEENS.**

ADDENDA ISSUED	NO. OF DWG	DATE	APPROVED BY: SPECS UNIT	GENERAL COUNSEL
#1 Question and Answer Revisions to the Documents	0	04/06/2023		KT

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

04/06/2023

ADDENDUM No. # 1

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

85023B0062- QED1059
RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

This addendum is issued for the purpose of amending the requirements of the Bid and Contract Documents and is hereby made a part of said Bid and Contract Documents to the same extent as though it were originally included therein.

The bidder is advised that the items listed below apply to the project:

1. **Bidders Questions and Responses to Questions:**
   Attachment A is included with this Addendum.

2. **Revisions to Documents:**
   Attachment B is included with this Addendum.

3. **Revisions to PASSPort forms:**
   No Attachment C is included with this Addendum.

Transferring Data Between Rounds of an RFX: A new document titled “Transferring Data Between Rounds of an RFX” has been added to the Documents section of the View RFx tab. Please refer to this document when an addendum has been issued. Note: Whenever an addendum is issued, the RFX item grid will be cleared. You can import the work you have already done by following the steps on this document.

DDC strongly advises vendors to finalize and submit bids 48 hours prior to due date and time. The City is not responsible for technical issues (e.g. internet connection, power outages, technology malfunction, computer errors, etc.) related to bid submissions.

If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-1041 or by email at CSB_projectinquiries@ddc.nyc.gov.

Richard Jones, PE CWI CDT
Executive Director, Specifications

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT A - BIDDERS QUESTIONS AND DDC RESPONSES

None

No.	Bidders Questions	DDC Responses
1	Would you release the list of plan holders for this project, please? I appreciate it!	Please refer to Attachment B of this Addendum

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT B – REVISIONS TO THE DOCUMENTS

A) VOLUME 3 OF 3:

1) Revised Specifications and Standards of New York City

2) Revised R-Pages

3) Revised I-Pages – Added Section 6.39.

B) Added Planholder list

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT C – REVISIONS TO PASSPORT FORMS

This Addendum initiates Round 2 of the procurement.

Please note that numbering of addenda is independent of rounds.

Questionnaire Changes:

None.

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

ADDENDA CONTROL SHEET

BID SUBMISSION DATE/ TIME: April 18, 2023; between 8:30 AM and 11:00 AM
BID OPENING DATE/ TIME: April 18, 2023; 11:30 AM

PROJECT No. : QED1059

TITLE: **RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT BOROUGH OF QUEENS.**

ADDENDA ISSUED	NO. OF DWG	DATE	APPROVED BY: SPECS UNIT	GENERAL COUNSEL
#1 Question and Answer Revisions to the Documents	0	04/06/2023		
#2 Question and Answer Revisions to the Documents	0	04/07/2023		KT

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

04/07/2023

ADDENDUM No. # 2

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

85023B0062- QED1059
RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

This addendum is issued for the purpose of amending the requirements of the Bid and Contract Documents and is hereby made a part of said Bid and Contract Documents to the same extent as though it were originally included therein.

The bidder is advised that the items listed below apply to the project:

1. **Bidders Questions and Responses to Questions:**
   Attachment A is included with this Addendum.

2. **Revisions to Documents:**
   Attachment B is included with this Addendum.

3. **Revisions to PASSPort forms:**
   No Attachment C is included with this Addendum.

Transferring Data Between Rounds of an RFX: A new document titled “Transferring Data Between Rounds of an RFX” has been added to the Documents section of the View RFx tab. Please refer to this document when an addendum has been issued. Note: Whenever an addendum is issued, the RFX item grid will be cleared. You can import the work you have already done by following the steps on this document.

DDC strongly advises vendors to finalize and submit bids 48 hours prior to due date and time. The City is not responsible for technical issues (e.g. internet connection, power outages, technology malfunction, computer errors, etc.) related to bid submissions.

If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-1041 or by email at CSB_projectinquiries@ddc.nyc.gov.

Richard Jones, PE CWI CDT
Executive Director, Specifications

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT A - BIDDERS QUESTIONS AND DDC RESPONSES

None

No.	Bidders Questions	DDC Responses
1	See sheet SW-5 in volume 3 of specification book. Please confirm under what item do we get paid for the pavement keys Type A & Type B-1 called out?	Cost will be deemed included in the prices bid for all pavement restoration items as mentioned in SW-6, Volume 3 of specification book.
2	See sheet SW-5 in volume 3 of specification book. Please confirm pavement keys Type A & Type B-1 are per NYCDOT std details of construction sheet H-1055.	Yes, Confirmed
3	See sheet 4 watermain plan. Please confirm under what bid item do we get paid for the “Boundary valve” shown at Hillside Ave. & Hollis Court Blvd. Intersection	Will be Paid under ITEM 61.11DMM12 and ITEM 61.12DMM12
4	Please confirm that we are allowed to use minority suppliers besides minority subcontractors	The use of minority suppliers is allowed, but only M/WBE subcontractors in the Online Director of NYC Certified Businesses will count towards M/WBE participation.
5	Item 54.12CS Cleaning of Drainage Structures – 650 CY is not shown in the contract drawings. How many structures make up this 650 CY? How many CY per structure? Please advise or show in the plans what structures need to be cleaned.	Please read SECTION 54.12; CLEANING OF DRAINAGE STRUCTURES of NYCDEP Standard Sewer and Water Main Specifications, to be followed for the structures and measurement to be considered under Item number 54.12CS.

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT B – REVISIONS TO THE DOCUMENTS

A) VOLUME 3 OF 3:

1) Removed old version VOL3 from Addendum1. ("QED1059 Volume 3 Addendum1" supersedes "QED1059 Volume 3")

DDC PROJECT #: QED1059

PROJECT NAME: RECONSTRUCTION OF ROADWAY AND CONSTRUCTION OF SEWERS AND WATERMAINS REPLACEMENT -BOROUGH OF QUEENS.

ATTACHMENT C – REVISIONS TO PASSPORT FORMS

This Addendum initiates Round 3 of the procurement.

Please note that numbering of addenda is independent of rounds.

Questionnaire Changes:

None.

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

ADDENDA CONTROL SHEET

BID SUBMISSION DATE/ TIME: April 21, 2023; between 8:30 AM and 11:00 AM
BID OPENING DATE/ TIME: April 21, 2023; 11:30 AM

PROJECT No. : QED1059

TITLE: **REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS ETC -BOROUGH OF QUEENS.**

ADDENDA ISSUED	NO. OF DWG	DATE	APPROVED BY: SPECS UNIT	GENERAL COUNSEL
#1 Question and Answer Revisions to the Documents	0	04/06/2023		
#2 Question and Answer Revisions to the Documents	0	04/07/2023		
#3 Question and Answer	0	04/14/2023		4/14/23

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE

04/14/2023

ADDENDUM No. # 3

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

85023B0061- QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS ETC -BOROUGH OF QUEENS.

This addendum is issued for the purpose of amending the requirements of the Bid and Contract Documents and is hereby made a part of said Bid and Contract Documents to the same extent as though it were originally included therein.

The bidder is advised that the items listed below apply to the project:

1. **Bid date is hereby postponed to 4/21/2023.**

2. **Bidders Questions and Responses to Questions:**
   Attachment A is included with this Addendum.

3. **Revisions to Documents:**
   Attachment B is included with this Addendum.

4. **Revisions to PASSPort forms:**
   No Attachment C is included with this Addendum.

Transferring Data Between Rounds of an RFX: A new document titled “Transferring Data Between Rounds of an RFX” has been added to the Documents section of the View RFx tab. Please refer to this document when an addendum has been issued. Note: Whenever an addendum is issued, the RFX item grid will be cleared. You can import the work you have already done by following the steps on this document.

DDC strongly advises vendors to finalize and submit bids 48 hours prior to due date and time. The City is not responsible for technical issues (e.g. internet connection, power outages, technology malfunction, computer errors, etc.) related to bid submissions.

If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-1041 or by email at CSB_projectinquiries@ddc.nyc.gov.

Richard Jones, PE CWI CDT
Executive Director, Specifications

DDC PROJECT #: QED1059

PROJECT NAME: REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS ETC -BOROUGH OF QUEENS.

ATTACHMENT A - BIDDERS QUESTIONS AND DDC RESPONSES

None

No.	Bidders Questions	DDC Responses
1	1) The following areas are missing work hours in the OCMC Traffic Stipulations: 1. Intersection of Hillside Ave and 136th Street 2. 87th Ave from 136th Street to Van Wyck Exp.	1) Please refer the Page 10 of 12- OMCC Traffic Stipulations. 2) Please refer the Page 8 of 12- OMCC Traffic Stipulations.
2	We request the missing work hours be added in a future addendum.	Refer to response 1 above.
3	The contract drawings do not give us borings. The borings provided to us in volume 3 of the specifications book do not give us pavement cores. We would like to know what the existing pavement in all three locations is composed of. Please provide pavement cores for all three locations.	Boring information has been included for information only as a part of the HAZMAT report.
4	Item 4.02 AF-R is not called out in the plans, and it is not called out in the “Specific pavement restoration provisions” on volume 3 of the specification book. Please tell us specifically where we need to put 2” of asphaltic concrete wearing course. Overlay of the road from curb to curb is not called out anywhere. Are we required to do a final overlay of all roads?	Item 4.02 AF-R will be used as directed by the Engineer during Construction as necessary.
5	Volume 3 Pages JBE20 and JBE39 list a series of City Bid Items (4.02AB-R etc.) to be used as accommodation for Con Ed and Verizon: The quantity of each of these items to be used for the utilities is a small percentage (on average approximately 5%) of the overall bid quantity for the items listed on the City bid schedule. Further, when broken down by the number of locations listed, the quantity per location is minimal. This minimal amount of work at each of the listed locations will result in a higher per unit cost as opposed to the cost of these items performed in the much larger scale of quantity for the City. Can the utility accommodation items be listed separately as JB Specialty items where they can be priced accordingly?	No. Utility accommodation items will be paid via the JB Fixed Sum at the rates bid in the Bid Schedule, as noted in Section A.2.C on page JB-A5.

No.	Bidders Questions	DDC Responses
6	Item G on Page JB-A9, states the following: G. Section JB 350 is not applicable and deemed deleted. The Contractor will not be paid separately to modify means and methods around overhead utilities; those costs must be included in the prices bid for all work. Implicit in this paragraph is that the modification of means and methods around overhead utilities has a cost attached to it. Pages 61-67 (Sheet JB U27 – JB U33) of the contract drawings, contains the location of Verizon Overhead Mainline Plans which we are to assume is where Verizon is requesting our work methods to be modified to work around their facilities. Historically this cost has always been borne by the utility companies, Section G now directs these costs to be included in the prices bid for all work, since the only prices subject to bidding are the City items, are we to include the costs associated to accommodate the overhead utilities into the City Items?	Correct, the costs necessary to perform the City work must be included in the rates bid for the City work.
7	Volume 3 CON EDISON JOINT BIDDING SCOPE OF WORK Page JB-E11, TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES Please provide details of the type of relocation required for this item, is the system to be moved horizontally or vertically?	Please refer to the JB Specifications. JB 401 covers hand excavation around utilities and supporting and protecting utilities in preparation of horizontal and vertical relocation paid for under other items.
8	There is an item for 2" asphalt (overlay item) and this covers enough work for 4,000 lf of water mains. I do not see any notes for overlay in the contract. Is this a "just in case item" or are we missing it in the contract drawings/bid book.	2” asphalt (overlay Item) will be used as directed by the Engineer during Construction as necessary.

DDC PROJECT #: QED1059

PROJECT NAME: REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS ETC -BOROUGH OF QUEENS.

ATTACHMENT B – REVISIONS TO THE DOCUMENTS

1) Planholder's List added

DDC PROJECT #: QED1059

PROJECT NAME: REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS ETC -BOROUGH OF QUEENS.

ATTACHMENT C – REVISIONS TO PASSPORT FORMS

This Addendum is included within Round 3 of the procurement.

Please note that numbering of addenda is independent of rounds.

Questionnaire Changes:

None.

VOLUME 3 OF 3

TABLE OF CONTENTS

(NO TEXT ON THIS PAGE)

SPECIFICATIONS AND STANDARDS OF NEW YORK CITY

The following specifications and standards are incorporated into the Contract Documents by reference as though fully set forth herein.

1. Standard Specifications and Drawings for New York City Department of Transportation (NYCDOT) are available:
   Online at: http://www1.nyc.gov/site/ddc/resources/publications.page
   a. NYC DOT Standard Highway Specifications
   b. NYC DOT Standard Details of Construction
   Online at: https://www1.nyc.gov/html/dot/html/about/dotlibrary.shtml#spec
   c. NYC DOT Division of Street Lighting Standard Drawings
   d. NYC DOT Standard Specifications for Traffic Signals
   e. NYC DOT Standard Drawings for Traffic Signals
   For purchase between 9:00 A.M. and 3:00 P.M. Bid Window, at 55 Water St., Ground Floor, NYC, N.Y. 10041. Tel. (212) 839-9435.
   f. NYC DOT Division of Street Lighting Specifications
2. The 2010 Americans with Disabilities Act (ADA) Standards; available online at: https://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm
3. The 2013 Public Rights-of-Way Accessibility Guidelines (PROWAG); available online at: https://www.access-board.gov/files/prowag/PROW-SUP-SNPRM-2013.pdf
4. Standard Specifications and Drawings for New York City Department of Environmental Protection (NYCDEP) are available online at: http://www1.nyc.gov/site/ddc/resources/publications.page
   a. NYC DEP Standard Sewer and Water Main Specifications, August 8, 2022
   b. NYC DEP Instructions to Architect/Engineers Specifications for Concrete, January 1992
   c. NYC DEP General Specification 11-Concrete, November 1991
   d. NYC DEP Sewer Design Standards, March 27, 2023
   e. NYC DEP Water Main Standard Drawings, December 2020
   f. Specifications for Trunk Main Work, July 2014
   g. Standard Green Infrastructure Specifications September 1,2021
5. Standard Design and Guidelines for Green Infrastructure Practices, latest version, available only online at: https://www1.nyc.gov/assets/dep/downloads/pdf/water/stormwater/green-infrastructure/green-infrastructure-standard-designs.pdf
6. Standard Specifications and Drawings for New York City Fire Department Communications facilities of New York City are available online at https://www1.nyc.gov/assets/fdny/downloads/pdf/about/fdny-plant-operations-standard-drawings-specifications.pdf or for pick up from the FDNY Facilities Management Bureau, Plant Operations Engineering, 316 Sgt. Beers Avenue Cluster 1 Box 16, Fort Totten, N.Y. 11359. Contact: Mr. Ed Durkin, Tel. (718) 281-3933
7. Tree Planting Standards of the City of New York Parks & Recreation are available at the following Department of Parks & Recreation website: http://www.nycgovparks.org/pagefiles/53/Tree-Planting-Standards.pdf
8. Standards and Specifications for Utility Joint Bid work are available online at http://www1.nyc.gov/site/ddc/resources/publications.page
   a. CET SPECIFICATIONS AND SKETCHES, dated November 2010
   b. JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR MANHATTAN, Issued August 1, 2005

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT (INCLUDING GENERAL CONDITIONS RELATED TO ARTICLE 22 – INSURANCE)

PART I. REQUIRED INFORMATION

INFORMATION FOR BIDDERS SECTION 26 BID SECURITY The **Contractor** shall obtain a bid security in the amount indicated to the right.	Required provided the TOTAL BID PRICE set forth on the Bid Form is $1,000,000. or more. Certified Check: 2% of Bid Amount or Bond: 10% of Bid Amount
INFORMATION FOR BIDDERS SECTION 26 PERFORMANCE AND PAYMENT BONDS The **Contractor** shall obtain performance and payment bonds in the amount indicated to the right.	Required for contracts in the amount of $1,000,000 or more. Performance Security and Payment Security shall each be in an amount equal to 100% of the Contract Price.
INFORMATION FOR BIDDERS DEPARTMENT OF DESIGN AND CONSTRUCTION SAFETY REQUIREMENTS The **Contractor** shall provide the safety personnel as indicated to the right.	■ Project Safety Representative ■ Dedicated, full-time Project Safety Manager
CONTRACT ARTICLE 14 DATE FOR SUBSTANTIAL COMPLETION The **Contractor** shall substantially complete the **Work** in the number of calendar days indicated to the right.	See Page SA-4
CONTRACT ARTICLE 15 LIQUIDATED DAMAGES If the **Contractor** fails to substantially complete the **Work** within the time fixed for substantial completion plus authorized time extensions or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the amount indicated to the right.	$7000 for each consecutive calendar day over substantial completion time
CONTRACT ARTICLE 17. SUB-CONTRACTOR The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price indicated to the right.	Not to exceed 35 % of the **Contract** price

CONTRACT ARTICLE 21. **RETAINAGE** The **Commissioner** shall deduct and retain until the substantial completion of the **Work** the percent value of the **Work** indicated to the right.	5 % of the value of the **Work**
CONTRACT ARTICLE 22. **(Per Directions Below)**	See pages SA-5 through SA-12
CONTRACT ARTICLE 24. **DEPOSIT GUARANTEE** As security for the faithful performance of its obligations, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to the percentage of the **Contract** price indicated to the right.	1% of **Contract** price
CONTRACT ARTICLE 24. **PERIOD OF GUARANTEE** Periods of maintenance and guarantee other than the period set forth in Article 24.1 are indicated to the right.	Eighteen (18) Months, excluding Trees Twenty-four (24) Months for Tree Planting
CONTRACT ARTICLE 75. **COMPENSATION TO BE PAID TO CONTRACTOR** The **City** shall pay and the **Contractor** shall accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein**,** the total sum **shown in the column to the right,** being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract.**	Amount for which the **Contract** was Awarded: _____ _____ Dollars ($_____)
CONTRACT ARTICLE 79. **PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT**	See M/WBE Utilization Plan in PASSPort

STANDARD HIGHWAY SPECIFICATIONS **SECTION 6.40** **LIQUIDATED DAMAGES FOR ENGINEER'S FIELD OFFICE** If the Contractor fails to satisfactorily provide the field office and all equipment specified in **Section 6.40 - Engineer's Field Office**, and/or if a cited deficiency exceed seventy two (72) hours after notice from the Engineer in writing, or is permitted to recur, liquidated damages will be assessed in the amount specified herein for each subsequent calendar day or part thereof that a cited deficiency resulting in nonpayment, as described in **Section 6.40.5**, is not corrected.	$ 500.00 for each calendar day of deficiency
STANDARD HIGHWAY SPECIFICATIONS **SECTION 6.70** **LIQUIDATED DAMAGES FOR MAINTENANCE AND PROTECTION OF TRAFFIC**	$ 250.00 for each instance of failure to comply with the Maintenance and Protection of Traffic requirements within three (3) hours after written notice from the Engineer. $ 500.00 for each and every hour of failing to open the entire width of roadway to traffic the morning following a night/weekend work operation.
STANDARD HIGHWAY SPECIFICATIONS **SECTION 7.13** **LIQUIDATED DAMAGES FOR MAINTENANCE OF SITE** If the Contractor fails to comply, within three (3) consecutive hours after written notice from the Engineer, with the requirements of **Section 7.13 - Maintenance of Site**, the Contractor shall pay to the City of New York, until such notice has been complied with or rescinded, the sum specified above per calendar day, for each instance of such failure, as liquidated damages and not as a penalty, for such default.	$ 1400.00 for each calendar day, for each occurrence

Date for Substantial Completion (Reference: Article 14)

The Contractor shall substantially complete the Work within the Final Contract Duration determined in accordance with the terms and conditions set forth herein.

The Base Contract Duration for this project is 730 consecutive calendar days ("ccds").

The Final Contract Duration shall be the Base Contract Duration when a check mark is indicated before the word "NO", below, and shall be the Base Contract Duration adjusted by the table set forth below when a check mark is indicated before the word "YES", below.

√ YES _____ NO

When the Final Contract Duration is indicated above to be adjusted by the table below, the table may increase the Base Contract Duration depending on the date of scheduled substantial completion to avoid a scheduled substantial completion of the Work during the winter months. The date of scheduled substantial completion shall be determined by adding the Base Contract Duration to the date specified to commence work in the written Notice to Proceed. The Final Contract Duration shall then be determined as follows:

(a) Find the row that corresponds to the month of substantial completion based on the Base Contract Duration added to the date specified to commence work in the written Notice to Proceed.

(b) Find the number of days to be added to the Base Contract Duration in the table below. Add that number of days to the Base Contract Duration to obtain the Final Contract Duration in consecutive calendar days.

Month of Substantial Completion based on the Base Contract Duration	Number of Days of adjustment
January	150
February	120
March	90
April	60
May	30
June	0
July	0
August	0
September	0
October	0
November –December 15	0
December 16 – December 31	180

In addition, should Item No. 9.30, "Storm Water Pollution Prevention," exist in the Contract and the required Storm Water Pollution Prevention Plan (SWPPP) does not conform to NYSDEC's recommended Standards, an additional 60 ccd shall be added to the above Final Contract Duration.

(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART II. TYPES OF INSURANCE, MINIMUM LIMITS AND SPECIAL CONDITIONS

Note: All certificate(s) of insurance submitted pursuant to Contract Article 22.3. 3 must be accompanied by a Certification by Broker consistent with Part III below and include the following information:

- **For each insurance policy, the name and NAIC number of issuing company, number of policy, and effective dates;**
- **Policy limits consistent with the requirements listed below;**
- **Additional insureds or loss payees consistent with the requirements listed below; and**
- **The number assigned to the Contract by the City (in the "Description of Operations" field).**

Insurance indicated by a blackened box (■) or by X in a □ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
■ Commercial General Liability Art. 22.1.1	The minimum limits shall be $ 3,000,000 per occurrence and $ 6,000,000 per project aggregate applicable to this **Contract.** Additional Insureds: 1. City of New York, including its officials and employees, with coverage at least as broad as ISO Form CG 20 10 and CG 20 37, 2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the **Contract** requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager), 3. Consolidated Edison 4. Verizon 5. National Grid

■ Workers' Compensation Art. 22.1.2 ■ Disability Benefits Insurance Art. 22.1.2 ■ Employers' Liability Art. 22.1.2 ☐ Jones Act Art. 22.1.3 ☐ U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.3	Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction. **Note:** The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (4) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance. Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. Law. ☐ Additional Requirements:
☐ Builders' Risk Art. 22.1.4	☐ Required: 100% of total bid amount ☐ Required: 100 % of total bid amount for Item(s): **Contractor** the Named Insured; the **City** both an Additional Insured and one of the loss payees as its interests may appear. If the **Work** does not involve construction of a new building or gut renovation work, the **Contractor** may provide an installation floater in lieu of Builders Risk insurance. Note: Builders Risk Insurance may terminate upon **Substantial Completion** of the **Work** in its entirety.

■ Commercial Auto Liability Art. 22.1.5	$ 2,000,000 per accident combined single limit If vehicles are used for transporting hazardous materials, the **Contractor** shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90 Additional Insureds: City of New York, including its officials and employees.
☐Contractors Pollution Liability Art. 22.1.6	$ 5,000,000 per occurrence $ 5,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Marine Protection and Indemnity Art. 22.1.7(a)	$_____ each occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Hull and Machinery Insurance Art. 22.1.7(b)	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

☐ Marine Pollution Liability Art. 22.1.7(c)	$ 1,000,000 per occurrence $ 1,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees. 2. _____ 3. _____
[OTHER] Art. 22.1.8 ☐ Railroad Protection Liability Policy (ISO-RIMA or equivalent form) approved by Permittor covering the work to be performed at the designated site and affording protection for damages arising out of bodily injury or death, physical damage to or destruction of property, including damage to the Insured's own property and conforming to the following: • Policy Endorsement CG 28 31 - Pollution Exclusion Amendment is required to be endorsed onto the policy when environmental-related work and/or exposures exist. • Indicate the Name and address of the Contractor to perform the work, the Contract # and the name of the railroad property where the work is being performed and the Agency Permit. • Evidence of Railroad Protective Liability Insurance, must be provided in the form of the Original Policy. A detailed Insurance Binder (ACORD or Manuscript Form) will be accepted pending issuance of the Original Policy, which must be provided within 30 days of the Binder Approval.	$ 2,000,000 per occurrence $ 6,000,000 annual aggregate Named Insureds: 1. New York City Transit Authority (NYCTA), the Manhattan and Bronx Surface Transit Operation Authority (MaBSTOA), the Staten Island Rapid Transit Operation Authority (SIRTOA), MTA Capital Construction Co., the Metropolitan Transportation Authority (MTA) including its subsidiaries and affiliates, and the City of New York (as Owner) and all other indemnified parties.

[OTHER] Art. 22.1.8

■ Professional Liability

A. The Contractor's Professional Engineer shall maintain and submit evidence of Professional Liability Insurance in the minimum amount of $1,000,000 per claim. The policy or policies shall include an endorsement to cover the liability assumed by the Contractor under this Contract arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Professional Engineer or anyone employed by the Contractor's Professional Engineer.

B. Claims-made policies will be accepted for Professional Liability Insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two (2) years. If available as an option, the Contractor's Professional Engineer shall purchase extended reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.

[OTHER] Art. 22.1.8 ■ Engineer's Field Office **Section 6.40, Standard Highway Specifications**	Fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of $40,000

[OTHER] Art. 22.1.8

☐ The Following Additional Insurance Must Be Provided:

Umbrella/Excess Liability Insurance - The Contractor shall provide Umbrella/Excess Liability Insurance in the minimum amount of $10,000,000 per Occurrence and $10,000,000 in Aggregate. The policy terms and condition should be at least as broad as the underlying policies. The underlying policies should comply with the insurance provision as outlined by the contract. Defense cost should be in addition to the limit of liability. The City of New York, including its officials and employees, should be included as additional insured as respects to the noted project.

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART III. CERTIFICATES OF INSURANCE

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

(1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

(2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

CITY OF NEW YORK

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

_____
[Name of broker or agent (typewritten)]

_____
[Address of broker or agent (typewritten)]

_____
[Email address of broker or agent (typewritten)]

_____
[Phone number/Fax number of broker or agent (typewritten)]

_____
[Signature of authorized official, broker, or agent]

_____
[Name and title of authorized official, broker, or agent (typewritten)]

State of ……)
) ss.:
County of ……)

Sworn to before me this _____ day of _____, 20____

_____
NOTARY PUBLIC FOR THE STATE OF _____

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)

PART IV. ADDRESS OF COMMISSIONER

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the Commissioner (e.g., notices, filings, or submissions), such documents must be sent through email to insurance@ddc.nyc.gov. Hard copy documents of the above requirement are no longer required.

(NO FURTHER TEXT ON THIS PAGE)

R - PAGES

REVISIONS TO STANDARD SPECIFICATIONS

NOTICE

The Specification Bulletin(s) ("SB(s)") referenced in this Section (R-Pages) may consist of revisions to the following Standard Specifications:

- New York City Department of Transportation ("NYC DOT") Standard Highway Specifications, dated 5/16/2022;
- New York City Department of Environmental Protection ("NYC DEP") Standard Sewer and Water Main Specifications, dated 8/8/2022; and
- NYC DEP Specifications for Trunk Main Work, dated 7/2014.

The SB(s) modify and supersede portions of the applicable Standard Specifications. The provisions contained in this Contract's I-Pages, S-Pages and SW-Pages may further modify the applicable Standard Specifications.

The following active SB(s) are included as part of this contract:

- *SB 22-006 – INCREMENTAL COST NEAR TRANSIT FACILITIES*
- *SB 23-001 – SEWER DESIGN STANDARDS*

The SB(s) are available online at:
http://www1.nyc.gov/site/ddc/resources/specification-bulletins.page

(NO FURTHER TEXT ON THIS PAGE)

S - PAGES

GENERAL AND SPECIAL PROVISIONS:

(A) GENERAL PROVISIONS
(B) HIGHWAY PROJECT SPECIFIC PROVISIONS
(C) SEWER & WATER MAIN PROJECT SPECIFIC PROVISIONS
(D) GREEN INFRASTRUCTURE PROVISIONS

NOTICE

THE PAGES CONTAINED HEREIN (S-PAGES) ARE GENERAL AND SPECIAL PROVISIONS THAT APPLY TO THE WORK AND ARE PART OF THE CONTRACT DOCUMENTS.

(NO TEXT ON THIS PAGE)

TABLE OF CONTENTS

(A) GENERAL PROVISIONS

(B) HIGHWAY PROJECT SPECIFIC PROVISIONS

(NO TEXT)

SKETCHES / DRAWINGS

(NO TEXT)

(C) SEWER & WATER MAIN PROJECT SPECIFIC PROVISIONS

(NO TEXT)

(D) GREEN INFRASTRUCTURE PROVISIONS

(NO TEXT)

(NO TEXT ON THIS PAGE)

(A) GENERAL PROVISIONS

A. LINES AND GRADES. The Contractor must furnish lines and grades in accordance with Section 1.06.27 of the NYCDOT Standard Highway Specifications, except that survey controls established for this project may no longer exist and the Contractor will be required to re-establish the survey control information using official Borough Survey Control Monuments and Bench Marks, where they exist. The Contractor must check with Topographic Section of the Borough President's Office as to the reliability and accuracy of the data to be used for lines and grades.

B. SPECIFIC TRAFFIC STIPULATIONS. Under this contract, the Contractor must perform the work in strict accordance with the requirements of Section 6.70 in the Standard Highway Specifications, specific traffic stipulations as called for on the plans, Office of Construction Mitigation and Coordination (OCMC) Traffic Stipulations attached to the end of these Special Provisions, and the directions of the Engineer. In case of a conflict, the Engineer's decision will be final.
The Contractor must plan and schedule the work in order to accommodate all special events listed in the NYCDOT Special Events Annual Calendars. The calendars are available at the following link:

https://nycdot.sharepoint.com/:f:/s/publicshare/Ei2XN4G99_JFkdrtjD_cJ0QBtSPr2xhVrApcqAs1KSLpeA?e=j276PF

In addition, the cost of compliance with requirements of the OCMC Traffic Stipulations, unless otherwise provided for, will be deemed included in the prices bid for all scheduled items..

C. HOLIDAY CONSTRUCTION EMBARGO. A special Holiday Construction Embargo will be in effect on the Friday of the week preceding Thanksgiving Day week from 6:00 AM to 11:59 PM and again from the Monday of Thanksgiving Day week from 6:00 AM through January 2, at 11:59 PM. Roadway and sidewalk construction activities will be restricted during the embargo period on the streets listed below*.

Any permits issued prior to the date of this notice, for work during this embargo period on the streets listed below* which do not already have the permit stipulation "410" are hereby suspended for the period noted above. All permittees must comply with this embargo unless a special waiver is granted by OCMC. Waiver requests must be filed at least thirteen days before Thanksgiving Day, in the Permit Office by filing a "Request for Roadway/Sidewalk Permits During "Embargo Periods" and submitting supporting documentation. Waiver requests should only be submitted for critical reasons for a specific project. If a waiver is granted, the applicant will be notified so they can apply for the approved permits. Waivers **are not** required for ongoing Building Construction Activity Permits which already include the "410" permit stipulation. Waiver request forms may be obtained at any Permit Office or on the Department of Transportation's website at:
http://www.nyc.gov/html/dot/downloads/pdf/holidayembapp.pdf
Prior to this embargo period all necessary measures must be taken so that all roadways and sidewalks are in proper condition to allow for the expeditious and safe movement of vehicular, bicycle and pedestrian traffic. Tool carts, cable reels, containers, and material stored on roadways must be removed during the embargo period.

The opening of utility access covers is prohibited on any of the streets noted below** between the hours of 6:00 AM and midnight unless the utility or Contractor files for an Emergency Authorization Number as required by Section 2-07 of the Department of Transportation's Highway Rules. The planned opening of utility access covers may occur during the hours of 12:01 AM and 5:59 AM where no authorization number is required.

Temporary restoration of the streets and sidewalks and removal thereof, if required for the Holiday Embargo period, will be paid for under the appropriate scheduled items.

No extension of time due to the shutdown period will be granted to the Contractor for completion of the work.

*** Please note that this embargo only applies to NYCDOT construction permits.**
**** List of street and maps of the affected locations are available by borough on the Department of Transportation's website at: http://www.nyc.gov/html/dot/html/motorist/trafalrt.shtml**

D. CONTRACT ITEMS THAT INCLUDE BACKFILL AS A PART OF THEIR WORK. The following will pertain to all contract items that have backfill as a part of their work: Backfilling will comply with Subsection 4.11.3 of the Standard Specifications and no additional payment will be made for any Highway or Street Lighting work item requiring Contractor to furnish additional fill material to meet these requirements when backfilling.

E. ACCELERATED PROJECT SCHEDULE AND COMBINATION OF STAGES. Contractor will plan and/or stage his/her work schedule using all hours/days available. Contractor is advised that all applicable unit prices will include, for the purpose of this contract, all overtime costs, premium time costs, shift differentials required to complete construction within the specified "Time(s) of Completion" stipulated in this contract.

Contractor will be permitted to accelerate this project, to combine stages and/or work sequences. Any such changes will be shown in the construction schedule, to be furnished in accordance with the General Provisions of the Standard Specifications.

F. DISPOSAL OF EXCESS EXCAVATED MATERIAL. All excess excavated material, with the exception of contaminated material, will become the property of the Contractor and will be properly disposed of away from the site, at the Contractor's expense. Contaminated material will be disposed of separately in accordance with contract requirements.

G. NO EXTENSION OF TIME FOR WINTER SHUT-DOWN. Where the Contractor's approved work schedule for installing sidewalk, curb, roadway base and/or pavement falls within the winter period of December 1st through April 1st, the Contractor will NOT be granted an extension of time for completion of this contract due to the winter shut-down period, unless otherwise provided in Schedule A.

H. PRIVATE UTILITY HARDWARE ADJUSTMENTS. will be performed by the owning utility company or its agent, at its expense. The Contractor must notify the utility company 72 hours prior to start of work at each location where its hardware requires adjustment.

I. SURVEY MONUMENTS. When working in the vicinity of survey monument the Contractor will hand excavate per Item 8.02 AB-S, 8.02 A and 8.02 B (as applicable), at City Survey Monuments, for a distance of five (5) feet around each monument, as directed by the Engineer.

J. RESTORATION OF ADJACENT AREAS. The Contractor will be required to remove all form work. In planting strip areas, the Contractor will be required to restore areas damaged as a result of the Contractor's operations, to the satisfaction of the Engineer, with sod. The Contractor will also, as directed by the Engineer, make safe adjacent areas to the Contractor's work, such as: restoring missing or damaged pavement markings that were removed or damaged as a result of the Contractor's operations (as per requirements of Section 6.44 in the Standard Specifications); resetting granite blocks in tree pits; and, applying binder mixture (Item 4.02 CA or as applicable) where badly broken sidewalk or curb may create a dangerous condition just outside his area of operation, where and when directed by the Engineer.

All restoration work must be performed to the satisfaction of the Engineer.

K. FLAGGERS. The Contractor is notified that wherever the Item No. "6.52" and words "flagger", "flagperson" and "flagman" are used in the contract documents and drawings it will mean the Item No. "6.52 CG" and the words "Crossing Guard", respectively. The Contractor is advised that until the Comptroller of the City of New York sets a prevailing wage rate for crossing guards, there are no prevailing wage rates for crossing guards.

For projects that require compliance with the Davis-Bacon Act, wherever the Item No. "6.52" and words "flagger", "flagperson" and "flagman" are used in the contract documents and drawings it will mean the Item No. "6.52 FED" and the words "Uniformed Flagperson", respectively.

L. FUEL COST. The Contractor is notified that the fuel cost per gallon used in the formula under Sub-Article 26.2.8 of the Standard Construction Contract for Extra Work will be derived from the fuel price index for the United States East Coast published weekly by the United States Energy Information Administration ("USEIA"), and available on its website at **http://www.eia.gov/petroleum/gasdiesel/.** The USEIA-published cost per gallon for the applicable fuel on the East Coast for the week in which the first day of each calendar quarter during the contract term occurs (i.e., January 1st, April 1st, July 1st and September 1st) will be used in the reimbursement formula for all **Extra Work** invoiced that was performed during that calendar quarter. Should the USEIA stop publishing this fuel price index, the fuel cost per gallon will be determined by reference to a substitute index to be agreed upon by the Contractor and the City.

M. NYCDPR CONSTRUCTION PERMITS AND OTHER REQUIREMENTS.

1. At least thirty (30) days prior to the upcoming start of construction at or near the New York City Department of Parks and Recreation (NYCDPR) land , the Contractor is required to issue a notice to NYCDPR about the start of construction activity. At least 30 days in advance of the Order to Work Date, the Contractor must notify the New York City Department of Parks and Recreation (NYCDPR) of the upcoming start of construction by emailing interagency@parks.nyc.gov.

2. Parks Construction Permits are required for all work on Parkland. Construction Permits may also be required for work on sidewalks adjacent to Parks properties or other areas maintained by NYCDPR such as Greenstreets depending on the scope of work. It is the Contractor's responsibility to coordinate with Parks via email at **interagency@parks.nyc.gov** to establish whether Construction Permits are required for the contract scope of work.

3. The Contractor will not be permitted to store, stage, stockpile, barricade, lay down construction materials or equipment, or otherwise impede access to Parkland, Greenstreets, or sidewalks in the right-of-way fronting Park properties unless such permission is granted by NYCDPR via issuance of a Parks Construction Permit.

4. The Contractor must obtain the necessary Parks Construction Permit from NYCDPR prior to the start of work on Parkland or areas under Parks' jurisdiction. The Construction Permit application is found online at https://www.nycgovparks.org/permits/construction.

5. When no Construction Permit is required, the contactor must notify Parks at interagency@parks.nyc.gov at least one week in advance of any construction adjacent to Greenstreets or in the right-of-way fronting Parks properties to allow for coordination as needed.

6. The Contractor is responsible for the protection of any Greenstreets, sidewalks, and other landscape features under NYCDPR jurisdiction that are adjacent to or enclosed by the construction area, including hardscape, landscape, shrubs, and trees. Any areas and features disturbed or damaged during construction activity are the responsibility of the Contractor to restore and repair.

7. Many NYCDPR properties are indicated on the publicly accessible online mapping resource of the New York City Department of Information Technology and Telecommunications (DOITT) at **http://maps.nyc.gov/doitt/nycitymap**/. However, the map is not exhaustive, and Contractors should confirm Parks properties in the vicinity of their work with NYCDPR.

8. The Contractor must take necessary precautions to prevent interference with or damage to utilities or other facilities during construction. The cost of all work connected with

maintaining and protecting utilities affected by the work be borne by the Contractor and the cost will be deemed included in the price bid for the various items in the contract.

9. In the event the Contractor damages an existing utility or interrupts utility service, the Contractor will immediately notify its owner and the Engineer and must commence repair/replacement work as instructed by the Engineer.

10. In the event the Contractor causes an interruption in utility service, the Contractor will immediately arrange for service to be restored and may not cease the repair work until service is restored. The Contractor will not continue work until the service is restored, unless otherwise directed by the Engineer. All corrective utility work will be acceptable to the engineer and the subject utility owner.

11. If any utility service or connection of unknown ownership is encountered during construction which appears to enter or serve Parkland, Contractor must contact Parks at **interagency@parks.nyc.gov** to inquire if Parks is the owner of such utility.

N. START OF CONTRACT WORK. The Contractor is notified that a Notice To Proceed (NTP) date will be issued for work to commence within 21 to 30 Days of Contract Registration.

O. STANDARD WORKING HOURS: In absence of OCMC Traffic Stipulations, Section 1.06.23 (P) of NYC DOT STANDARD HIGHWAY SPECIFICATIONS regarding standard working hours is to be followed is to be followed. Work performed outside the standard working hours must be pre-approved by NYC DDC.

P. TREE BARRIERS. The Contractor will furnish, install, maintain and subsequently remove temporary Protective Tree Barriers. Protective Tree Barriers will be Type B, unless otherwise directed by the Engineer, and will be constructed and installed as shown on the Protective Tree Barrier sketch in Department Of Transportation, Standard Highway Details Of Construction, Drawing No. H-1046A, as directed by the Engineer, and in accordance with Department of Parks and Recreation requirements.

Price of the tree barriers must be included in the in the unit prices bid for all scheduled items.

Q. UTILITIES. All utility locations and invert elevations are not guaranteed, nor is there any guarantee that all existing utilities, whether functional or abandoned within the project area are shown.

R. HOUSE CONNECTIONS. All existing house connections will be maintained and supported during construction. The Contractor will replace any existing house connection damaged as a result of the Contractor's construction operations as ordered by the Engineer at no cost to the City.

S. STREET LIGHT AND TRAFFIC SIGNAL. The Contractor is responsible for any damage to the existing street lighting and traffic signal equipment, including underground conduits and the safety of both pedestrian and vehicular traffic for the duration of the contract.

Should any conduits, cables or foundations need repair due to the Contractor's negligent operations during construction, all work will be performed according to NYCDOT Bureau of Traffic's Standard Drawings and Specifications and City of New York DOT System Engineering Specifications (dated November 2013) at the sole expense of the Contractor.

It is the Contractor's responsibility to secure an approved electrical Contractor to perform all traffic signal work (if any). For list of approved electrical Contractors, contact Bjorn Seedan or James Celentano, New York City Department of Transportation at (212) 839-3790.

T. SAW CUT. The Contractor is advised that where the existing roadway pavement is designated to be replaced from curb to curb, then no full depth saw cutting of pavement for sewer and water main trenches will be required, except at the limits of full width pavement restoration. No separate or additional payment will be made for any saw cutting.

U. PRE-CONSTRUCTION STAGE. The Contractor is advised that the Base Contract Duration (consecutive calendar days "ccds") must also include pre-construction stage from the Notice To Proceed date. During this stage the Contractor is required to submit the necessary shop drawings, obtain all permits and submit the health and safety plan for review and approval. The Engineer's field office will also need to be established during this pre-construction stage period. Failure to comply with the pre-construction stage requirements may result in assessing liquidated damages to the Contractor for everyday beyond the pre-construction stage duration. The liquidated damage will be of equivalent value as identified in the Schedule A for work beyond the construction completion date.

V. EXISTING SEWERS, WATER AND APPURTENANCE. The Contractor is notified that at some locations there may exists sewers, manholes, water mains, etc., which are to remain undisturbed and are in close proximity to the line of the proposed work. The Contractor exercise extreme care, minimize the trench width of the proposed sewers and take all necessary precautions in placing sheeting and during excavation of the trenches to prevent any damage to the existing structures, pavement, curbs, and sidewalks that are to remain while working adjacent to them. The Contractor maybe restricted to use wood sheeting at certain critical locations as directed by the Engineer. Should any damage occur to any portion of the existing structures that are to remain due to the Contractor's operations, the Contractor will make all repairs to the existing structures to the satisfaction of and as directed by the Engineer. The cost of such repair will be borne by the Contractor, at no cost to the City. Additional cost to use wood sheeting specifically to ensure integrity of existing sewer structures will be deemed included in all bid items for work.

W. RECONNECTING EXISTING SEWERS TO NEW MANHOLES. If there are locations on the contract plans, where the Contractor is required to reconnect all existing sewers to the proposed manholes in this contract. The said manholes will be fabricated to provide openings for the existing sewers at the specified invert elevations as shown on the contract drawings. The cost of reconnecting existing sewer pipes to new manholes, including concrete collar with steel reinforcements and/or grouting around the existing sewer pipes at the openings and all work necessary to complete the pipe reconnection, to the satisfaction of the Resident Engineer will be deemed included in the prices bid for all items of work. No additional payment will be made.

[ARTICLE "X" IS ONLY APPLICABLE IF ITEMS FOR VIBRATION MONITORING ITEM NO. 76.31 IS IN THE BID SCHEDULE]

X. VIBRATION MONITORING. In case of structures requiring vibration monitoring, the Contractor, in addition to Continuous Real Time Monitoring for Vibrations as determined in the Construction Report must provide Continuous Real Time Monitoring for Vibrations of existing buildings/structures adjacent to or in the proximity of different types of construction activities being conducted including, but not limited to, installation of sheeting for construction of proposed water and sewer mains, installation of sheeting for excavation of jacking/receiving pits, direct jacking of sewers, piling work or as directed by the Engineer.

Y. CITY ASSETS. The Contractor is advised that any City owned light poles, traffic signals, street name signs, traffic signs and encumbrances including, but not limited to, underground conduit displaced as the result of the installation of the new sewers, water mains, catch basins, catch basin connections and appurtenances will be replaced in kind and as directed by the Engineer. The cost of such work will be deemed included in the prices bid for all items of work under this contract.

[ARTICLE "Z" IS ONLY APPLICABLE FOR WATERMAIN 24-INCHES AND HIGHER]

Z. "AS-BUILT" DRAWINGS FOR WATER MAINS AND APPURTENANCES 24-INCHES (600-MM.) AND LARGER: Upon the completion of the work for each Capital Project and as a condition precedent to obtaining the certificate for Substantial Completion for each Capital Project under Article 44 of the Contract, the Contractor will furnish "As-Built" drawings for water mains and appurtenances 24-inches and larger to the City. The Contractor will prepare and submit the "As-Built" record drawings to the Engineer for approval. Approved "As-Built" drawings will be delivered to the Department of Design and Construction, 30-30 Thomson Avenue, Long Island City, New York, 11101-3045. The following guideline is provided for the preparation of "As-Built" record drawings:

1. The Contractor will prepare the "As-Built" drawings on AutoCAD and will provide to the City two (2) sets of Mylar and AutoCAD files on a CD. The drawings on CD's and the plotted Mylar's will conform to the standard size of 22" x 36" (559-mm. x 914-mm.) using a 1"=30' (1:360) horizontal and 1"=10' (1:120) vertical scale. The Mylar will be 3-mil in thickness.

2. The "As-Built" drawings will include but not be limited to the following guidelines summarized below:

(a) Drawings will consist of the same legend and layout of title boxes shown on the contract drawings.

(b) Each plotted Mylar drawing will contain the signature and stamp of the Contractor's NYS Professional Engineer/Registered Architect.

(c) The drawings will include:

- street name and crossing street(s) or distance from;
- north arrow;
- property lines and widths;
- legal and existing street widths, street alignment and grades;
- "new" curb lines and widths;
- water main center line measured off the "new" curb line;
- horizontal stationing for all valves, hydrants, outlets, blow-offs, house service connections, etc., measured on a horizontal line as established by the Borough Office Bureau of Topographic;
- alignment and appurtenance location stationing, and deflection angles;
- cover and elevations (Datum used will be that of the Borough where work is located);
- location of pipe joints;
- profile of all piping;
- complete details of all outlet piping roundabouts;
- complete details of all blow-off connections to the sewer;
- complete details of all air cocks;
- location of taps and access manholes;

- location of all cathodic protection stations;
- Venturi sensing lines plans and profiles;
- all appropriate notes.

3. The cost of preparing and submitting “As-Built” approved drawings will be deemed included in the prices bid for all scheduled bid items in the contract. No separate or additional payment will be made for this work.

AA. NO ADDITIONAL PAYMENT. The Contractor is advised that any fences, guardrails, boulders, asphalt walkway of the park, fixtures, other encumbrances removed within project limits during construction will be replaced in kind to the satisfaction of the Engineer. The cost of such work will be deemed included in the prices bid for all contract items of work and no additional or separate payment will be made.

AB. SHEETING AND EXCAVATION AT TRANSIT FACILITIES. In case of transit facilities like MTA, LIRR, METRO NORTH etc., the Contractor will exercise extreme caution and take all necessary precautions in placing sheeting and excavation to prevent any damage to the existing underground or overhead structures and its appurtenances during construction work throughout the project area. The Contractor must take full responsibility to protect the said structures and its appurtenances and any damage caused by the Contractor’s operations must be made good by the Contractor to the satisfaction of the Engineer at no additional cost to the City.

The Contractor must submit shop drawings to the Transit facilities showing all the details and methods of construction, such as, sheeting and bracing, including the Contractor’s procedure and sequence of construction, supporting and/or protection of the existing structures and its appurtenances, with necessary design calculations for approval prior to starting of the construction. The design will be made by a New York State Licensed Professional Engineer skilled in this type of construction and as further evidenced by the imprint of Professional Engineer’s seal and signature on all drawings. The cost of this work will be deemed included in the price bid for all items of work under this contract.

AC. ARCHAEOLOGICAL DISCOVERIES. The Contractor is notified that if requested by the Resident Engineer and the City, the Contractor will be required retain the services of an Archaeologist (the "City's Archaeologist") for this project.

The City's Archaeologist will be notified in advance and will be present on site during sub-surface excavations as deemed necessary. The City's Archaeologist will be authorized to halt construction at any time in order to record and/or recover any archaeological resources encountered during excavations, and to stabilize in place any human remains encountered.

For the purpose of evaluating and recording archaeological resources, the City's Archaeologist will be allowed to enter trenches provided all standard safety requirements are met. It is understood that some construction down time may be necessary.

In the event that human remains, and/or other significant archaeological deposits are encountered during construction or archaeological investigations, Landmarks Preservation Commission (LPC) will be notified as directed by the City's Archaeologist and the State Historic Preservation Office (SHPO) requires that the following protocol is implemented:

1. At all times human remains must be treated with the utmost dignity and respect. Should human remains be encountered work in the general area of the discovery will stop

immediately and the location will be immediately secured and protected from damage and disturbance.

2. Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.

3. The County coroner and local law enforcement as well as the SHPO and the involved agency will be notified immediately. The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archeological. If the remains are archeological in nature, a bio-archaeologist will confirm the identification as human.

4. If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their protection or removal can be generated. The involved agency will consult SHPO and appropriate Native American groups to determine a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance.

5. If human remains are determined to be Euro-American, African- American, etc., the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

Should extra work be ordered by the Resident Engineer as a result of any archaeological discoveries, it will be paid for from the Fixed Sum included in, and in accordance with Item HW-908 Allowance for Extra Work Due To Archaeological Discoveries.

AD. USE OF CITY WATER. Please refer to NYCDOT STANDARD HIGHWAY SPECIFICATIONS (May 16, 2022), Sub Section 1.06.23 (A), Rules, Laws, and Requirements, for use of City water.

AE. PUBLIC DISSEMINATION OF INFORMATION. The Contractor agrees to hold confidential, both during and after the completion or termination of this Contract, all of the reports, information, or data, furnished to, or prepared, assembled or used by, the Contractor under this Contract. The Contractor agrees to maintain the confidentiality of such reports, information, or data by using a reasonable degree of care, and using at least the same degree of care that the Contractor uses to preserve the confidentiality of its own confidential information. The Contractor agrees that such reports, information, or data will not be made available to any person or entity without the prior written approval of the Commissioner. The obligation under this Section to hold reports, information or data confidential will not apply where the Contractor is legally required to disclose such reports, information or data by virtue of a subpoena, court order or otherwise (“disclosure demand”), provided that the Contractor complies with the following: (1) the Contractor will provide advance notice to the Commissioner, in writing or by e-mail, that it received a disclosure demand for such reports, information or data and (2) if requested by the Commissioner, the Contractor will not disclose such reports, information or data until the City has exhausted its legal rights, if any, to prevent disclosure of all or a portion of such reports, information, or data. The previous sentence will not apply if the Contractor is prohibited by law from disclosing to the City the disclosure demand for such reports, information or data.

The Contractor will restrict access to confidential information to persons who have a legitimate work-related purpose to access such information. The Contractor agrees that it will instruct its officers, employees, and agents to maintain the confidentiality of any and all information required to be kept confidential by this Contract.

The Contractor, and its officers, employees, and agents will notify the Commissioner, at any time either during or after completion or termination of this Contract, of any intended statement to the press or any intended issuing of any material for publication in any media of communication (print, news, television, radio, Internet, etc.) regarding the services provided or the data collected pursuant to this Contract at least twenty-four (24) hours prior to any statement to the press or at least five (5) business days prior to the submission of the material for publication, or such shorter periods as are reasonable under the circumstances. The Contractor may not issue any statement or submit any material for publication that includes confidential information as prohibited by this Section.

At the request of the Commissioner, the Contractor will return to the Commissioner any and all confidential information in the possession of the Contractor or its subContractors. If the Contractor or its subContractors are legally required to retain any confidential information, the Contractor will notify the Commissioner in writing and set forth the confidential information that it intends to retain and the reasons why it is legally required to retain such information. The Contractor will confer with the Commissioner, in good faith, regarding any issues that arise from the Contractor retaining such confidential information. If the Commissioner does not request such information, or the Law does not require otherwise, such information will be maintained in accordance with the requirements set forth in the Contract Documents.

AF. PRICES TO INCLUDE. No direct payment will be made for costs incurred in complying with the foregoing Special Provisions, unless otherwise provided. Said costs will be deemed to have been included in the prices bid for all the scheduled contract items.

(B)HIGHWAY PROJECT SPECIFIC PROVISIONS

(NO TEXT)

(C) SEWER & WATER MAIN PROJECT SPECIFIC PROVISIONS

(NO TEXT)

(D) GREEN INFRASTRUCTURE PROVISIONS

(NO TEXT)

SW - PAGES

SEWER AND WATER MAIN REVISIONS TO SPECIFICATIONS

NOTICE

The Standard Sewer And Water Main Specifications of the Department of Environmental Protection (dated August 08, 2022), Sewer Design Standards of the Department of Environmental Protection (dated (September 2007) Revised August 2018), Water Main Standard Drawings of the Department of Environmental Protection (latest revisions), Specifications For Trunk Main Work of the Department of Environmental Protection (dated July 2014) and the Standard Highway Specifications of the Department of Transportation (dated May 16, 2022) of The City of New York, shall be included as part of the contract documents. These said specifications and standard drawings are hereby revised under the following section headings:

A. NOTICE TO BIDDERS
B. REVISIONS TO THE STANDARD HIGHWAY SPECIFICATIONS
C. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS
D. REVISIONS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

(NO TEXT ON THIS PAGE)

A. NOTICE TO BIDDERS

NO TEXT

B. REVISIONS TO THE STANDARD HIGHWAY SPECIFICATIONS

(No Text)

C. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS

(1) Refer to **Subsection 10.15 - Notice To Utility Companies, Etc., To Remove Structures Occupying Place Of Sewers, Water Mains Or Appurtenances**, Page 19:
Add the following to **Subsection 10.15**:

(1) CONSOLIDATED EDISON COMPANY OF NEW YORK (CON EDISON)

There are CON EDISON facilities in the area of construction. The Contractor shall notify CON EDISON at least seventy-two (72) hours prior to the start of construction by contacting Mr. Dennis Brady at (917) 608-3435.

(2) NATIONAL GRID

There are NATIONAL GRID facilities in the area of construction. The Contractor shall notify NATIONAL GRID at least seventy-two (72) hours prior to the start of construction by contacting Mr. Neville Jacobs Jr. at (718) 963-5612.

(3) VERIZON

There are VERIZON facilities in the area of construction. The Contractor will notify VERIZON at least seventy-two (72) hours prior to the start of construction by contacting Mr. Aubrey Makhanlall at (516) 758-3705.

(2) Refer to **Subsection 10.21 - Contractor To Notify City Departments**, Page 21:
Add the following to **Subsection 10.21**:

(1) N.Y.C. D.E.P., BUREAU OF WATER AND SEWERS OPERATIONS

The Contractor will notify Ms. Sol Posada, P.E., Chief, Infrastructure, at the Department of Environmental Protection, 59-17 Junction Blvd, Corona, N.Y. 11368, at (718) 595-7434 at least thirty (30) days prior to the start of construction.

(2) NEW YORK CITY FIRE DEPARTMENT

The Contractor will notify the Bureau of Fire Communications at least thirty (30) days prior to the start of construction by contacting Mr. Edward Durkin at (718) 281-3933 or (917) 769-1476.

(3) N.Y.C. DEPARTMENT OF TRANSPORTATION

The Contractor will notify Mr. Seedan Bjorn / Mr. Akmal Mikhail, Signal / Street Lighting Operations, 34-02 Queens Blvd., Long Island City, N.Y. 11101 at (212) 839-3790 / (212) 839-3368, at least seventy-two (72) hours prior to the start of construction.

(4) N.Y.C. DEPARTMENT OF PARKS AND RECREATION

The Contractor will notify the Parks Department at least forty-eight (72) hours prior to the start of construction by contacting Mr. Daniel Grulich at (718) 760-6927, Elizabeth Koenig at Elizabeth.Koenig@parks.nyc.gov / 718-760-4050 and Tyler Wilcox, Queens Forestry at Tyler.Wilcox@parks.nyc.gov / 718-430-4637, Kyle Walsh at Kyle.Walsh@parks.nyc.gov

(5) N.Y.C. TRANSIT AUTHORITY

The Contractor is advised that bus routes as well as bus stops, within the scope of this project may be affected during construction operations. The Contractor will notify the Transit Authority at least two (2) weeks prior to the start of construction, in order to make the necessary arrangements:

Arrangements will be made through:

Ms. Sarah Wyss
Director Of Short Range, Bus Service Planning (SRB)
New York City Transit
2 Broadway, 17th Floor
New York, N.Y. 10004
Telephone No. (646) 252-5517
sarah.wyss@nyct.com

(3) **Refer** to **Subsection 10.24 – Damaged Water Service Pipes To Be Repaired By A Licensed Plumber**, Page 22:
Add the following to **Subsection 10.24**:

If the damaged or cut water service pipe is lead, galvanized steel, or galvanized iron, the service pipe must not be partially replaced, but fully replaced from the main to the house control valve. If the service pipe was damaged, cut, or otherwise interrupted due to the Contractor's actions or means & methods (including selection of shoring systems), the water service pipe will be replaced at the Contractor's own cost.

(4) **Refer** to **Subsection 10.30 - Contractor To Provide For Traffic**, Page 24:
Add the following to **Subsection 10.30**:

(1) Traffic Stipulations:

The Contractor shall refer to the Traffic Stipulations (twelve (12) pages) that are attached to the end of this section, and as directed by the Engineer.

(5) **Refer to Subsection 71.41.4 - Specific Pavement Restoration Provisions,** Page 530**:**
Add the following to Subsection 71.41.4:

(E) Specific Pavement Restoration Provisions:

(1) For the Entirety of the Street Within the Project Scope:

(a) The permanent restoration over the **trench width and cutbacks only** must consist of a top course of one and one-half (1-1/2) inches of asphaltic concrete wearing course on a base course of a minimum of four and one-half (4-1/2) inches of binder mixture, or a top course of one and one-half (1-1/2) inches of asphaltic concrete wearing course on a minimum of one and one-half (1-1/2) inches of binder mixture on a base course of a minimum of six (6) inches of concrete, to match the existing pavement as directed by the Engineer.

(2) The Following Requirements Apply:

(a) Before the top course is installed, an additional width of asphalt beyond the edge of new base course must be saw-cut and removed from all edges of trenches to a depth to accommodate the specified top course and the entire area restored. This additional removal must be in accordance with paragraph (b) below.

(b) Pavement excavation along with saw cutting of pavements for sewer and water main trenches must be in accordance with **Section 71.21 - Pavement Excavation** of the Standard Sewer And Water Main Specifications.

The following street is protected by New York City Administrative Code §19-144 (Local Law No. 14):

1. 34th Avenue from 214th Place to 214th Lane is Protected until 12/5/2023.
2. 214th Lane from 34th Avenue to 35th Avenue is Protected until 12/5/2023.
3. 129th Street from Kew Gardens Road to Metropolitan Avenue is Protected until 5/7/2024.
4. 130th Street from Kew Gardens Road up to approximately 100 feet towards the South is Protected until 8/6/2023.
5. Hillside Avenue from 130th Street to Kew Gardens Road is Protected until 5/22/2024.
6. Intersection of 34th Avenue and 214th Place is Protected until 12/5/2023.
7. Intersection of 35th Avenue and 214th Lane is Protected until 12/5/2023.
8. Intersection of 129th Street and Kew Gardens Road is Protected until 5/7/2024.
9. Intersection of 129th Street and Hillside Avenue is Protected until 5/7/2024.
10. Intersection of 130th Street and Kew Gardens Road is Protected until 8/6/2023.
11. Intersection of 130th Street and Hillside Avenue is Protected until 5/23/2024.
12. Intersection of 131st Street and Hillside Avenue is Protected until 5/23/2024.
13. Intersection of 135th Street and Hillside Avenue is Protected until 5/22/2024.
14. Intersection of 136th Street and Hillside Avenue is Protected until 5/22/2024.

(c) At locations requiring the installation of a concrete base course, a reflective cracking membrane must be installed over joints prior to restoration, the payment will be as follows:
   1. For protected streets under New York City Administrative Code §19-144 (Local Law No. 14), (refer to paragraph (b) 1 through 12 herein, for details of the protected streets) the payment for work will be made under the unit price bid for the Item No. 6.91 – Reflective Cracking Membrane (18" Wide).
   2. For non-protected streets, the payment for work will be deemed included in the prices bid for all pavement restoration items.

Additionally, appropriate pavement keys as described below must be used.

(d) Pavement keys **Type B-1** must be used to insure a desired four (4) inch curb reveal (two and one-half (2-1/2) inch absolute minimum). Pavement key **Type A** must be used in all intersections. Both keys are to be per Bureau of Highways Operations Specifications and Standard Details of Construction.

(e) Unless otherwise specified, the cost for Proctor analyses, in-place soil density tests, tack coating, eradication of temporary roadway markings, stripping or milling of

pavement keys and adjustment of city-owned castings for all roadway work will be deemed included in the prices bid for all pavement restoration items.

(f) Payment for placement of temporary pavement marking will be made under Item No. 6.49 - TEMPORARY PAVEMENT MARKINGS (4" WIDE).

(g) Payment for removal of existing pavement markings will be made under Item No. 6.53 - REMOVE EXISTING LANE MARKINGS (4" WIDE).

(h) Payment for placement of permanent pavement marking with thermoplastic reflectorized pavement markings (crosswalk and lane dividers) will be made under Item No. 6.44 - THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE).

(i) Payment for pavement restoration will be made under the following items:

Item No.	Item	Payment Description
4.02 AB-R	Asphaltic Concrete Wearing Course, 1-1/2" Thick	(For asphaltic concrete wearing course top course when no overlay is required.)
4.02 AF-R	Asphaltic Concrete Wearing Course, 2" Thick	(For 2" asphaltic concrete wearing course overlay from curb to curb or edge to edge.)
4.02 CA	Binder Mixture	(For binder mixture base course over trenches and cutbacks; binder mixture top filler course under asphaltic concrete wearing course when no overlay is required; binder mixture top course when overlay is required; binder mixture in Type A and B Keys; and binder mixture to fill in roadway depressions and to provide a leveling course prior to overlay where ordered.)
4.04 H	Concrete Base For Pavement, Variable Thickness For Trench Restoration (High Early Strength)	(For concrete base course over trenches and cutbacks.)
4.05AX	High Early Strength Reinforced Concrete Pavement (Bus Stops)	(For reinforced concrete pavement at Bus stops)

D. REVISIONS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

NO TEXT

END OF SECTION
This Section consists of Seven (7) pages plus Twelve (12) pages

NEW YORK CITY DOT

Department of Transportation

Ydanis Rodriguez, Commissioner

OCMC TRAFFIC STIPULATIONS

December 20, 2022

OCMC FILE NO: QEC 22-734
CONTRACT NO: **QED 1059**
PROJECT: REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC.
LOCATION(S): VARIOUS LOCATIONS IN QUEENS

PERMISSION IS HEREBY GRANTED TO THE **NYCDDC** AND ITS DULY AUTHORIZED AGENT, TO ENTER UPON AND RESTRICT THE FLOW OF TRAFFIC AT THE ABOVE LOCATION(S) FOR THE PURPOSE OF CARRYING OUT THE ABOVE NOTED PROJECT, SUBJECT TO THE STIPULATIONS, AS NOTED BELOW:

A. SPECIAL STIPULATIONS

1. **EMBARGOES** – A CONSTRUCTION EMBARGO WILL APPLY TO THOSE LOCATIONS BELOW WHICH FALL WITHIN THE **HOLIDAY EMBARGO** OR ANY OTHER SPECIAL EVENT EMBARGOES SUCH AS PUBLISHED BY THE BUREAU OF PERMIT MANAGEMENT AND CONSTRUCTION CONTROL.

2. **BIKE LANES** – FOR ANY WORK IN OR AFFECTING A BIKE LANE, THE PERMITTEE MUST COMPLY WITH THE **NEW GUIDELINES FOR THE MANITENANCE & PROTECTION OF TRAFFIC PLAN FOR CYCLING**, WHICH ARE AVAILABLE AT:

   HTTPS://WWW1.NYC.GOV/HTML/DOT/DOWNLOADS/PDF/BIKE-MPT-GUIDELINES.PDF

3. **BIKE SHARE STATIONS:** THE PERMITTEE SHALL NOT REMOVE, RELOCATE, DAMAGE OR DISRUPT THE OPERATION OF EXISTING BIKE SHARE STATIONS WITHOUT FIRST CONTACTING NYC BIKE SHARE AT 855-245-3311 FOR THEIR REQUIREMENTS PRIOR TO COMMENCING WORK.

4. **BUS STOPS** – THE PERMITTEE SHALL PROVIDE WRITTEN NOTICE TO NYC DOT OCMC AND NEW YORK CITY TRANSIT (NYCT) A MINIMUM OF FIVE (5) WEEKS IN ADVANCE FOR LANE/STREET CLOSURES THAT AFFECT BUS ROUTES/BUS STOPS.

5. **STREET LIGHTS / TRAFFIC SIGNALS:** THE PERMITTEE SHALL NOT REMOVE OR RELOCATE EXISTING STREET LIGHTS OR TRAFFIC SIGNALS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT STREET LIGHTING / TRAFFIC SIGNALS UNIT.

6. **TRAFFIC CAMERAS, DETECTION/COMMUNICATION EQUIPMENT:** IF AT ANY TIME DURING THE APPROVED WORK, THE PERMITTEE ENCOUNTERS TRAFFIC SURVEILLANCE CAMERAS, DETECTION EQUIPMENT OR ANY TYPE OF COMMUNICATION EQUIPMENT (WIRELESS OR HARD-WIRED) ON ANY NYC DOT FACILITY, THAT IS NOT INCLUDED ON THE DESIGN/BUILD DRAWINGS, THE PERMITTEE SHALL IMMEDIATELY NOTIFY NYC DOT TRAFFIC MANAGEMENT BY PHONE AT 718-433-3390 OR 718-433-3340 AND VIA EMAIL AT TMC@DOT.NYC.GOV AND AWAIT DIRECTION PRIOR TO CONTINUING WORK.

7. **METERS** – THE PERMITTEE SHALL NOT REMOVE OR RELOCATE PARKING METERS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT PARKING METER DIVISION AT 718 – 894 – 8651.

8. **TEST PITS** – THE BELOW TRAFFIC STIPULATIONS DO NOT APPLY TO TEST PIT WORK RELATED TO THIS CONTRACT. WORK HOURS AND OTHER REQUIREMENTS FOR TEST PIT OPERATIONS MAY DIFFER FROM THE STIPULATIONS IDENTIFIED BELOW. THE PERMITTEE SHALL BE REQUIRED TO OBTAIN SEPARATE PERMITS RELATED TO TEST PITS.

9. **TEMPORARY PARKING REGULATIONS/PAVEMENT MARKINGS** – THE PERMITTEE IS REQUIRED TO INSTALL, MAINTAIN AND REMOVE ALL NECESSARY TEMPORARY PARKING AND REGULATORY SIGNS AND PAVEMENT MARKINGS, AND RESTORE THEIR ORIGINAL CONDITION PER NYC DOT STANDARDS, PRIOR TO EXPIRATION OF THEIR PERMITS. THE PERMITTEE OR AGENCY PERFORMING PUBLIC OUTREACH SHALL POST AND MAINTAIN ADVISORY SIGNS A MINIMUM OF 48 HOURS PRIOR TO CHANGING EXISTING PARKING REGULATION SIGNS TO APPROVED TEMPORARY CONSTRUCTION PARKING REGULATION SIGNS. THE ADVISORY SIGNS SHOULD BE POSTED ON ALL POLES AND DRIVE RAILS ON THE SEGMENT AFFECTED, INDICATING THE DATE OF THE CHANGE, THE NEW REGULATIONS AND A TELEPHONE NUMBER TO OBTAIN MORE INFORMATION.

10. **ACCESS TO ABUTTING PROPERTIES** – THE PERMITTEE SHALL COORDINATE ALL ACTIVITIES WITH ABUTTING PROPERTY OWNERS TO ENSURE ACCESS IS PROVIDED TO/FROM ENTRANCES/DRIVEWAYS AT ALL TIMES.

11. **AUTHORIZED PARKING** – PRIOR TO PERFORMING WORK WHICH IMPACTS AUTHORIZED PARKING, THE PERMITTEE SHALL SUBMIT IN WRITING, AND COPY OCMC-STREETS, A REQUEST TO OCCUPY SPACE CURRENTLY USED BY AUTHORIZED VEHICLES. APPROVAL MUST BE RECEIVED FROM AUTHORIZED PARKING PRIOR TO OCCUPYING THESE AREAS.

12. **NOTIFICATION** – THE PERMITTEE MUST AT LEAST TWO (2) WORKING DAYS BEFORE THE START OF CONSTRUCTION NOTIFY THE NYC FIRE DEPARTMENT, NYC POLICE DEPARTMENT, NYCEMS, LOCAL COMMUNITY BOARD, BOROUGH PRESIDENT'S OFFICE-CHIEF ENGINEER, NYCDOT OCMC OFFICE, AND ALL ABUTTING PROPERTY OWNERS.

13. **CONSTRUCTION INFORMATIONAL SIGNS** – THIS PROJECT REQUIRES A CONSTRUCTION PROJECT INFORMATIONAL SIGN (CPIS) IN ACCORDANCE WITH NYCDOT HIGHWAY RULE SECTION 2-02 (4) AND (5). CRITERIA AND A PROTOTYPE FOR THIS SIGN MAY BE FOUND ON THE NYCDOT WEBSITE AT:

   HTTP://WWW.NYC.GOV/HTML/DOT/DOWNLOADS/PDF/DOT_CPIS_DIRECTIONS.PDF

14. **ENHANCED MITIGATIONS**
   - "NO STANDING ANYTIME-TEMPORARY CONSTRUCTION" SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED AND MAINTAINED AS WARRANTED BY THE MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) REQUIRED TO FACILITATE TRAFFIC MOVEMENTS THROUGH THE WORK ZONE. ALL TEMPORARY SIGNS AND PAVEMENT MARKINGS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
   - COMMUNITY OUTREACH SHALL BE PROVIDED FOR THE DURATION OF THE PROJECT.

B. MAINTENANCE AND PROTECTION OF TRAFFIC

EASTBOUND HILLSIDE AVENUE BETWEEN 211TH STREET AND HOLLIS COURT BOULEVARD
EASTBOUND HILLSIDE AVENUE BETWEEN HOLLIS COURT BOULEVARD AND 212TH STREET
EASTBOUND HILLSIDE AVENUE BETWEEN 212TH STREET AND 212TH PLACE
EASTBOUND HILLSIDE AVENUE BETWEEN 212TH PLACE AND 213TH STREET

- Work hours shall be as follows: 8:00 AM to 6:00 PM, Monday – Friday and Saturday
- The contractor shall occupy 12-foot width of the roadway and maintain one 12 (twelve) foot eastbound travel lane during working hours.
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall maintain a minimum of a 5-foot clear sidewalk at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- **The contractor shall coordinate with MTA bus prior to mobilization.**

WESTBOUND HILLSIDE AVENUE BETWEEN 211TH STREET AND HOLLIS COURT BOULEVARD
WESTBOUND HILLSIDE AVENUE BETWEEN HOLLIS COURT BOULEVARD AND 212TH STREET
WESTBOUND HILLSIDE AVENUE BETWEEN 212TH STREET AND 212TH PLACE
WESTBOUND HILLSIDE AVENUE BETWEEN 212TH PLACE AND 213TH STREET

- Work hours shall be as follows: 9:00 AM to 6:00 PM, Monday – Friday and Saturday
- The contractor shall occupy 12-foot width of the roadway and maintain one 12 (twelve) foot westbound travel lane during working hours.
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall maintain a minimum of a 5-foot clear sidewalk at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- **The contractor shall coordinate with MTA bus prior to mobilization.**

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

INTERSECTION OF EASTBOUND HILLSIDE AVENUE AND 211TH STREET
INTERSECTION OF EASTBOUND HILLSIDE AVENUE AND HOLLIS COURT BOULEVARD
INTERSECTION OF EASTBOUND HILLSIDE AVENUE AND 212TH STREET
INTERSECTION OF EASTBOUND HILLSIDE AVENUE AND 212TH PLACE
INTERSECTION OF EASTBOUND HILLSIDE AVENUE AND 213TH STREET

- Work hours shall be as follows: 9:00 AM to 4:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain three 12 (twelve) foot travel lanes during working hours, and on all cross streets maintain one 12-foot lane for local and emergency traffic, during working hours.
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall maintain a minimum of a 5-foot clear sidewalk at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- **The contractor shall coordinate with MTA bus prior to mobilization.**

INTERSECTION OF WESTBOUND HILLSIDE AVENUE AND 211TH STREET
INTERSECTION OF WESTBOUND HILLSIDE AVENUE AND HOLLIS COURT BOULEVARD
INTERSECTION OF WESTBOUND HILLSIDE AVENUE AND 212TH STREET
INTERSECTION OF WESTBOUND HILLSIDE AVENUE AND 212TH PLACE
INTERSECTION OF WESTBOUND HILLSIDE AVENUE AND 213TH STREET

- Work hours shall be as follows: 9:00 AM to 4:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain three 12 (twelve) foot travel lanes during working hours, and on all cross streets maintain one 12-foot lane for local and emergency traffic, during working hours.
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall maintain a minimum of a 5-foot clear sidewalk at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- **The contractor shall coordinate with MTA bus prior to mobilization.**

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

211TH STREET BETWEEN HILLSIDE AVENUE AND 88TH ROAD
211TH STREET BETWEEN 88TH ROAD AND 89TH AVENUE
211TH STREET BETWEEN 89TH AVENUE AND 89TH ROAD
211TH STREET BETWEEN 89TH ROAD AND 90TH AVENUE
213TH STREET BETWEEN HILLSIDE AVENUE AND 89TH AVENUE
213TH STREET BETWEEN 89TH AVENUE AND 90TH AVENUE
89TH AVENUE BETWEEN HOLLIS COURT BOULEVARD AND 212TH STREET
89TH AVENUE BETWEEN 212TH STREET AND 212TH PLACE
89TH AVENUE BETWEEN 212TH PLACE AND 213TH STREET
89TH ROAD BETWEEN 211TH STREET AND HOLLIS COURT BOULEVARD
89TH ROAD BETWEEN HOLLIS COURT BOULEVARD AND 212TH STREET

- Work hours shall be as follows: 7:00 AM to 6:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain one 12-foot lane for local and emergency traffic during working hours.
- The contractor shall restore all travel lanes after working hours.
- The contractor shall maintain a 5-foot clear sidewalk for pedestrians at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.

INTERSECTION OF 211TH STREET AND 89TH ROAD
INTERSECTION OF 211TH STREET AND 90TH AVENUE
INTERSECTION OF 211TH STREET AND 88TH ROAD
INTERSECTION OF 211TH STREET AND 89TH AVENUE
INTERSECTION OF 213TH STREET AND 89TH AVENUE

- Work hours shall be as follows: 9:00 AM to 4:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain one 12-foot lane for local and emergency traffic during working hours.
- The contractor shall restore all travel lanes after working hours.
- The contractor shall maintain a 5-foot clear sidewalk for pedestrians at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

212TH STREET BETWEEN HILLSIDE AVENUE AND 89TH AVENUE
212TH STREET BETWEEN 89TH AVENUE AND 89TH ROAD
212TH STREET BETWEEN 89TH ROAD AND 90TH AVENUE
212TH PLACE BETWEEN HILLSIDE AVENUE AND 89TH AVENUE
212TH PLACE BETWEEN 89TH AVENUE AND 90TH AVENUE

- Work hours shall be as follows: 8:00 AM to 6:00 PM, Monday – Friday and Saturday
- The contractor shall maintain one 12-foot lane for local and emergency traffic during working hours.
- **The contractor shall coordinate with MTA bus prior to mobilization.**
- The contractor shall restore all travel lanes after working hours.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- The contractor shall a maintain 5-foot clear sidewalk for pedestrians at all times.

INTERSECTION OF 212TH STREET AND 89TH AVENUE
INTERSECTION OF 212TH STREET AND 89TH ROAD
INTERSECTION OF 212TH STREET AND 90TH AVENUE
INTERSECTION OF 212TH PLACE AND 89TH AVENUE
INTERSECTION OF 212TH PLACE AND 90TH AVENUE

- Work hours shall be as follows: 9:00 AM to 4:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain one 12-foot lane for local and emergency traffic during working hours.
- **The contractor shall coordinate with MTA bus prior to mobilization.**
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.
- The contractor shall a maintain 5-foot clear sidewalk for pedestrians at all times.

HOLLIS COURT BOULEVARD BETWEEN HILLSIDE AVENUE AND 89TH AVENUE
HOLLIS COURT BOULEVARD BETWEEN 89TH AVENUE AND 89TH ROAD
HOLLIS COURT BOULEVARD BETWEEN 89TH ROAD AND 90TH AVENUE

- Work hours shall be as follows: 7:00 AM to 6:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain two (2) 11-foot travel lanes, one (1) 11-foot travel lane on each side of the existing center mall.
- The contractor shall a maintain 5-foot clear sidewalk for pedestrians at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

INTERSECTION OF HOLLIS COURT BOULEVARD AND 89TH AVENUE
INTERSECTION OF HOLLIS COURT BOULEVARD AND 89TH ROAD
INTERSECTION OF HOLLIS COURT BOULEVARD AND 90TH AVENUE

- Work hours shall be as follows: 9:00 AM to 4:00 PM, Monday – Friday
  8:00 AM to 6:00 PM, Saturday
- The contractor shall maintain on Hollis Court Boulevard, two (2) 11-foot travel lanes, one (1) 11-foot travel lane on each side of the existing center mall and on all cross streets, maintain one 12-foot lane for local and emergency traffic during working hours.
- The contractor shall restore full width of the roadway to traffic after working hours.
- The contractor shall a maintain 5-foot clear sidewalk for pedestrians at all times.
- The contractor shall maintain all crosswalks during and after working hours.
- The contractor shall maintain access to driveways of all property owners on the affected street segment.

KEW GARDENS ROAD BETWEEN 127TH STREET AND 135TH STREET.
87TH AVENUE BETWEEN KEW GARDENS ROAD AND 136TH STREET.
135TH STREET BETWEEN 87TH AVENUE AND HILLSIDE AVENUE.

- Work hours shall be as follows: 7:00 AM to 6:00 PM, Monday – Friday.
  8:00 AM to 6:00 PM, Saturday.
- During work hours, the contractor shall maintain one (1) 12- foot lane for two (2) way thru traffic.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After work hours, the contractor shall maintain two (2)-11-foot lanes for traffic.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

129TH STREET BETWEEN KEW GARDENS ROAD AND METROPOLITAN AVENUE.
130TH STREET BETWEEN KEW GARDENS ROAD AND HILLSIDE AVENUE.
131ST STREET BETWEEN KEW GARDENS ROAD AND HILLSIDE AVENUE.

- Work hours shall be as follows: 7:00 AM to 6:00 PM, Monday – Friday.
  8:00 AM to 6:00 PM, Saturday.
- The contractor shall maintain one (1) 12- foot thru traffic at all times.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

86TH ROAD BETWEEN KEW GARDENS ROAD AND 135TH STREET.
134TH STREET BETWEEN 86TH ROAD AND 87TH AVENUE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 7:00am to 6:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- The contractor shall maintain one (1) 12- foot thru traffic at all times.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

136TH STREET BETWEEN DEAD END AND HILLSIDE AVENUE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 7:00am to 6:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours, the contractor shall maintain one (1) 12- foot lane for two (2) way thru traffic.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After work hours, the contractor shall maintain two (2)-11-foot lanes for traffic.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

METROPOLITAN AVENUE (WESTBOUND) BETWEEN 129TH STREET AND 130TH STREET.

- **THE CONTRACTOR MUST COORDINATE WITH MTA BUS PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 10:00 AM to 6:00 PM, Monday – Friday.
- 8:00 AM to 6:00 PM, Saturday.
- During work hours, the contractor shall maintain two (2) 11- foot lanes for traffic, one (1) lane in each direction.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After work hours, the contractor shall restore full width of the roadway to traffic.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

HILLSIDE AVENUE (WESTBOUND) BETWEEN 130th STREET AND KEW GARDENS ROAD.

- **THE CONTRACTOR MUST COORDINATE WITH MTA BUS PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 10:00 AM to 6:00 PM, Monday – Friday.
  8:00 AM to 6:00 PM, Saturday.
- During work hours, the contractor shall maintain one (1) 11- foot lane for traffic on westbound direction, eastbound traffic not affected.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After work hours, the contractor shall restore full width of the roadway to traffic.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF KEW GARDENS RAOD AND 129TH STREET.

INTERSECTION OF KEW GARDENS RAOD AND 130TH STREET.

INTERSECTION OF KEW GARDENS RAOD AND 131ST STREET.

- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours, the contractor shall maintain one (1) 11-foot lane on one-way street and two (2)11- foot lanes on two-way streets.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF KEW GARDENS RAOD AND 86TH ROAD.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

INTERSECTION OF KEW GARDENS ROAD AND 87TH AVENUE.

- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain one (1) 12-foot lane for two (2) way thru traffic on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 86TH ROAD AND 134TH STREET.

INTERSECTION OF 134TH STREET AND 87TH AVENUE.

INTERSECTION OF 136TH STREET AND 87TH AVENUE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours the contractor shall maintain one (1) 12-foot lane for two (2) way thru traffic on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 135TH STREET AND 87TH AVENUE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours the contractor shall maintain one (1) 12-foot lane for two (2) way thru traffic on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF HILLSIDE AVENUE AND KEW GARDENS ROAD.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
- 8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain two (2) 11-foot lanes for traffic, one lane in each direction on Kew Gardens Road and maintain three (3)-11 lanes for traffic on Hillside Avenue.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF HILLSIDE AVENUE AND 135TH STREET.

INTERSECTION OF HILLSIDE AVENUE AND 131ST STREET.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
- 8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain one (1)-11 foot lane for traffic on 135th Street/ 131st Street and maintain three (3)-11 lanes for traffic on Hillside Avenue.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF KEW GARDENS ROAD AND 135TH STREET.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

8:00am to 6:00pm Saturdays.

- During work hours the contractor shall maintain one (1) 11-foot lane for traffic on 135th Street and maintain two (2) 11-foot lanes for traffic, one lane in each direction on Kew Gardens Road
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF HILLSIDE AVENUE AND 130TH STREET.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain one (1) 11-foot lane for traffic on 130th Street and maintain two (2) 11-foot lanes for traffic, one lane in each direction on Hillside Avenue.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF METROPOLITAN AVENUE AND 130TH STREET.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain one (1) 11-foot lane for traffic on both directions.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF METROPOLITAN AVENUE AND 129TH STREET.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours, the contractor shall maintain one (1) 11-foot lane on one-way street and two (2) 11-foot lanes on two-way streets.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

35TH AVENUE BETWEEN 215TH STREET AND BELL BOULEVARD.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 7:00am to 6:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours, the contractor shall maintain one (1) 12- foot lane for two (2) way thru traffic.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After work hours, the contractor shall maintain two (2)-11-foot lanes for traffic.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

214TH LANE BETWEEN 35TH AVENUE AND 34TH AVENUE.

34TH AVENUE BETWEEN 214TH LANE AND 214TH PLACE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 7:00am to 6:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- The contractor shall maintain one (1) 11- foot thru traffic at all times.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 34TH AVENUE AND 214TH LANE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

- The contractor shall maintain one (1) 11- foot thru traffic on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 34TH AVENUE AND 214TH PLACE.

INTERSECTION OF 35TH AVENUE AND 214TH LANE.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours, the contractor shall maintain one (1) 11-foot lane on one-way street and two (2)11-foot lanes on two-way streets.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 35TH AVENUE AND 215TH STREET.

INTERSECTION OF 35TH AVENUE AND 214TH PLACE.

INTERSECTION OF 35TH AVENUE AND CORPORAL STONE STREET.

- **THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.**
- Work hours shall be as follows: 9:00am to 4:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 9:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours the contractor shall maintain one (1) 12-foot lane for two (2) way thru traffic on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

INTERSECTION OF 35TH AVENUE AND BELL BOULEVARD.

- Work hours shall be as follows: 10:00am to 4:00pm Monday through Friday.
  8:00am to 6:00pm Saturdays.
- During work hours the contractor shall maintain two (2) 11-foot lanes for traffic, one lane in each direction on both roadways.
- Full width of roadway shall be opened to traffic when site is unattended.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

HILLSIDE AVE BETWEEN 136TH STREET AND VAN WYCK EXPRESSWAY SR WEST

- THE CONTRACTOR MUST COORDINATE WITH THE SCHOOL PRIOR TO MOBILIZATION.
- Work hours shall be as follows: 10:00am to 6:00pm Monday through Friday and Saturday 8:00am to 6:00pm. If within a School zone, work hours shall be as follows: 10:00am to 2:00pm Monday through Friday and Saturday 8:00am to 6:00pm.
- During work hours, the contractor shall maintain four (4) 11- foot lanes for traffic, two lanes in each direction.
- The contractor shall maintain a minimum of 5 feet wide sidewalk all the time.
- After working hours, the permittee shall restore all travel lanes to traffic. The contractor may 8 feet adjacent to the curb during non-work hours. Containment is only to restrict parking and for storage equipment, materials and jersey barriers on the work site only.
- Flagmen at each end of the work zone must be provided to assist the traffic during work hours.

C. GENERAL NOTES

1. **THIS IS NOT A PERMIT.** THIS STIPULATION SHEET MUST BE SUBMITTED WITH ALL REQUESTS FOR PERMITS PERTAINING TO THE ABOVE CONTRACT AND PRESENT AT THE WORK SITE ALONG WITH ALL ACTIVE CONSTRUCTION PERMITS WHEN THE APPROVED WORK IS BEING PERFORMED.
2. THE CONTRACTOR MUST COMPLY WITH ALL CONSTRUCTION EMBARGOS ISSUED BY THE NYCDOT INCLUDING THE HOLIDAY EMBARGO.
3. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE NYCDOT SPECIAL EVENTS UNIT AS IDENTIFIED BELOW:

A. STREET FAIRS / FESTIVALS

- ALL EXCAVATIONS MUST BE PLATED WITH SKID RESISTANT PLATES.
- PLATES MUST BE RECESSED AND FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

B. RUNNING / WALKING / BIKING EVENTS

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

C. PARADES

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- FORMATION AND DISPERSAL AREA PLATES MUST BE RECESSED AND FLUSH WITH PAVEMENT (PLATES MUST BE SKID RESISTANT).
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

D. MAYORAL EVENTS

- ALL EXCAVATIONS MUST BE BACKFILLED AND PAVED OR PLATES MUST BE RECESSED AND PAVED OVER FLUSH WITH PAVEMENT.
- ALL PAVEMENT DEFECTS MUST BE CORRECTED WITHIN OR ADJACENT TO THE WORK ZONE.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEFECTS WITHIN THE IMMEDIATE VICINITY IF NYCDOT STREET & ARTERIAL MAINTENANCE CANNOT MAKE REPAIRS DUE TO PROJECT INTERFERENCE (AS DETERMINED BY NYCDOT).
- ALL EQUIPMENT, TRAILERS AND MATERIAL STORAGE MUST BE REMOVED.

4. ALL RELOCATION WORK BY THE UTILITIES SUCH AS; CON EDISON, TELEPHONE, GAS AND CABLE COMPANIES SHALL PRECEDE THE CONTRACTORS' START OF WORK ON ALL AFFECTED ROADWAYS IN THE IMPACTED CONTRACT AREA.
5. THE CONTRACTOR IS ADVISED THAT OTHER CONTRACTORS MAY BE WORKING IN THE GENERAL AREA DURING THE TERM OF THIS STIPULATION. IN WHICH EVENT, THE CONTRACTOR MAY REQUIRE MODIFICATIONS BY THE OCMC-STREETS.
6. THE PERMITTEE IS NOT AUTHORIZED TO ENTER, OCCUPY OR USE ANY PUBLICLY-OWNED OR PRIVATELY OWNED, NON-PAVED, LANDSCAPE OR NON-LANDSCAPED LOCATION WITHOUT SPECIFIC WRITTEN PERMISSION. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A LIMITED-ACCESS ARTERIAL HIGHWAY, **WRITTEN** APPROVAL FROM THE NYCDOT OCMC-HIGHWAYS IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR PUBLIC PARK, **WRITTEN** APPROVAL FROM THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION OR NEW YORK CITY DEPARTMENT OF PARKS AND RECREATION IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF ANY OTHER JURISDICTION SUCH AS PRIVATE PROPERTY, STATE, FEDERAL ETC., IT IS THE PERMITTEE'S RESPONSIBILITY TO DETERMINE THE PROPERTY OWNER AND OBTAIN THE WRITTEN APPROVAL.
7. THE PERMITTEE SHALL ADHERE TO THE NYCDOT BUREAU OF BRIDGES' SPECIAL PROVISIONS FOR LANDSCAPE PROTECTION, MAINTENANCE AND RESTORATION, ITEMS 1.18.15 THROUGH 1.18.19, WHENEVER AND WHEREVER ANY OF THE PERMITTEE'S ACTIVITIES OCCUR WITHIN A LIMITED ACCESS ARTERIAL HIGHWAY RIGHT - OF - WAY.
8. NO DEVIATION OR DEPARTURE FROM THESE STIPULATIONS WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL FROM THE OCMC-STREETS. REQUEST FOR SUCH MODIFICATIONS SHALL BE SUBMITTED TO THE OFFICE OF THE OCMC-STREETS, NEW YORK CITY DEPARTMENT OF TRANSPORTATION, A MINIMUM OF TWENTY (20) DAYS IN ADVANCE FOR CONSIDERATION.
9. FOR ANY CONSTRUCTION ACTIVITY RESULTING IN THE FULL CLOSURE OF A ROADWAY FOR MORE THAN 180 CONSECUTIVE CALENDAR DAYS, THE CONTRACTOR MUST PRODUCE AND SUBMIT A COMMUNITY REASSESSMENT, IMPACT AND AMELIORATION (CRIA) STATEMENT TO

NYCDOT PLANNING AND OBTAIN THEIR APPROVAL BEFORE APPLYING FOR PERMITS, IN COMPLIANCE WITH THE PROVISIONS OF **LOCAL LAW 24 STREET CLOSURE LAW.**

10. FOR THIS PROJECT THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL NECESSARY ADVANCE WARNING AND DETOUR SIGNS, TEMPORARY CONTROL DEVICES, BARRICADES, LIGHTS AND FLASHING ARROW BOARDS IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," THE TYPICAL SCHEMES INCLUDED IN THIS SPECIFICATION; AND AS ORDERED BY THE ENGINEER-IN-CHARGE AND THE OCMC-STREETS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING HIS CONSTRUCTION SIGNAGE. THE IDENTIFICATION SHALL INCLUDE THE CONTRACTOR'S NAME, SPONSORING AGENCY NAME AND THE CONTRACT NUMBER. THE IDENTIFICATION SHALL BE PLACED ON THE BACK OF THE SIGN. THE LETTERING SHALL BE THREE (3) INCHES HIGH.
12. THE OCMC-STREETS RESERVES THE RIGHT TO VOID OR MODIFY THESE STIPULATIONS SHOULD CONSTRUCTION FAIL TO COMMENCE WITHIN TWO (2) YEARS OF THE SIGNED DATE OF THESE STIPULATIONS.

bg

GARY SMALLS
DIRECTOR
OCMC-STREETS

XIOMARA AGUILERA
PROJECT MANAGER
OCMC -STREETS

DUANE BARRA
DIRECTOR
OCMC-STREETS

MARIAM SOURIAL
PROJECT MANAGER
OCMC -STREETS

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street – Concourse Level
New York, NY 10041
T: 212.839.9621 F: 718.391.3631
www.nyc.gov/dot

I - PAGES NEW SECTIONS

NOTICE

UNLESS OTHERWISE NOTED, ALL SECTIONS, SUBSECTIONS, ARTICLES, OR SUB ARTICLES AS REFERRED TO HEREIN WITHIN THESE NEW SECTION SPECIFICATIONS WILL BE THOSE OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION (NYC DOT) CURRENT STANDARD HIGHWAY SPECIFICATIONS WITH CURRENT ADDITIONS, MODIFICATIONS AND REVISIONS TO THE STANDARD HIGHWAY SPECIFICATIONS (R-PAGES).

THE STANDARD HIGHWAY SPECIFICATIONS ARE NOT INCLUDED IN THESE I-PAGES. SEE THE NYC DOT STANDARD HIGHWAY SPECIFICATIONS BOOKS FOR STANDARD SPECIFICATIONS TEXTS.

(NO TEXT ON THIS PAGE)

TABLE OF CONTENTS

(NO TEXT ON THIS PAGE)

The Section below supersedes and replaces Section 6.39 of NYC DOT Standard Specifications dated May 16, 2022

SECTION 6.39 – Mobilization

6.39.1. DESCRIPTION. Under this section, the Contractor shall set up all necessary general plant and facilities, including shops, storage areas, office and such sanitary and other facilities as are required by City, State or Federal law or regulation. Unless otherwise provided, the cost of required bonds and/or any other similar significant initial expenses required for the initiation of the contract work shall also be included in this section. The determination of the adequacy of Contractor's facilities, except as noted above, will be made by the Engineer.

6.39.2. MATERIALS. Unless otherwise specified, materials required under this section are not part of the completed contract, and may be as selected by the Contractor.

6.39.3. CONSTRUCTION METHODS. Such work as is done in providing the facilities and services under this section shall be done in a safe and workmanlike manner and must conform with any pertinent City, State or Federal law, regulation or code. The Contractor must provide facilities and services under this section that are planned and executed to ensure the maintenance of safety and good housekeeping at the construction site.

6.39.4. PRICE TO COVER.

(A) General

Payment will be made by lump sum. The amount bid will include the furnishing and maintaining of any plant, services or other facilities noted under "Description" to the extent and at the time the Contractor deems them necessary for the Contractor's operations, consistent with the requirements of this section and the contract.

(B) Payment Amounts

The Mobilization amount bid for this lump sum item will be payable to the Contractor in two Mobilization Payments – the Initial Mobilization Payment and the Remaining Mobilization Payment. The Initial Mobilization Payment will not exceed 12.5% of the Mobilization amount included in the bid schedule. The Remaining Mobilization Payment will not exceed 87.5% of the Mobilization amount included in the bid schedule.

(C) Prerequisites for Payments

Upon issuance of the Notice to Proceed, the Contractor may requisition for the Initial Mobilization Payment upon submission and approval of all required insurance certificates and bonds.

The Contractor may requisition for the Remaining Mobilization Payment when the following items are submitted and approved by the Engineer:

1. The provision of a Field Office per Section 6.40 of the NYCDOT Standard Highway Specifications;
2. The Site Safety Plan per the Safety Requirements section of the Information for Bidders;
3. The Schedule of Operations (project baseline schedule) per Section 1.06.25 of the NYCDOT Standard Highway Specifications;
4. The Progress Schedule per Standard Construction Contract Article 9;

5. Preconstruction Photographs per Section 6.43 of the NYCDOT Standard Highway Specifications are submitted to the Engineer; and
6. Construction Report per Item 76.11CR of the NYCDEP Standard Sewer and Water Main Specifications, if item is required as part of the Contract.
7. Storm Water Pollution Prevention Plan (SWPPP) per Item 9.30 of the NYCDOT Standard Highway Specifications, if item is required as part of the Contract.

(D) Adjusted Mobilization Payment

However, should the Contract be terminated or its term expires prior to completion of at least fifty percent (50%) of the original price bid for the Contract, then the Contractor will be paid a proportionate amount of this item (hereinafter referred to as the "Adjusted Mobilization Payment") based on the following formula:

$$\text{Adjusted Mobilization Payment} = \text{As Bid Mobilization Cost} \times \frac{\text{Total Actual Payments to the Contractor approved by the Engineer}}{\text{Original Total Bid Price} + \text{Approved and Registered Change Orders}}$$

Where the Contractor has already received the original total payment for this item and the Contract has been terminated or expired prior to completion of at least fifty percent (50%) of the work covered under the original price bid for the Contract, then any monies owed by the City due to the above specified reduction in payment will be withheld from the monies the City owes to the Contractor and/or the City reserves a claim to such funds from the Contractor.

(E) Bid Amount

The amount bid for Mobilization must not exceed eight percent (8%) of the total contract price, excluding the price bid for Mobilization, and in no case will payment under this item exceed the original price bid for this item.

Payment will be made under:

Item No.	Item	Pay Unit
6.39 B	MOBILIZATION	L.S.

The Section below supersedes and replaces Section 6.40 of NYC DOT Standard Specifications dated May 16, 2022

SECTION 6.40 – Engineer's Field Office

6.40.1. DESCRIPTION. The Contractor shall provide, furnish, and maintain a fully equipped field office (Type A, B, C, CU, D, DC, or DU, as specified) for the exclusive use of and occupancy by the Department's engineering personnel and/or Supervising Consultant (herein after called "City personnel"), and by the engineering personnel of private utilities when specified. The field office shall be at a location approved by the Engineer and shall be a commercial building, store front, or with the approval of both Office of Construction Mitigation and Coordination (OCMC) and the Community Board it may be a mobile trailer(s). If a trailer is used it shall be subject to approval by the Engineer, and all necessary permits shall be obtained by the Contractor. The Contractor may have facilities in an adjoining area separated by a lockable door, provided such facilities are in a location approved by the Engineer. The field office must be within ½ mile of the job site. Field offices located further than ½ mile from the job site will require approval by the Director or Assistant Commissioner for Construction.

The field office structure and occupancy thereof shall conform to the requirements of all laws, rules, regulations, and orders applicable to it.

The field office and all equipment, except as otherwise specified, may be new materials or may be used materials in good condition and satisfactory to the Engineer.

6.40.2. MATERIALS.

(A) GENERAL CONSTRUCTION. The Engineer's Field Office shall be in an approved and weatherproof building. It shall have a minimum ceiling height of seven (7') feet and be partitioned to provide the number of rooms required for the type of office specified. Floor space for Field Office Types C, CU, D, and DU shall be subdivided into work areas based on a floor plan provided by the City to the Contractor upon notification of space availability.

(B) GENERAL FACILITIES. The field office shall contain or have the following facilities incorporated:

(a) Lighting - Electric light, non-glare type luminaries to provide a minimum illumination level of 100 ft.- candles at desk height level.

(b) Heating and Cooling - Adequate equipment to maintain an ambient air temperature of 70^{o} F. $\pm 5^{o}$.

(c) Electrical Energy Outlets

(d) Toilet - A separate enclosed room, properly ventilated per code and complying with applicable sanitary codes shall contain a lavatory with a sink that provides running hot and cold water, flush-type toilet, mirror, electric hand dryer, and paper towel dispenser.

(e) Potable Water - Potable water supplied from an existing system or five (5) gallon capacity water cooler of a type to be approved by the Engineer shall be provided for use by City personnel. Replacement bottles of water shall be provided by the Contractor, when required.

(f) Signs - Store front locations shall have a window graphic sign in black and white lettering with the following inscription. Other locations shall have a wood or metal sign affixed on the outside wall of the building with the following inscription painted in black block lettering on a white background. Paints shall be approved exterior enamels.

CITY OF NEW YORK	2-1/2"
DEPARTMENT OF DESIGN AND CONSTRUCTION	3-1/2"
INFRASTRUCTURE	2-1/2"
RESIDENT ENGINEER'S FIELD OFFICE	2-1/2"

(g) Electric Refrigerator - Five (5) cubic feet minimum capacity for use by City personnel.

(h) Microwave, Toaster Oven, and Coffee Maker - Basic reheating equipment or approved appliances for use by City personnel.

(i) Windows and Doors - All windows and doors shall be weatherproof, and each equipped with adequate locking devices. Each window shall be equipped with vertical blinds. Exterior doors shall be provided with two (2) separate "high security" dead bolt type cylinder locks, keyed alike, and three (3) keys shall be furnished for each lock.

(j) Partitions - Partitions for workspace enclosures shall be either permanent walls or of the modular type similar to Herman Miller's standard fabric covered line.

(k) Kitchen Sink – Mechanism to provide non-drinking, hot and cold, running water.

(l) Security Cameras – Wi-Fi enabled security cameras must be provided at all entrances and exits, except that fire escapes / emergency stairwells do not require cameras. One security camera must be provided for the interior of the field office, with the location to be determined by the Engineer. Cameras must be minimum 1080p video resolution. Cameras must have internet cloud storage, with all videos stored for a minimum of two weeks. The cloud storage must be accessible via desktop or mobile. Cameras may be hardwired for power or battery powered; battery powered cameras must have the batteries changed by the Contractor as required to ensure no lapses of service. Signs must be posted indicating that the area is under video surveillance.

(C) OFFICE EQUIPMENT.

(a) Pencil Sharpener - One standard pencil sharpener for use by City personnel.

(b) Telephone Answering Machine - The telephone answering machine to be provided shall be an electronic digital voice machine with emergency call forwarding capability. It shall be operable twenty-four (24) hours per day and, when unattended, shall transmit to the caller the following message:

"You have reached the Field Office of the New York City Dept. of Design and Construction. No one is here now. We check our incoming messages frequently. We will get back to you as soon as possible. Please leave your name, message, and phone number where you may be reached. In case of emergency, call the New York City Hotline at 311. Again, the emergency number is 311."

All electronic voicemail messages shall be automatically forwarded as email attachments, to allow for the voicemails to be played remotely.

(c) Computer Equipment - Computers shall be provided for all contracts regardless of construction duration.

Computers furnished by the Contractor for use by City Personnel, for the duration of the contract, shall be in accordance with Table I - ADDITIONAL SPECIFIC REQUIREMENTS, contained herein, and shall meet the following minimum requirements:

(1) Personal Computers – Personal Computers must meet the requirements of the US General Services Administration (GSA) Government-Wide Strategic Solutions (GSS) Standard Laptop, Desktop, and Tablet Specifications, V7. (Available online at https://hallways.cap.gsa.gov/)

(a) Computer type for Personal Computers to be "Desktop Small Form Factor." Computer type for projector laptop to be "Lightweight Notebook" or "Notebook"

(b) The following components listed as optional in the GSA specification must be provided with each personal computer: monitor, speakers, optical drive, smart card reader, webcam, and headset.

(c) The following additional software must be provided with licenses for each computer:

1. Adobe Acrobat Pro DC or Bluebeam Revu
2. Microsoft Office Professional
3. Autodesk AutoCAD LT
4. Anti-virus software
5. Microsoft Visio (only one license required per field office)

(2) All field offices requiring computers shall be provided with the following:

(a) One (1) broad-band internet service account. See table below for minimum required upload and download speeds. Telephone service should be bundled together with Internet connectivity. Because of throughput requirements Verizon FIOS is the preferred connectivity provider where available.

Office Personnel #	**Download Speeds (*Minimum*)**	**Upload Speeds (*Minimum*)**
1 – 5	10 Mbps	15 Mbps
6 – 10	20 Mbps	15 Mbps
11 – 15	25 Mbps	15 Mbps
16 – 20	50 Mbps	15 Mbps

This account will be active for the life of the project. The e-mail name for the account shall be the NYCDDC Field Office/project Id (preferably Gmail or Outlook – e.g. HWK666@gmail.com).

(b) All necessary Cabling.

(c) Storage Boxes for and Blank CDs/DVDs.

(d) UPS/Surge Suppressor combo.

(e) 10 USB Thumb (or Flash) Drive – 16 GB each

(3) All computers required for use in the Engineer's Field Office shall be delivered, installed, and setup in the Field Office by the Contractor.

(4) All Computer Hardware shall come with a three (3) year warranty for on-site repair or replacement. Additionally, and notwithstanding any terms of the warranty to the contrary, the Contractor is responsible for rectifying all computer problems or equipment failures within one (1) business day.

(5) An adequate supply of blank CDs/DVDs, and paper and toner cartridges for the printer shall be provided by the Contractor and shall be replenished by the Contractor as required by the Engineer.

(6) It is the Contractor's responsibility to ensure that electrical service and phone connections are also available at all times; that is, the Field Office Computer(s) is to be powered and turned on twenty-four (24) hours each day.

Broadband connectivity is preferred at each field office location. Please take into consideration that an extra phone line dedicated to the modem must be ordered as part of the contract unless Internet broadband connectivity, via Cable or FiOS, is available at the planned field office location. Any questions regarding this policy should be directed to the Director of Information Technology Services at 718-391-1761.

(a) Data Access - Electronic access to the Equipment Watch Retail Rental Rates database (formerly known as The AED Green Book, published by Equipment Watch), shall be provided for all contracts that have a total Consecutive Calendar Days for General Construction duration as set forth in Schedule A of greater than 545 CCD's. Contracts of lesser duration shall not require any data access.

(D) Field Testing Equipment.

(a) Air Entrainment Meters - Pressure Type, with carrying case for use by City personnel. Each meter shall be capable of producing an accurate test result in approximately five (5) minutes and shall comply with ASTM Designation C231.

(b) Slump Test Sets - Slump cone and test sets conforming to the requirements of ASTM Designation C143, complete with rod and scoop for use by City personnel.

(c) Thermometers: For use by City personnel.

(1) 1 Minimum-maximum thermometer.

(2) 3 Asphalt thermometers of stainless-steel construction with an accuracy of 0.5% of the full scale, able to measure temperatures from 50 to 500 degrees F. in 5-degree increments.

(3) 3 Surface Thermometers able to measure temperatures of flat surfaces similar to Sargent-Welsh Model S81441-D, or an approved equivalent.

(d) Non sparking Pinch Bar - For use in opening manholes.

(e) Gas Meters - For use in detecting the presence of explosive gases and vapors for use by City personnel.

(f) Straight Edge - One 10-foot-long straight edge for use by City personnel in detecting pavement surface tolerance.

(g) 48" Smart Level - For use in determining pedestrian ramp and sidewalk slopes.

(h) Chlorine Test Kits – For testing residual chlorine levels following water main flushing.

(i) Green Florescent Power Trace-Dye – For testing sewer connections.

(j) One Million Candlepower Rechargeable Flashlight.

(k) Distance Measuring Wheel – For measuring long distances.

(E) Additional Office Electronics –

(a) Photocopying machine must be a stand-alone, heavy duty, electric, dry-process color photocopying type with color scan and send capability via e-mail, a minimum production rate of 70 pages per minute and an adequate supply of copy paper, toner, etc. The machine shall be capable of duplex copying paper sizes of 8-1/2 x 11 inches, 8-1/2 x 14 inches and 11 x 17 inches and have separate trays for each paper size. It shall have a document feeder, collator, stapler, and the capability to reduce/enlarge copies between each paper size. The supply of each size copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer. Make and model can be Minolta, Canon, IBM, Epson, or an approved equivalent, and shall be networked to the office computers for printing capability.

(b) Fax machine must be provided with an adequate supply of copy paper, toner, etc. The supply of copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer.

(c) Paper shredder must be a heavy-duty commercial grade diamond cut shredder with automatic start. The shredder shall be able to receive 8-1/2 inch wide paper and shred a minimum of 15 sheets simultaneously along with CDs and staples.

(d) Projector must be 1080p LCD with a min. of 2200 ANSI Lumens, 1920 x 1080, 16:9, 40,000:1 contrast ratio, HDMI, VGA, USB, and a 10' diagonal, 16:9 Projection Screen. A screen must be provided if directed by the Engineer. A laptop must be provided for use with the projector, and all required cables for connecting the laptop to the projector.

6.40.3. SPECIFIC REQUIREMENTS FOR ENGINEER'S FIELD OFFICE.

In addition to the general requirements, each type of Field Office shall have the minimum floor area indicated in Table 6.40-I calculated based on usable area only, excluding any loss factors. Loss factors are defined as those areas such as lobby, sidewalk window ledge, elevator shafts and stairways. The Contractor shall provide and maintain furnishings for each type of Field Office in the quantity specified in Table 6.40-I. The furnishings shall be new or used equipment satisfactory to the Engineer:

(a) Each Type shall have a minimum of one outside door and four windows.

(b) Type C shall be partitioned to provide three (3) rooms.

(c) Type CU shall be partitioned to provide four (4) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

(d) Type D and DC shall be partitioned to provide four (4) rooms.

(e) Type DU shall be partitioned to provide five (5) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

TABLE 6.40-I – ADDITIONAL SPECIFIC REQUIREMENTS

SPECIFIC REQUIREMENTS	FIELD OFFICE TYPE						
	A	B	C	CU	D	DC	DU
Minimum useable floor space (Square Feet)	400	800	1,200	1,200	1,800	2,320	1,800
Office desks, at least 4'-8" x 2'-8", with drawers, locks, and keys.	2	2	4	8 [a]	8	8	12 [a]
Swivel chairs, with arms, for the above.	2	2	4	8 [a]	8	8	12 [a]
Office folding chairs, metal, with padded seats and backs.	2	3	6	14 [b]	8	8	16 [b]
Steel supply cabinets (approximate size 72" high by 36" wide by 18" deep), with four adjustable shelves, tumbler lock and 3 keys.	1	1	1	1	1	1	1
Fire resistant cabinet, 4-drawer, legal size with lock and three (3) keys, meeting the requirements for "Filing devices, Insulated (36 E 9)" Class D Label, of the Underwriters' Laboratories, Inc. Specifications.	1	1	1	3 [c]	4	4	6 [c]
Individual lockers (17" wide x 18" deep x 72" high) with flat key locks and two (2) keys each.	1	1	4	4	4	4	4
Calculating machines, tape type with digital display registering at least ten (10) digits.	1	1	2	2	3	3	3
Wastepaper baskets (metal, approximately 12" square by 16" high).	1	2	2	6 [a]	4	4	8 [a]
Fire extinguishers, non-toxic, dry chemical type meeting Underwriters Laboratories, Inc., approval for Class A, Class B and Class C fires with a minimum rating of 2A: IOB:10C.	1	1	2	3 [d]	4	8	5 [d]
First Aid Kit kept properly stocked with appropriate first aid supplies at all times.	1	1	1	1	2	2	2

SPECIFIC REQUIREMENTS	FIELD OFFICE TYPE						
	A	B	C	CU	D	DC	DU
Drafting tables (3'-0" x 5'-0") with storage drawers and stool.	1	2	2	3 [d]	4	4	5 [d]
Photocopying Machine	1	1	1	1	1	1	1
Standalone networked color laser printer. (Not required if photocopying machine prints in color)	1	1	1	1	1	1	1
Vertical filing plan racks for six sets of 22"x36" plans each rack.	1	1	2	3 [d]	4	4	5 [d]
Telephone lines for calls, where one shall be dedicated for the Fax Machine, one for each computer fax/modem and the others for telephone instruments.	4	6	6	7 [e]	8	8	9 [e]
Telephone instruments.	2	2	3	5 [e]	4	4	6 [e]
Telephone answering machine.	1	1	1	1	1	1	1
Fax Machine	1	1	1	1	1	1	1
Personal Computer	1	3	3	3	4	4	4
Bottled water with refrigerator unit-hot/cold water. (For private utilities room.)	0	0	0	1	0	0	1
Paper Shredder	1	1	1	1	1	1	1
Projector	0	0	1	1	1	1	1
Conference Room, 320 square feet (20'x16' minimum, equipped with (2) 3'x6.5' tables and (30) chairs.	0	0	0	0	0	1	0

[a] *Provide four (4) each of Office Desks, Swivel Chairs and Wastepaper Baskets in private utilities room.*
[b] *Provide eight (8) Folding Chairs in private utilities room.*
[c] *Provide two (2) Fire Resistant 4- Drawer Legal Size Cabinets in private utilities room.*
[d] *Provide one (1) each of Fire Extinguisher, Drafting Table and Vertical File Rack in private utilities room.*
[e] *Provide one (1) telephone line and two (2) telephone instruments for the exclusive use by private utilities personnel. The line shall interconnect the two telephone instruments by push button control.*

6.40.4. CONSTRUCTION METHODS. The building shall be fully equipped and made available for use and occupancy by the Department's personnel and/or Supervision Consultant not less than thirty (30) days prior to the start of any contract work.

The building interior (including access foyers, stairwells, etc.) shall be maintained in good, clean, and sanitary working condition by the Contractor for the duration of the contract. The Contractor shall provide and pay all costs for electrical service, telephone service for calls within New York City limits, hot and cold water, heat and fuel, and daily janitor service. Staples, such as paper towels, hand soap, toilet paper, and similar supplies, shall always be available.

Where necessary, the site for a mobile trailer(s) shall be graded and shoulder stone placed and maintained as directed by the Engineer to provide a parking area for City personnel and, if necessary, an approach road shall be provided. Plumbing work shall include all water supply, drainage and piping required for the operation of a complete installation. Temporary water service shall be provided from an existing main and extended into the trailer and all fixtures requiring water supply shall be properly connected up. All necessary soil, waste, vent and drainage piping shall be provided and connected to the existing sewer or as otherwise directed.

The office, incorporated facilities, equipment, and personal property of the Department's employees shall be protected by the Contractor against loss or damage from fire, theft, or other causes, at all hours of the day and night. The Contractor shall provide fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of forty thousand dollars ($40,000.00) for office equipment of the City of New York in the Engineer's field office and for property of City personnel that is used in the contract work and stored in the office. All insurance coverage shall be written by a company

approved by the Commissioner and payable in case of loss to the City of New York. The office shall be maintained by the Contractor in first class condition until final acceptance of the work.

At the direction of the Engineer, any equipment on the above lists may be deleted. The Engineer may direct that other equipment of equivalent value be supplied by the Contractor or an appropriate credit be taken for the value of equipment not provided.

When directed by the Engineer, the Contractor shall disconnect all services and remove and dispose of all temporary installations from the site, including fencing, surfacing and utilities, the area shall then be cleaned, loamed, and seeded if required and left in a neat and acceptable condition. On and after the date of the Engineer's Final Acceptance, the temporary structure and all installed equipment shall become the property of the Contractor, and shall be disposed of, by him, away from the site of the work. Engineer's Final Acceptance shall be when the Contractor has completed all punch list work and Official Completion Date has been set.

6.40.5. NONCONFORMANCE. No payment will be made under Engineer's Field Office for each calendar day during which there are deficiencies in compliance with the requirements of any subsection of this specification. The first calendar day shall commence twenty-four (24) hours after notice to the Contractor of such a deficiency. This non-payment shall be deducted from the Contractor's next estimate as a charge to the Contractor on the item. The amount of such calendar day non-payment will be determined by dividing the unit price bid per month by 30.

In addition, the Contractor may be subject to liquidated damages in accordance with Schedule A.

6.40.6. MEASUREMENT. The quantity to be measured for payment under this item shall be the number of months that the Field Office is available for occupancy by the Field Engineers during the period of the contract. Payment will begin the first month that the office is fully equipped, serviced as specified, and made available for occupancy. The Field Office is to be continuously made available and monthly payments will continue for the duration of the contract through a period not to exceed 6 months past the Substantial Completion date. When directed in writing by the Commissioner, the Field Office will be provided and paid for a period of time beyond 6 months past the Substantial Completion date. Payment for each month's occupancy after the date of Substantial Completion acceptance will be made as part of the final estimate. Monthly payments may be terminated on a specified date prior to acceptance of the contract by written notification by the Engineer that such office will no longer be required on the contract.

In order to incentivize early Substantial Completion of the Project, the City agrees to share the savings resulting from the reduction of the quantity measured for payment under this item.

If the determination of Substantial Completion is reached at least two (2) months earlier than the Substantial Completion date set forth in the Notice to Proceed letter, plus any approved time extensions, the Contractor and the City will evenly split the saved amount. This payment will be in addition to any payments of incentive for early completion if one is specified for the Project.

For example, using a contract with a 30-month duration for achievement of substantial completion, with the Engineer's Field Office directed by the Commissioner to remain open six (6) months after the substantial completion date per Subsection 6.40.6 above, the following would apply under these two scenarios:

1. Project substantial completion is achieved in 28.5 months: Because the contract was completed within two (2) months of the scheduled substantial completion date, the contractor is entitled to be paid for the 28.5 month project duration plus the six (6) months after Substantial Completion, amounting to 34.5 months to be paid to the Contractor for the Engineer's Field Office, with no additional amounts due to the contractor from any savings.
2. Project substantial completion is achieved in 26 months: Because the contract was substantially completed more than two (2) months early, the contractor is entitled to be paid for the 26 month project duration plus six (6) months after substantial completion plus half of the four months saved, amounting to 34 months to be paid to the contractor for the Engineer's Field Office.

6.40.7. PRICE TO COVER. The unit price bid per month for the item Engineer's Field Office shall include the cost of furnishing all labor, materials, equipment, ground rental, fire and theft insurance, and utility charges necessary to complete the work of providing or constructing the field office; making all necessary electrical, water, sewer, and other connections required to make the above facilities operative; payment of all rental costs; furnishing and paying for heating fuel, as required; all electrical energy; private telephone services; staples, as specified; and all necessary incidentals to complete the work - all in accordance with the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.40 A	ENGINEER'S FIELD OFFICE (Type A)	MONTH
6.40 B	ENGINEER'S FIELD OFFICE (Type B)	MONTH
6.40 C	ENGINEER'S FIELD OFFICE (Type C)	MONTH
6.40 CU	ENGINEER'S FIELD OFFICE (Joint Use) (Type CU)	MONTH
6.40 D	ENGINEER'S FIELD OFFICE (Type D)	MONTH
6.40 DC	ENGINEER'S FIELD OFFICE WITH CONFERENCE ROOM	MONTH
6.40 DU	ENGINEER'S FIELD OFFICE (Joint Use) (Type DU)	MONTH

The Section below supersedes and replaces Section 7.13 of NYC DOT Standard Specifications dated May 16, 2022

SECTION 7.13 – Maintenance of Site

7.13.1. DESCRIPTION. This section describes the maintenance, protection, and cleanup of the construction site. The Contractor is placed on notice that a safe and clean site throughout all phases of the work and during all operations must be provided by the Contractor, and further that the monitoring by the City of the Contractor's site maintenance, site protection and site cleanup is considered for the purposes of the contract to be a Project objective necessary to eliminate and/or mitigate public disruption and inconvenience, and to insure public health and safety. The Contractor shall therefore, at all times, conduct this operation in a manner which promotes a clean site and ensures the convenience, safety and health of general users consisting of, but not limited to, the motorist, the pedestrian, and the abutting property owners/tenants, as well as those of the Contractor's employees. This includes compliance with the Contractor Code of Conduct in **Section 1.06.19**.

The provisions of this section are supplementary to and do not abrogate the General Conditions (Section 1.06) or the General Notes on the Contract Drawings relating to the protection and cleanup of the site, and the delivery and storage of materials at the site. Furthermore, any conditions pertaining to the maintenance, protection, and cleanup of the construction site during the life of the contract which are addressed in the General Conditions and in the General Notes on the Contract Drawings, whether or not addressed under this Section, shall be deemed as having been addressed under this Section.

7.13.2. METHODS.

(A) GENERAL

Work under this Item shall start from the date of written notice to commence work or from the actual start of construction work at the site, whichever is later.

The Contractor shall be responsible for the maintenance of the contract streets or portions of streets pursuant to Article 7 of the Standard Construction Contract.

The Contractor shall provide the necessary personnel and equipment for adequate site maintenance within and adjacent to the contract site and all detour routes. The Contractor shall keep the work site and adjacent areas free and clean from all rubbish, debris, dust, idle construction equipment, discarded or leftover construction material and excavated material as outlined below. The Contractor shall also keep all haul routes outside the work site free and clean from all rubbish, debris and dust resulting from the Contractor's operations.

The Contractor shall protect the public from damage to persons and property, which may result directly or indirectly from any construction operation. Such protection shall include, but not be limited to, providing proper street drainage and diversion of runoffs from private properties by such means as sandbagging or pumping, controlling soil erosion and/or soil migration.

All existing Fire Department Communication facilities shall be protected, and provisions made for their continuous operation during construction. ALL ALARM BOXES AND POSTS MUST REMAIN ACCESSIBLE. If, due to the Contractor's operations, Fire Alarm Service is inadvertently interrupted or Fire Communication System equipment or facilities are damaged, the Contractor will be held responsible and shall replace them at its own expense and in accordance with Fire Department requirements.

The Contractor shall be fully responsible for maintaining the completed work in an acceptable condition and protecting the completed work until relieved of such responsibility by acceptance of the contract or the completed items of work. Upon completion of each phase of work, or when ordered by the Engineer, and before acceptance and final payment are made, the Contractor shall remove all surplus and discarded material, rubbish, equipment, debris, and temporary structures from the site, and restore the working site as directed by and to the satisfaction of the Engineer. All sewers, water mains, appurtenant structures, etc., shall be clean, free from debris and deposits.

(B) MAINTENANCE OF STREETS

Maintenance of streets and detours for vehicles shall include any repairs, as directed, including the filling of pre-existing and new potholes that may be necessary due to usage of streets by traffic. This repair work will be paid for under Item No. 4.02 CB - ASPHALTIC CONCRETE MIXTURE, or 4.02 CA - BINDER MIXTURE, as provided in the Bid Schedule.

Also, the Contractor shall provide reasonably safe and convenient walkways and passageways for pedestrian traffic. Where required by the Contract Documents or when ordered by the Engineer, the Contractor shall construct and maintain, as directed, temporary asphalt walkways and ramps in accordance with the requirements of Subsection 7.13.2.(G)(1), below, temporary wood plank or steel plate ramps or other configurations and materials, as may be required, and provide temporary pedestrian passageways (as per the NYC Department of Transportation's Standard Details of Construction, Standard Drawing H-1004, or as otherwise approved). The Contractor shall make the surface(s) of the pedestrian pathway(s) safe by eliminating ponding conditions, removing debris, sweeping, and wetting for dust control. All walkways and passageways must be in compliance with all ADA requirements.

The Contractor shall maintain access to all abutting properties and pedestrian usage of sidewalk areas, both old and new, at all times, as directed by the Engineer and as shown on the Contract Drawings, except at "Sidewalk Closings" as designated or as directed.

The Contractor shall maintain the traveled way in such a condition and conduct operations in such a manner that snow, and ice may be readily removed by others as and when necessary, and in such a manner that proper drainage is provided for the melting of snow in the banks resulting from normal plowing. However, the Contractor will not be responsible for snow or ice removal on the pavement or traveled way opened for public usage, except within the limits of the work zone(s) which may include, but is not limited to, stairway, promenades, esplanade areas, and sidewalk, including those fronting the Contractor's office and the Engineer's field office all of which will be the responsibility of the Contractor. In order to minimize the amount of salts entering the storm sewer system, snow melt must not be used in place of shoveling, but must be used after all standing snow is removed. This does not prohibit applying reasonable amounts of snow melt prior to snowfall.

(C) CONTROL OF DUST AND DEBRIS

The Contractor shall control dust and debris within the work area and the traveled way. The Contractor shall mitigate material spilling from trucks with the use of tarpaulin covers. All dust producing materials shall be wet down with water to the extent necessary to minimize dust. When public or local inconvenience is caused by dust occasioned by the sweeping and cleaning operations, the Contractor shall furnish and sprinkle water onto the affected surfaces during the sweeping and cleaning operations; however, the application of water shall not be used as a substitute for sweeping.

The Contractor shall perform all work operations so that dust and debris is minimized within the work zone and mitigated before any of it leaves the work zone. Movement of dust and debris by wind, vehicles, persons, and the Contractor's operations shall be cause for sweeping and watering to be implemented immediately as directed by the Engineer. Also, should dust and dirt cover over all or portions of the work site it shall also be cause for immediate sweeping and watering by the Contractor.

All water furnished and applied under this item shall be free from harmful materials and shall be reasonably clean. Water shall be delivered in tanks or tank trucks, or by use of hydrants as permitted by the Department of Environmental Protection; however, no guarantee is made by the City as to the availability of suitable hydrants at the site. Where no suitable hydrants exist at the site, the Contractor shall be required to furnish water in tanks or tank trucks at no additional cost to the City.

(D) CLEANING OF SITE AND WASTE DISPOSAL

The Contractor shall be responsible for the removal of all rubbish and debris from the site of the project. The Contractor shall remove all piles of rubbish, debris, waste material and wood cratings as a result of the Contractor's operations as they accumulate. When directed by the Engineer the Contractor shall cart them away from the site. The Contractor shall employ and keep engaged for this purpose an adequate force of laborers.

The Contractor shall at the beginning and end of each day be required to pick up all litter, trash, and debris (excluding garbage and recycled material set to be picked up by scheduled private and/or public sanitation pickups) adjacent to and within the work zone on a daily basis, seven (7) days a week. The Contractor shall also during the day keep clean all roadways, sidewalks and other places in which the work is being performed or which are to be used in connection therewith.

The Contractor shall protect the site against unauthorized dumping of waste materials by patrolling the site and reporting violations to the Engineer, and should any unauthorized dumping occur, it shall be immediately removed by the Contractor to the Engineer's satisfaction.

While performing the above site cleaning work, the Contractor shall have available an approved mechanical street sweeper, with operator, suitable for removing dirt, debris, dust and loose stones; a sprinkler truck; adequate size pick-up truck with driver and laborers; an adequate supply of brooms, sixteen (16) inch wide or larger; and necessary hand tools and materials. The Contractor shall arrange to have necessary persons and equipment assigned to satisfy concerns relating to required clean up and restoration work. These persons with equipment shall be available to correct all matters requiring attention and shall be immediately available to respond to directives issued by the Engineer regarding specified problems of maintenance and cleaning.

The Contractor shall perform this work during the normal or extended working days. However, when required in accordance with the approved schedule or directed, the Contractor shall be prepared to extend this work beyond the normal workday, including weekends.

The Contractor shall provide trash receptacles for use by its construction staff. The trash shall be periodically removed and disposed of in compliance with local ordinances.

(E) DISPOSAL OF REMOVED MATERIALS

Except as may be otherwise specified herein or in the General Conditions, all materials which are permanently removed from the existing construction by the Contractor in accordance with the Contract Documents shall become the Contractor’s property and shall be disposed of by him away from the site.

In addition, it is the intent of NYCDDC to have all metals that are excavated and removed from the site, such as iron castings street hardware (i.e., manhole frames and cover, valve box covers, hydrants, etc.), ductile iron sewer pipe, steel and ductile iron water main pipe, trolley track rails, etc. (excluding steel reinforcement embedded in concrete), recycled provided that they are not deemed contaminated or hazardous. Therefore, the Contractor shall agree to make every effort possible to recycle said metals removed from the site. As a record of such compliance, the Contractor shall be required to keep an accurate log of said materials that are excavated and removed from the site and where and how said materials are either processed for reuse or disposed of away from the site. A copy of said log shall be submitted to the Engineer along with the invoice submitted by the Contractor for payment each month.

(F) REMOVAL OF SURPLUS PLANT AND EQUIPMENT

When ordered by the Engineer, the Contractor shall be required to promptly move from any location within the contract area all such items of plant and equipment determined to be no longer necessary for the effective prosecution of the work at such point, to other locations to be designated by the Engineer. If, in the opinion of the Engineer, plant and equipment are no longer required on any portion of the work, they shall be removed from the site when so ordered.

Where access to regularly scheduled private and/or public sanitation pickups, such as garbage and recycled materials, is blocked due to the Contractor’s operations, the Contractor shall coordinate a schedule for collection of said materials, and/or shall collect and transport garbage and recycled materials to collection points, as directed by the Engineer, for disposal by public or private collections, as appropriate.

Waste material shall not be dumped in or on any part of the City's property except by special permission of the Engineer. Concrete mixing trucks shall not be washed on City streets nor shall the waste material from the washing out of concrete mixing trucks be discharged to any street, public property, sewer manhole, catch basin, sewer, street gutter, or other above or below ground structures. All excavated materials falling on roadways and sidewalks shall be promptly swept up and removed.

(G) MAINTAINING ACCESS TO PROPERTIES AT CUT AND FILL LOCATIONS

When it is necessary to cut or fill at abutting properties in accordance with the contract requirements, the Contractor shall immediately commence construction to provide entrance to and egress from said properties as shown on the Contract Drawings and/or by one of the following methods, or modifications made thereto, when so ordered by the Engineer:

(1) "Asphalt Ramps"

Temporary access ramps shall be made hard and smooth surfaced with asphaltic material (to be paid for under Item No. 4.02 CB or 4.02 CA, as provided in the Bid Schedule) The slope of temporary ramps at driveways and transition areas shall be approximately 25% [approximately a three (3") inch rise in one (1') foot] and be limited to a width of not more than eight (8') feet for single driveways and not more than twelve (12') feet for double driveways. The slope of temporary ramps at street hardware shall range between 1:10 and 1:6 (rise:run). The slope of temporary pedestrian ramps shall be limited to a width of not less than four (4') nor more than five (5') feet and a slope of approximately 1:12.

(2) "Benching"

In locations where embankments are to be constructed on existing slopes or against existing embankments with slopes steeper than 1 (vertical) on 3 (horizontal), slopes shall be benched as shown on the Contract Drawings. Benches shall be constructed as a "Temporary Retaining Wall" (Item No. 8.12). Access to abutting properties shall be provided as shown on the Contract Drawings or as per the details shown on the NYC Department of Transportation's Standard Details of Construction, Standard Drawing for Temporary Wooden Steps (Item No. 7.15).

(3) "Specified"

By methods specified and detailed on the Contract Drawings.

(H) FINAL CLEARANCE OF SITE

Immediately after the completion of the contract and before final acceptance of the Work by the Department, the Contractor shall remove all surplus material, temporary structures, and debris resulting from the Contractor's operations. Any painted markings (layout survey, etc.), excluding utility markings made under 16 NYCRR Part 753 (utility markings made under Part 753 shall not be removed), that have been placed by the Contractor and which are still remaining at the end of the contract shall be removed. Removal of painted markings shall be done using an approved power-washing method. The entire area shall be cleared and left in a neat presentable manner satisfactory to the Commissioner.

If as a result of the Contractor's operations, obstructions have fallen into a navigable waterway, they must be removed and the waterway and channel cleared; and the Contractor must obtain a release from the United States Coast Guard.

7.13.3. STORAGE OF MATERIALS AND EQUIPMENT. Roadways, sidewalks, gutters, crosswalks, and driveways shall at all times be kept clear and unobstructed unless a permit has been obtained from NYC Department of Transportation authorizing encumbrance of the roadway and/or sidewalk with equipment and/or material, provided it is in a manner which will not prevent the safe passage of vehicular traffic on such roadway designated to remain open, or the safe passage of pedestrians on such sidewalk and crosswalks, or block the normal drainage flow within the streets.

(A) DELIVERED MATERIALS NOT TO OBSTRUCT TRAFFIC

All materials delivered upon but not placed in the work shall be neatly piled so as not to obstruct public travel and shall be removed from the line of the work, at the direction of the Engineer, at no additional cost to the City. Unless the materials are so removed by the Contractor upon notice from the Engineer, the materials may be removed by the Commissioner and the expense thereof charged to the Contractor.

(B) PILING OF MATERIALS DELIVERED TO WORK SITE

Materials placed on the sidewalk or roadway shall be piled or stacked in a satisfactory and safe manner, enclosed with plastic barrels (Section 6.87) or barricades (Section 6.28 AA or 6.28 BA), and with pedestrian steel barricades (Section 7.36), "WARNING: KEEP OUT" signs (Section 6.25), and heavy duty safety orange construction fencing. The heavy duty safety orange construction fencing shall be safety orange in color, of heavy duty construction grade flexible plastic (light duty plastic screening fence will not be accepted), have a minimum height of four (4') feet, and shall be of a type approved by the Engineer. The heavy duty safety orange construction fencing shall be held vertically in place for its full length and shall be securely attached to barrels, utility poles, or a combination thereof, or other traffic control devices shown on the Contract Drawings or directed, in a manner approved by the Engineer. Loose materials shall be covered with tarpaulins, suitably held down. Areas adjacent to stored materials shall be kept clean and watered as required and as directed by the Engineer. When such materials are removed, the sidewalks and roadways must be immediately swept clean by the Contractor and control of dust shall be mitigated in accordance with the requirements of Subsection 7.13.2.(C), above.

Materials to be used in the work shall be compactly piled within limits to be designated by the Engineer. Sand and coarse aggregate may be piled within the roadway area. All old and such new material as has been approved, except sand and coarse aggregate, shall be neatly piled by the Contractor on the front half of the sidewalk, on planks or plates, if the same be flagged or otherwise improved.

Stored material shall be neatly stacked, placed at locations designated by the Engineer, and suitably enclosed or covered, protected, and wet down, as stipulated above. Streets under such construction material or equipment shall be shielded by wooden planking, skids or other protective covering approved by the Engineer. All pipes, fittings and appurtenances must be carefully stored, as approved by the Engineer, so as to prevent surface drainage, excavation material or other foreign matter from entering into the pipes, fittings and appurtenances.

Waste material and excavated material will under no conditions be permitted to remain on the work site or

Provisions must be made by the Contractor to maintain curb-line drainage through storage areas. Stored materials shall not block the normal drainage flow or cause ponding conditions within streets and shall not be placed within fifteen (15') feet of any fire hydrant (working or not), at bus stops, within tree root zone areas, or any other areas as set forth in the rules of the department the obstruction of which would impair the safety or convenience of the public (also see General Notes on Contract Drawings for any additional information). In a street upon which there is a surface railroad, construction materials or equipment shall not be placed nearer to the track than five (5) feet.

The Contractor shall not be permitted to store, stockpile or lay down any construction material within the boundaries of tree pits or critical root zone (CRZ) of existing trees. This material includes but is not limited to lumber, fuel and oil containers, pipes, pipe fittings, barricades, hand tools, hoses, hardware, bricks, salvaged stone or granite, trash receptacles, or asphalt. Bulk material, equipment, or vehicles shall not be stockpiled or parked within the CRZ of any tree, or within ten (10') feet of the trunk (whichever is greater). This is done to minimize surface and subsurface root and soil compaction. This applies to all CRZs within or outside the project limit line. CRZ is calculated as (DBH x 1.5 ft = Radius). The radius calculation is equal to the critical root zone.

When no work is in progress, at least one half of the roadway must be left clear at all times.

The Contractor must remove any stored materials/equipment from the project street(s), as directed by the Engineer, within forty-eight (48) hours' notice, at no additional cost to the City. Payment for compliance with such a directive shall be deemed included in the unit price bid for this "Maintenance of Site" item.

(C) ILLUMINATION OF BUILDING MATERIAL AND EQUIPMENT ON STREETS

Pursuant to Section 19-121 of the Administrative Code of the City of New York, the Contractor's attention is directed to the following:

1. Whenever a permit is issued for any construction material or equipment, the outer surface of such construction material or equipment shall be clearly marked with high intensity fluorescent paint, reflectors, or other marking which is capable of producing a warning glow when illuminated by the headlamps of a vehicle or other source of illumination.

2. Each approved storage area shall have at least one (1) sign identifying the Contractor's name, Project ID/Name, and the phone number of the Engineer's Field Office.

3. Violations. Any person who shall violate any of the above provisions, upon conviction thereof, shall be subject to the Criminal penalties pursuant to Section 19-149 of the Administrative Code of the City of New York or Civil penalties pursuant to Section 19-150 of the Administrative Code of the City of New York, or both such fines and imprisonment.

(D) STORAGE WITHIN THE PROJECT LIMITS

The Contractor will not be permitted to store construction equipment, construction material or excavated material within the project limits, except where specifically approved by the Engineer and only under the following conditions:

The Contractor will not be permitted to allow the personal vehicles of the Contractor's work force to be stored, parked, or to stand within the limits of any designated work area or in "no parking", "no standing", and/or other restricted zones; vehicles so stored, parked, or found standing may be ticketed and/or towed at the owner's expense. This restriction shall exclude Contractor owned vehicles transporting and/or storing specialized equipment and/or materials necessary for the execution of ongoing contract work, as approved by the Engineer. The Contractor shall be responsible for properly notifying the Contractor's work force of these restrictions.

Payment for traffic control devices such as plastic barrels, barricades, pedestrian steel barricades, and warning signs used to enclose stored materials and equipment within the project limits will be paid for under the appropriately scheduled items; however, when no appropriately scheduled item or items are provided in the bid schedule, the cost of those items shall be deemed included under all scheduled items.

Materials stored on site shall be "Installed in Place" within two (2) consecutive working days of delivery to the job site, unless otherwise specified or permitted by the Engineer. (Construction supervisor will be required to maintain accurate records of all delivery dates.) No material shall be stored on site during construction shutdowns and/or stoppages scheduled to last more than five (5) consecutive working days.

(E) STORAGE OUTSIDE THE PROJECT LIMITS

The Contractor may be permitted to occupy off site street/roadway areas for material storage, subject to their availability and conformance with City wide permitting requirements for storage of materials; however, this neither implies nor guaranties the Contractor the availability and/or approval of any off site street/roadway areas.

Materials and/or equipment must be stored safely and neatly as specified above, with appropriate Maintenance and Protection of Traffic devices separating the storage area from vehicular traffic and pedestrians. Loose materials must be properly and neatly stored.

No separate payment will be made for providing off site storage site(s) where approved or for providing any traffic control devices used for off-site storage, the cost of which shall be deemed included under all scheduled items.

7.13.4. NONCONFORMANCE. No payment will be made under Maintenance of Site for each calendar day during which there are deficiencies in compliance with the foregoing specification requirements, as determined by the Engineer and made evident by the Engineer's failure to sign documents each day approving payment to be made under this item.

The amount of such calendar day non-payment will be determined by dividing the unit price bid per month by thirty (30).

If the Contractor fails to maintain and protect the site, or any portion thereof, adequately and safely for a period of three (3) or more consecutive hours, the Engineer may correct the adverse conditions by any means deemed appropriate, including, but not limited to, "outside services," and shall deduct the cost of the corrective work from any monies due the Contractor. The cost of this work shall be in addition to the nonpayment for site maintenance listed above.

However, where continued nonconformance with the requirements of this specification is noted by the Engineer, and prompt Contractor compliance is deemed not to be obtainable, all contract work may be stopped by direct order of the Engineer, regardless of whether corrections are made by the Engineer as stated in the paragraph above.

Furthermore, in addition to the remedies specified above, in the event the Contractor shall fail to comply, within three (3) consecutive hours after written notice from the Engineer, with the requirements of the contract and the specifications in the matter of providing facilities and services for the maintenance, protection and cleanup of the construction site, the Contractor shall pay to the City of New York, until such notice has been complied with or rescinded, the sum shown per calendar day in Schedule A, for each instance of such failure, as liquidated damages and not as a penalty, for such default.

Any money due the City of New York under this provision shall be deducted from the amounts due or to become due to the Contractor for work performed under the contract.

7.13.5. MEASUREMENT.

(A) MAINTENANCE OF SITE (LUMP SUM)

Payment will be made by lump sum.

(B) MAINTENANCE OF SITE (PER MONTH)

The quantity to be measured for payment under this item shall be the number of months (to the nearest 1/4 month increment) that the Contractor satisfactorily provides for the Maintenance of Site in accordance with these specifications, including winter shut down, holiday embargo, and other work suspension periods for which the Contractor remains responsible for site maintenance. Measurement for this item shall not begin until actual construction work is started at the site.

Periods where the Contractor is demobilized and not continuing the site maintenance will not be measured for payment. The Engineer will provide written notice two weeks in advance that the Contractor is being deemed to be demobilized. For the avoidance of doubt, reduced activity during winter shutdowns, holiday embargos, and other work suspension periods as shown on the Contractor's approved CPM schedule do not count as demobilization, provided the Contractor continues to be responsible for site maintenance and responsive to notifications of nonconformance per **Subsection 7.13.4** above. Should such nonconformance occur during periods of demobilization, the liquidated damages described in **Subsection 7.13.4** above may be assessed during periods where maintenance of site is not being measured for payment.

In order to incentivize early completion, the City agrees to share the savings resulting from the reduction of the quantity measured for payment under this item.

If the determination of Substantial Completion is reached at least two (2) months earlier than the Substantial Completion date set forth in the Notice to Proceed letter, plus any approved time extensions, the Contractor and the City will evenly split the saved amount. This payment will be in addition to any payments of incentive for early completion if one is specified for the Project.

For example, using a contract with a 30-month duration for achievement of substantial completion, the following would apply under these two scenarios:

1. Project substantial completion is achieved in 28.5 months: Because the contract was completed within two (2) months of the scheduled substantial completion date, the contractor is entitled to be paid the 28.5 month project duration for the Maintenance of Site, with no additional amounts due to the contractor from any savings.
2. Project substantial completion is achieved in 26 months: Because the contract was completed more than two (2) months prior to the scheduled substantial completion date, the contractor is entitled to be paid the 26 month project duration plus half of the four months saved, amounting to 28 months to be paid to the contractor for the Maintenance of Site.

7.13.6. PRICE TO COVER.

(A) MAINTENANCE OF SITE (LUMP SUM)

The lump sum price bid for Maintenance of Site shall include the cost of furnishing all labor, materials, plant, equipment, insurance and incidentals required to maintain, protect and clean up the site, all in accordance with the Contract Drawings, these specifications, and the directions of the Engineer. Payment will be made in proportion to the percentage of actual contract completion. The final payment for this item will be in direct proportion (whether higher or lower) to the final contract value as compared to the original contract value.

(B) MAINTENANCE OF SITE (PER MONTH)

The unit price bid per month for Maintenance of Site shall include the cost of furnishing all labor, materials, plant, equipment, insurance and incidentals required to maintain, protect and clean up the site, all in accordance with the Contract Drawings, these specifications, and the directions of the Engineer.

Where no separate item is provided for this work, the cost thereof shall be deemed to be included under all scheduled items.

Payment will be made under:

Item No.	Item	Pay Unit
7.13 A	MAINTENANCE OF SITE	L.S.
7.13 B	MAINTENANCE OF SITE	MONTH

SECTION 7.35 - PEDESTRIAN CHANNELIZER

7.35.1. INTENT.

This section describes the work of providing interlocking Pedestrian Channelizers to be used as temporary pedestrian access route between pedestrian and construction work areas when directed by the Engineer.

Pedestrian channelizer must provide the same level of pedestrian guidance as concrete or plastic barrier, but should be light weight, easier to transport, install and remove with interlocking arrangements.

7.35.2. MATERIALS.

The work will consist of furnishing, maintaining, relocating, and removing Pedestrian Channelizer in sidewalk areas as per the specifications, as shown on the Contract Drawings, or where otherwise directed by the Engineer.

Pedestrian Channelizer units must meet the requirements of the following standards:

a. 2010 ADA Standards for Accessible Design

b. 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

c. 2009 Manual on Uniform Traffic Control Devices (MUTCD), with FHWA Revisions and NYS Supplements

Product should meet the crash test and evaluation criteria contained in the American Association of State Highway and Transportation Officials' (AASHTO) Manual for Assessing Safety Hardware (MASH) and have a FHWA acceptance letter.

Acceptable products include:

a. ADA PEDESTRIAN BARRICADE – STRONG WALL by PLASTICADE

b. ADA COMPLIANT PEDESTRIAN BARRICADE like Safety Rail & Safety Wall by PSS

c. Urbanite 57000 Series by Urbanite

d. Plastic Safety System Safety Wall by PAUL PETERSON SAFETY DIVISION.

e. Or approved equivalent

Battery operated flashing units as approved by the Engineer.

7.35.3. METHODS.

Pedestrian Channelizer units of the various sizes required must be furnished to the site, complete, ready to use. All units must be in good condition and acceptable to the Engineer. Pedestrian Channelizer installed must meet the requirements of the standards listed in **Section 7.35.2** above.

The Contractor must install pedestrian channelizer by placing them where shown on the Contract Drawings or where otherwise directed by the Engineer. Adjacent units must be interlocked. Weights (sand or water ballast in the unit, sandbags, concrete blocks, etc.) must be used per the manufacturer’s recommendations, as necessary to ensure stability, or as directed by the Engineer. Weights must not interfere with pedestrian travel.

The minimum number of interlocked barricade units in a given run must be two (2), unless otherwise approved by the Engineer. Where less than three (3) units are required and approved by the Engineer, additional measures must be taken by the Contractor to stabilize the shorter length of interlocking barricade and prevent overturning.

At corners, units four (4) feet or less in length must be used to form smooth curved runs of barricade.

Contractor must continuously maintain the temporary pedestrian steel barricades, where shown on the Contract Drawings or directed by the Engineer, until ordered by the Engineer to remove the barricades at the completion of a work stage. Should a unit or units of barricades become damaged or otherwise unacceptable to the Engineer, the Contractor must replace said units within twenty-four (24) hours of notice by the Engineer, at no additional cost to the City.

Battery operated flashing units will be installed on every alternate pedestrian channelizer or as approved by the Engineer.

7.35.4. MEASUREMENT.

The quantity to be measured for payment will be the number of linear feet of Pedestrian Channelizer constructed and placed, complete, based upon the summation of the lengths of the individual units so constructed and placed.

Payment will be made for only the initial installation at any location. Whenever Pedestrian Channelizer are moved to a new location, as required by the Contract Drawings or directed by the Engineer, payment will be made in the same manner as if it were an initial installation. Whenever the Contractor proposes to move Pedestrian Channelizer to a new location, it is subject to approval of the Engineer and must be in accordance with the latest approved progress schedule. Minor movement of the pedestrian channelizer within a work area will not be considered as a movement to a new location and will not entitle the Contractor to additional payment. Minor movement within a work area includes, but is not limited to

- Movement from one side of the roadway to the other side
- Movement to adjust the roadway or work zone width
- Movement required to access the work zone or to secure the work zone
- Linear movement of less than one block within an established work zone
- Rearrangement within a work area

No payment will be made: for non-interlocked units of barricade; for barricade units greater than four (4') feet in length used in corner quadrants; for movements of pedestrian channelizer made for the Contractor's convenience; for movement of barricades at a given location at the end of a work period and subsequent replacement at the same location at the beginning of the next work period; for movement of barricades at a given location during a work period and subsequent replacement at the same location during the same work period; or for the interchanging of barricades between initial installations.

7.35.5. PRICE TO COVER.

The contract price bid per linear foot for PEDESTRIAN CHANNELIZER will cover the cost of furnishing all labor, materials, plant, equipment, insurance, battery operated flashing units and necessary incidentals required to furnish, install, maintain, relocate, and remove PEDESTRIAN CHANNELIZER, complete with weights for stability, in accordance with the Contract Drawings, the specifications, and the directions of the Engineer.

Where there is no scheduled item for temporary Pedestrian Steel Barricades, the cost of furnishing, installation, maintenance, relocation, and subsequent removal of PEDESTRIAN CHANNELIZER as required will be deemed included in the unit price bid for the Maintenance and Protection of Traffic Item.

Payment will be made under:

Item No.	Item	Pay Unit
7.35	PEDESTRIAN CHANNELIZER	L.F.

SECTION 7.70 TPR – TEMPORARY PEDESTRIAN RAMP (Not a Pay Item)

7.70TPR.1. INTENT.

This section describes the work of providing Temporary Pedestrian Ramps (TPRs) near new pedestrian construction work areas and the ADA guidelines. TPRs must provide access to sidewalk routes when pedestrian ramps are not accessible due to construction activities going on or around pedestrian ramps.

The work will consist of furnishing, installation, maintaining, relocating, and removing TPRs in order to access sidewalk areas as shown on the Contract Drawings or where otherwise directed by the Engineer.

TPRs must consist of temporary pedestrian ramp units having a geometry similar to that shown on the Contract Drawings, as directed the Engineer and complying with the following requirements:

a. TPR running slope must not exceed 1:12 ramp slope, which equals 4.8 degrees slope or one foot of wheelchair ramp for each inch of rise. For instance, a 30-inch rise requires a 30-foot handicap wheelchair ramp.

b. Cross slope must not exceed 1:48.

c. Handrails must be provided on both sides if rise is more than 6 inches.

d. A minimum 5' x 5' flat, unobstructed area at the top and bottom of the ramp

e. A Minimum width of 36 inches of clear space across the wheelchair ramp.

f. A Maximum run of 30 feet of ramp will be allowed before a rest or turn platform.

g. Ramp handrail height will be between 34" and 38" in height on both sides of the wheelchair ramps.

h. The TPR must allow for normal street drainage.

7.70TPR.2. MATERIALS AND METHODS.

(A) LUMBER TPR: Lumber must have a slip-resistant surface. Use pressure treated wood for most of the wood material. Lumber must be preservative-treated southern pine, grade #2 or better. Pressure treated lumber must resists rot and decay with level of treatment as per American Wood Council latest standards. Decking board for the TPR will be at a minimum 2” thick.

(B) ALUMINUM TPR: Aluminum must be high traction (e.g., textured extruded aluminum surface), dock plate with a coefficient of friction not less than 0.5 and made from high strength, lightweight aluminum; it must be slip-resistant and have a self-adjusting ground transition plate. The Ramp, Step, and Platform system is designed to be a rigid, free-standing structure. All footplates must be fastened securely to a concrete surface or 12” minimum diameter footings in order to achieve full structural integrity. Footing depth will depend on local building code.

Fastening all platforms to the building or modular building with lag screws is highly recommended.

(C) FIBERGLASS/PLASTIC TPR: Fiberglass/ Plastic ramps must be able to take minimum wheelchairs, foot traffic etc., not less than 550 lbs., must be ADA compliant and adapts to varying curb heights from minimum of 2.5" to 7". Must be anti-slip with high visibility surface and must be bolted for maximum stability and security. Coefficient of friction will not be less than 0.5.

All ramp handrails and ramp guardrails are designed to withstand a concentrated load of 200 pounds applied in any direction on the top of the rail.

All ramp handrails are designed to be continuous along ramp runs and in between the inside corner of 90 degree and 180 degree turns in ramp direction. Handrails are not interrupted by posts or other obstructions.

Platforms and landings will be designed to carry a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds in an area of one square foot.

Walking surfaces for items A, B & C above must be designed to have a coefficient of friction no less than 0.50 in all directions of travel.

7.70TPR.3. METHODS.

All units must be in good condition and acceptable to the Engineer.

The Contractor must install the TPR by placing them where shown on the Contract Drawings, specifications and as directed by the Engineer. All the modular ramps will be assembled as per manufacturer's instructions.

If the modular ramps are pre-assembled and transported to their locations, Contractor must use utmost care in the delivery and installation of these units.

Units can also be fabricated/constructed at site with the approval of the Engineer.

Contractor must continuously maintain the TPR, where shown on the Contract Drawings or directed by the Engineer, until ordered by the Engineer to remove the completion of a work stage. Should a unit or units of barricades become damaged or otherwise unacceptable to the Engineer, the Contractor must replace said units within twenty-four (24) hours of notice by the Engineer, at no additional cost to the City.

7.70TPR.4. MEASUREMENT AND PAYMENT

The price of TPR will be deemed included in the prices bid for all the scheduled contract items.

SECTION 9.23 – ASPHALT, FUEL, AND STEEL PRICE ADJUSTMENT ALLOWANCE

9.23.1 SCOPE AND INTENT

(A) This section will provide for additional compensation to the Contractor for increases, or repayment by the Contractor for decreases, in the price of asphalt, fuel, or steel products.

(B) Price Adjustments will be made only for eligible work as defined below. With respect to asphalt and steel eligible work items, price adjustment will be paid, if eligible, only after the items have been permanently incorporated into the Work and accepted by the Commissioner. With respect to fuel, price adjustment will be paid, if eligible, only after fuel has been delivered to the Project site.

(C) No adjustment will be provided for any extra work paid by fixed price in accordance with the Standard Construction Contract Article 25.3.2 or paid for on a time and material basis per Standard Construction Contract Article 26. Additional quantities of existing Contract pay items at original bid prices will be considered eligible for asphalt, fuel, and steel price adjustments.

(D) Temporary work performed by the Contractor at its own expense will not be eligible for price adjustment. Notwithstanding the foregoing, temporary asphalt will be eligible if shown on the Contract Drawings or required to complete the Work and must be approved in advance by the Engineer.

(E) The Contractor, its Subcontractor(s) and/or Materialmen, must, when directed by the Commissioner, provide any and all Project documents and/or records the Commissioner deems pertinent to his/her determination with respect to the price adjustment. If requested by the Commissioner, the Contractor, its Subcontractor(s) and/or Materialmen, must provide copies of Project documents and/or records.

(F) Failure by the Contractor, its Subcontractor(s) and/or Materialmen, to comply strictly with the requirement to provide Project records will constitute a waiver of any claim for additional compensation the Contractor may have in connection with the price adjustment request.

(G) Project documents and/or records include, without limitation, Bid and Contract Documents, shop drawings, manufacturing and/or shipping data, as-built drawings, books of account, financial statements, invoices, vouchers, records, daily job diaries and reports.

(H) If the Contractor is paid additional compensation in accordance with this Section, the Contractor must pay a properly allocated share of such additional compensation to the applicable Subcontractor(s) and/or Materialmen.

9.23.2 PRICE ADJUSTMENT VALUES

(A) The monthly average asphalt prices, monthly average fuel prices, steel cost basis and steel index values will be posted on the NYS Department of Transportation (NYSDOT) website: https://www.dot.ny.gov/main/business-center/contractors/construction-division/fuel-asphalt-steel-price-adjustments

(B) Historical index values are available as issued Engineering Bulletins on the NYSDOT website: https://www.dot.ny.gov/eieb

9.23.3 ASPHALT PRICE ADJUSTMENT

(A) Price Changes.

The asphalt price adjustment will be based solely on the price changes for asphalt as determined by the formulas below. No adjustment will be made if the monthly average posted price is within $15.00 of the asphalt index price. No consideration will be given to the situation where the price paid by the Contractor, its Subcontractors, or the Contractor's or Subcontractor's supplier(s) exceeds the monthly average posted price.

(B) Applicability.

The asphalt price adjustment will apply to all permanent asphalt pavement items. The asphalt price adjustment will apply to temporary asphalt pavement if the temporary asphalt is shown on the Contract Drawings or approved in advance by the Commissioner. No price adjustment will be made for tack coat or pothole cold patch.

(C) Prices.

The asphalt index price and the monthly average posted price are defined as follows:

1. Asphalt Index Price. The asphalt index price is a price per ton of binder (also referred to as liquid bitumen or asphaltic cement) used solely as a basis from which to compute asphalt price adjustments. The asphalt index price will be the monthly average posted price for the month and year the bid opening for the Project.
2. Monthly Average Posted Price. The monthly asphalt index prices will be determined by NYSDOT using the methods set forth in NYSDOT Standard Specification Section 698.

(D) Quantity.

The quantity of asphalt in tons considered for adjustment will be determined by the tons of asphalt actually placed. This will be calculated using the measured volume of asphalt placed, and the asphalt's in-place density, as measured in the field. Quantities of asphalt will be measured to the nearest 0.1 ton.

(E) Adjustment.

Asphalt price adjustment will be based on the following formulas:

1. When price increases: Price Adjustment = (Quantity of Asphalt) x (Monthly Average Posted Price – Asphalt Index Price - $15.00)
2. When price decreases: Price Adjustment = (Quantity of Asphalt) x (Monthly Average Posted Price – Asphalt Index Price + $15.00)

(F) Payment of the Price Adjustment.

The Contractor is required to keep a log of all asphalt incorporated into the Project that is eligible for the price adjustment. The log must keep track of the date when the asphalt was purchased, the quantity of the asphalt, the Asphalt Index Price and the Monthly Average Posted Price, as determined in accordance with 9.23.3.C.

When the adjustment amount, calculated in accordance with 9.23.3.E, exceeds $10,000.00 for all eligible asphalt incorporated into the Project, the Contractor must submit with its monthly payment requisition, the request for payment of the asphalt price adjustment.

9.23.4 FUEL PRICE ADJUSTMENT

(A) Price Changes.

The fuel price adjustment will be based solely on the price changes for fuel as determined by the formulas below. No adjustment will be made if the monthly average posted price is within $0.10 per gallon of the fuel index price. No consideration will be given to the situation where the price paid by the Contractor, its Subcontractors, or the Contractor's or Subcontractor's supplier(s) exceeds the monthly average posted price.

(B) Applicability.

The intent of the fuel price adjustment is to cover on-site equipment and vehicles only as delineated below.

1. The fuel price adjustment will apply for fuel used in:
    a. Diesel equipment used on site, such as backhoes, excavators, cranes.
    b. Stationary equipment used on site, such as trailer or skid mounted compressors, generators, or light towers.
    c. Gasoline or diesel trucks and vans that are assigned to the site full-time, which may be used for off-site pickups and deliveries.
    d. Equipment used for temporary heating.
2. The fuel price adjustment will not apply to:
    a. On-site gasoline powered hand tools, such as chainsaws, cut-off saws, pressure washers, small generators, etc.
    b. Vehicles (cars, pickup trucks) that are also used for commuting.
    c. Delivery vehicles.
    d. Any equipment at the Contractor's shop, manufacturer's shop, or other off-site facility.

(C) Prices.

The fuel index price and the monthly average posted price are defined as follows:

1. Fuel Index Price. A price per gallon of fuel used solely as a basis from which to compute fuel price adjustments. The fuel index price will be the monthly average posted price for the month of the bid letting.
2. Monthly Average Posted Price. The monthly fuel index prices will be determined by NYSDOT using the methods set forth in NYSDOT Standard Specification Section 698.

(D) Quantity.

The quantity of fuel in gallons considered for adjustment will be determined by invoices for fuel delivered to the Project site. Quantities of fuel will be measured to the nearest 0.01 gallon.

(E) Adjustment.

Fuel price adjustment will be based on the following formulas:

1. When price increases: Price Adjustment = (Quantity of Fuel) x (Monthly Average Posted Price - Fuel Index Price - $0.10)
2. When price decreases: Price Adjustment = (Quantity of Fuel) x (Monthly Average Posted Price - Fuel Index Price + $0.10)

(F) Payment of the Price Adjustment.

The Contractor is required to keep a log of all fuel incorporated into the Project that is eligible for the price adjustment. The log must keep track of the date when the fuel was purchased, the quantity of the fuel, the Fuel Index Price and the Monthly Average Posted Price, as determined in accordance with 9.23.4.C.

When the adjustment amount, calculated in accordance with 9.23.4.E, exceeds $10,000.00 for all eligible fuel delivered to the Project site, the Contractor must submit with its monthly payment requisition, the request for payment of the fuel price adjustment.

9.23.5 STEEL PRICE ADJUSTMENT

(A) Applicability.

The intent of the steel price adjustment is to cover steel materials as follows. For the purposes of this section, steel includes all steel alloys, stainless steel alloys, iron, and ductile iron.

1. Steel price adjustment will apply to groups of similar material content.
2. The steel price adjustment will apply to the following Material Groups:
    a. Structural steel
    b. Reinforcing bars
    c. Steel water mains, appurtenances, and valves
    d. Ductile iron water and sewer pipes, appurtenances, fittings, and valves
    e. Steel piles and minipiles casings
    f. Municipal steel and iron castings (manhole covers, sewer grates, etc.)
3. The steel price adjustment will not apply to the following:
    a. Steel in fabricated elements, such as traffic signal cabinets, or electrical fixtures and boxes
    b. Handrails, access ladders, edging strips and other miscellaneous metals
    c. Anchor bolts and fasteners

(B) For each Material Group listed, the Contractor must also identify the parties whose relationship establishes the invoice date. If the parties are known, they must be identified by name. If the two parties are not known, they must be identified by role (Contractor, Subcontractor, Materialman, fabricator, etc.). Different parties may be identified for scopes within a Material Group for the purposes of establishing an invoice date. If the Contractor does not provide a list of materials to which to apply the steel price adjustment, no steel price adjustment will be made.

(C) If the percentage change for a given month does not exceed 5% plus or minus, from the benchmark steel index, no adjustments will be made for materials invoiced that month.

(D) The percentage change for each material group identified in Article 9.23.5.A.2 above will be determined using the month that the largest value of materials were invoiced.

(E) The weight of the steel must exclude minor appurtenances individually weighing less than 5 lbs (i.e., nuts, bolts, washers, etc.) and non-steel components, such as door insulation or glazing. Precast or prestressed concrete items must have total reinforcing steel weight listed on the approved shop drawings. The following sources must be used, in declining order of precedence, to determine the weight of steel: approved shop drawings; verified shipping documents; Contract Documents; industry standards (i.e., AISC Manual of Steel Construction, AWWA Standards, etc.); and manufacturer's data.

1. Indexes and Prices. Adjustments are based on the Producer Price Index (PPI) for Semifinished Steel Mill Products (WPU 101702). PPI values are published by the US Department of Labor, Bureau of Labor Statistics (BLS). Recent PPI values are posted on the NYSDOT website linked above. The Cost Basis, Benchmark Steel Index, Monthly Steel Index, and the Percentage Change are defined as follows:

    a. Cost Basis (CB). An average price of steel products in dollars per ton used solely as a cost basis from which to compute steel price adjustments. The cost basis for original Contract bid price items and additional work at the original Contract bid price will be the cost basis listed for the month of the bid letting. The cost basis for additional work at agreed price will be the value of the cost basis for the month the agreed price was submitted to the Commissioner.

    b. Benchmark Steel Index (BI). The benchmark steel index for original Contract bid price items and additional work at the original Contract bid price will be the value of the preliminary PPI for the month of the bid letting. The benchmark steel index for additional work at agreed price will be the value of the preliminary PPI for the month the agreed price was submitted to the Commissioner.

    c. Monthly Steel Index (MI). Value of the final PPI for the month the material is invoiced.

    d. Percent Change. The percent change in any given month will be determined as follows:

$$Percentage\,Change = \left(\frac{MI - BI}{BI} \right) x\,100$$

(F) The quantity of steel for adjustment of each Material Group will be measured to the nearest 0.1 tons.

1. Percent Change Greater Than +5%. If the Percentage Change is greater than +5% from the benchmark steel index, Price Adjustments will be made for materials invoiced that month. The Contractor must provide the Commissioner a detailed list of the weight of eligible materials within 60 calendar days after installation, including: the Contract pay item, the weight of steel, the month(s) of invoice, the source used to determine the weight, and if requested by the Engineer, copies of invoices to verify the month of invoice.

2. Percent Change -5% to +5%. If the Percentage Change is between -5% and +5%, inclusive, from the benchmark steel index, no adjustments will be made for materials invoiced that month.

3. Percent Change Lower Than -5%. If the Percentage Change is lower than -5% from the benchmark steel index, a Price Adjustment will be charged to the Contractor for materials invoiced that month. The Contractor must provide the Commissioner a detailed list of the weight of eligible materials within 60 calendar days after installation, including: the Contract pay item, the weight of steel, the month(s) of invoice, the source used to determine the weight, and copies of invoices to verify the month of invoice.

(G) Adjustment.

Steel price adjustment will be made for all the materials which the Contractor opted to apply the steel price adjustment, based on the following formulas:

1. When price increases:

$$Price\ Adjustment = \left[\left(\frac{MI - BI}{BI}\right) - 0.05\right]\left(CB\right)Qty$$

2. When price decreases:

$$Price\ Adjustment = -\left[\left(\frac{MI - BI}{BI}\right) + 0.05\right]\left(CB\right)Qty$$

(H) Payment of the Price Adjustment.

Steel Price Adjustment will be paid once during the Project duration for each eligible Material Group after the final PPI is available to set the Monthly Steel Index for the invoice month determined in Article 9.23.5.D above.

9.23.6 MEASUREMENT AND PAYMENT

(A) The fixed sum shown in the Bid Schedule for Price Adjustments Allowance will be considered the price bid for this item. The fixed sum is not to be altered in any manner by the bidder. Should the amount shown be altered, the new figures will be disregarded and the original price will be used to determine the total amount bid for the Contract. The fixed sum payment made under this item will be equal to the sum of payments and credits for price adjustments, as approved by the Commissioner, with no markup for overhead, profit, or other fees allowed. The fixed sum amount is included in the bid solely to ensure that sufficient monies will be available to pay the Contractor for the price escalation adjustment payments as delineated herein, which may be more or less than the fixed sum amount.

Payment will be made under:

Item No.	Item	Pay Unit
9.23	PRICE ADJUSTMENTS	F.S.

SECTION 9.28 –Expanded Work Allowance

9.28.1. PURPOSE

An Allowance has been established for the items set forth in sub-Section 9.28.3 below ("Expanded Work Allowance" or "EWA"). Payment for the items set forth in sub-section 9.28.3 ("Expanded Work Items") may be made through the EWA, as directed by the Engineer. "Extra Work", "overrun", and "Allowance" are defined by the Standard Construction Contract (*see* Articles 2.1.16, 26.1, and 2.1.4, respectively) and nothing in this Section alters, or will be deemed to alter the interpretation or application of, the Standard Construction Contract, including but not limited to Articles 25, 26, 28, and 78 of the Standard Construction Contract.

9.28.2. PROCESS

(a) If the Engineer determines that use of the EWA is appropriate, in their sole discretion, the Engineer will prepare a written scope document for the Expanded Work Items for the Contractor's execution ("EWA Scope Memo"). The EWA Scope Memo will set forth the maximum amount payable from the EWA prior to the execution of a final cost memorandum ("Maximum Amount"), in accordance with this Section. The Maximum Amount may be increased from time to time by the Engineer, in their sole discretion, except that the Maximum Amount may not exceed 80% of the Engineer's estimated total cost for such Work (the "Estimated Cost") unless and until a final cost is determined and a final cost memorandum ("Final Cost Memo") executed in accordance with this Section.

(b) Neither the Maximum Amount nor the Estimated Cost will be deemed to be the final cost of the Expanded Work Items. The final cost for the Expanded Work Items will be determined in accordance with Article 26 of the Standard Construction Contract. The Contractor must submit its detailed price proposal for the Expanded Work Items, calculated in accordance with the Contract, within the time period set forth in the EWA Scope Memo or within 90 Days after the executed EWA Scope Memo is issued to the Contractor, whichever is sooner.

(c) Once the EWA Scope Memo is executed and the Contractor is directed to proceed with the Work, DDC will make progress payments, as provided in the Contract, up to the Maximum Amount or until the submission period has expired, whichever occurs sooner.

(d) DDC will not make any progress payments for the performance of the Expanded Work Items beyond the submission period set forth in sub-Section C, above, unless and until a final cost has been determined and a Final Cost Memo executed in accordance with this Section. No amounts above the Maximum Amount set by the Engineer will be payable from the EWA, unless and until a final cost has been determined and a Final Cost Memo executed in accordance with this Section. In all events, the Contractor shall promptly and diligently comply with the Engineer's direction and perform all Work required by the Contract and the EWA Scope Memo.

(e) Upon receipt of the Contractor's cost detailed proposal, DDC will evaluate the proposal and initiate negotiations, as necessary, to determine the final cost of the Expanded Work Items in accordance with Article 26 of the Standard Construction Contract. The Contractor is responsible to furnish time and material records in accordance with Article 28 of the Standard Construction Contract until a Final Cost Memo is executed. If the parties cannot agree on a unit

price or fixed price, the Contractor will be paid on the basis of time and material records in accordance with Article 26 the Standard Construction Contract.

(f) A Final Cost Memo will be prepared by the Engineer to be executed by the parties. The total net sum of the amounts added and/or credited under the EWA Scope Memo and payment of the finalized Final Cost Memo constitutes full accord and satisfaction for the costs resulting from the Expanded Work Items. In the event the EWA is insufficient to pay the full amount of the Final Cost Memo, the parties agree to execute change order documents for the remaining funds, subject to registration in accordance with the New York City Charter.

9.28.3. PRICE TO COVER.

Expanded Work Items are those items set forth below. The EWA may be used, in the Engineer's discretion, for the following Expanded Work Items:

(a) Non-material changes in the Work necessary to complete Contract Work due to site conditions that differ from those included in the Contract Documents and that could not have been anticipated by the Contractor.

(b) Non-material changes in the Work directed by the Commissioner that result in a net change in the cost to the Contractor for the Work to be performed under this Contract, including but not limited to the following:

(i) Overruns of unit price items and quantity increases in portions of work within a lump sum item.

(ii) NYCDOT traffic stipulations or permit requirements that significantly differ from those included in the Contract Documents and that could not have been anticipated by the Contractor.

(iii) Changes to the sizes of materials or changes to specifications of materials.

(iv) Materials/structures not included in the Contract Documents that are necessary to complete Contract Work and that could not have been anticipated the Contractor.

9.28.4. BASIS OF PAYMENT.

(a) The fixed sum must be considered the price bid for this item. The fixed sum is not to be altered in any manner by the bidder. Should the amount shown be altered, the new figures will be disregarded, and the original price will be used to determine the total amount bid for the contract.

(b) The payment(s) made under this item will be equal to the Final Cost Memo prepared by the Engineer and executed by the parties in accordance with 9.28.2(f) above as proof of work performed for this item as approved by the Engineer.

(c) The total estimated cost of this item is the "fixed sum" amount shown for this item in the Bid Schedule and shall not be varied in the bid. The "fixed sum" amount is included in the

bid solely to ensure that sufficient monies will be available to pay the Contractor for this work, which may be more or less than the fixed sum amount.

(d) The price will cover the cost of all labor, materials, equipment, insurance and incidentals necessary to complete the work under this section in accordance with the Contract Drawings, the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
9.28	EXPANDED WORK ALLOWANCE	F.S.

HW-900H - ALLOWANCE FOR CITY WORK ACCELERATION

Under this Section, the Contractor will be paid for City work deemed necessary by DDC's Commissioner to accelerate the City work items in the project during critical periods but the use of this item will expire on the original contract substantial completion date. Such accelerated City work includes:

A. 100% of the premium portions of overtime pay for working during non-scheduled work hours which shall be defined as those hours of work outside the permissible hours stated in the original contract OCMC Traffic Stipulations; or,

B. The premium portion of overtime pay for overtime actually worked beyond the 40-hour work week but within the permissible hours of work stated in the original contract OCMC Traffic Stipulations; or,

C. All other incidental expenditures caused by modifications of project site regulations or administrative requirements ordered by the Commissioner that result in additional costs to perform contract work as specified.

Such accelerated City work shall be paid for under this item in accordance with the requirements of **Articles 25 and 26** of the Standard Construction Contract.

Payment made under this Fixed Sum item shall cover the cost of all labor, materials, plant, equipment, insurance, and incidentals necessary to accelerate the City work as ordered by DDC's Commissioner.

No guarantee is given that this allowance item will in fact be required in this contract. The estimated "fixed sum" amount shown in the Bid Schedule is included in the total bid solely to insure a method of payment for any accelerated work performed by the Contractor, as directed by DDC's Commissioner.

Payment will be made under:

Item No.	Item	Pay Unit
HW-900H	ALLOWANCE FOR CITY WORK ACCELERATION	F.S.

EP7 (1.0) - PAGES GAS COST SHARING (EP-7) STANDARD SPECIFICATIONS

NOTICE

THE PAGES CONTAINED IN THIS SECTION REPRESENT THE GAS COST SHARING WORK THAT SHALL APPLY TO AND BECOME A PART OF THE CONTRACT.

(NO TEXT ON THIS PAGE)

TABLE OF CONTENT

NO. 3 - Utility Crossings During Catch Basin Chute Connection Pipe Installation
NO. 4 - Utility Crossings During Catch Basin Chute Connection Pipe Installation (Extra Depth)
NO. 5 - Gas Main Encroachment On And/Or Parallel To Excavation Of Unsheeted Trench

V - PRELIMINARY GAS WORK TO BE PERFORMED BY FACILITY OPERATOR

VI - LISTING OF APPROXIMATE LOCATIONS OF EP-7 BID ITEMS QUANTITIES

I - NOTICE TO ALL BIDDERS; GAS COST SHARING WORK

All prospective bidders are hereby advised that, pursuant to the "Gas Facility Cost Allocation Act", ("the Act"), the City of New York has entered into an agreement ("the Agreement") with the gas companies (Con Edison or National Grid (formerly KeySpan Energy Delivery)) operating in their respective areas of the City to "share" the cost of facility relocation and/or support and protection of facilities disturbed by proposed water and/or sewer and related City work specified in this contract. Therefore, bid items, specifications and estimated quantities for the incremental costs of support and protection of certain gas facilities have been included in this contract. The low bid for this contract shall be determined by examining each bid for all work to be performed under this contract including any work of support and protection of gas facilities to be performed. The Contractor shall not seek additional compensation from gas companies except as specifically set forth in its contract.

II - GENERAL PROVISIONS; GAS COST SHARING WORK

1. General:

The Contractor shall perform City work with interferences from existing live and abandoned gas facilities. This shall be defined as utility work. Therefore, this contract includes bid items, specifications and estimated quantities designed to fully compensate him/her for the incremental costs of supporting, protecting, providing accommodations and, avoiding disturbing gas facilities located in the streets shown on the contract drawings. In the event that any other provisions of this contract related to gas facilities (or private utilities) conflict with these provisions, these provisions shall supersede and govern all work related to gas facilities owned by the companies operating in the project area. All utility work, as defined in these specifications, including changes and additions thereto shall be paid solely by the City except when specified otherwise in this contract. Contractor hereby agrees that the facility operator shall not be liable to pay him/her for any work performed including extra utility work. Contractor agrees that its bid prices include all compensation for loss of productivity and efficiency, idle time, delays (including any delays occasioned by negotiation of a contract change), change in operations, mobilization, demobilization, remobilization, added cost or expense, lost of profit, other damages or impact costs that may be suffered by or because of utility work, or the presence of gas facilities in the proximity of City work and that it will not seek additional compensation for these items. All disputes shall be resolved as specified in the contract.

Pursuant to the Act, Agreement, and the New York City Administrative Code, the gas company(ies) has been directed by the Commissioner and is required to perform all maintenance, repairs, replacement, shifting, alteration, relocation, and/or removal work that are not part of this contract. By having bid on this contract, the Contractor understands and agrees that the Commissioner has preasserted any right the City has to require, including the issuance of any directives or so called "order outs" under the New York City Administrative Code, any or all gas companies to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove all gas facilities that are about to be disturbed by the City contract work. The issuance of additional such directives during the performance of the contract work, where necessary in the sole judgment of the Commissioner, shall be initiated by such Commissioner as set forth in the relevant sections of the Act and Agreement. Contractor further agrees to insert such requirements as set forth herein above into any contracts with its approved subcontractors so that its subcontractors also understand and agree to such contract requirements.

2. Gas Interferences And Accommodations:

During the performance of sewer and water main work funded by the New York City Department of Environmental Protection (NYCDEP), as instructed by the Engineer, the use of any applicable contract bid item is allowed in order to resolve and accommodate all gas facilities interferences with such City work, including the removal of contaminated soil in associated trench excavation. This is in addition to the specified EP-7 bid items in the contract. Payment for such accommodation shall be funded by EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" (F.S. Fixed Sum). The value of such accommodation shall be computed by multiplying the appropriate unit prices bid to the quantity of work performed, as determined by the Engineer, and applying the total amount thus to be paid

to EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS". When EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" does not exist, such additional accommodation work shall be at no cost to the City but shall be a matter of adjustment between gas facility operator and Contractor. Private facilities, other than gas, that become in interference due to gas interferences accommodations shall also be accommodated, if so directed by the Resident Engineer, at no additional cost to the City and, provided that its owner agrees to be responsible for all additional costs to Contractor, otherwise, such facility shall be ordered by the City to be maintained, shifted, relocated or replaced by its owner at his/her expenses.

2a. Water Main Accommodations:

When water main construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the vertical or horizontal alignment of water mains including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and laying offset fittings and pipes, etc., necessary in order to complete water main installation and, avoid gas interferences in the project area, including street intersections. Typical work method accommodations shall include, but not be limited to, pier and plate, installation of filter fabric and select fill, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of water mains standards and specifications.

2b.Sewer Accommodations:

When sewer construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the horizontal alignment of sewer facilities (if possible) including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and construction of additional manholes or modification of manholes/catch basins, extending chute connections, house connections, using alternate materials and methods, poured-in-place structures, etc., necessary in order to complete sewer installation and, avoid gas interferences in the project area, including street intersections. The term sewer facility shall include, but not be limited to, all sewer pipe and appurtenances, manholes, catch basins, catch basin chutes, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of sewer standards and specifications.

3. Quantity Overruns, EP-7 Funded Bid Items:

No quantity overrun, in excess of one hundred twenty five (125) percent, shall be permitted for EP-7 funded bid items (gas) included in this contract, except when Resident Engineer determines that such overruns are caused by field modifications to planned City work, or approved construction methods, or contract scope changes. The Engineer will notify the gas facility operator in writing of overruns. The Contractor must invoice the gas facility operator for payment of all overruns, which will be paid by the gas facility operator at the contract bid price. Gas facility operator will be entitled to reimbursement by NYCDEP under established cost sharing procedures.

4. Changes And Extra Work:

This section is not applicable to work defined under "Emergency Reconstruction Contracts" or so-called "Where and When Contracts" since these projects, by definition, inherently encounter unanticipated gas facilities and cannot be pre-engineered. In all other cases, any contract changes proposed for City work shall also cover and include all associated changes to support and protection of gas facilities affected by such changes to City work. In all other cases where the Contractor finds that City work cannot be performed as planned and specified and/or, as approved because of a need to support, protect and/or alleviate interferences from gas facilities that were not listed and/or shown, or incorrectly shown in contract plans and specifications, he shall immediately notify the Resident Engineer and the facility operators' representative of his findings. Resident Engineer shall promptly examine such claims and determine whether or not such work is covered by contract bid items and /or specifications (contract bid items and specifications shall include city contract items as well as EP-7 items). The Resident Engineer shall also

examine the claim to determine if the application of EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" is appropriate to resolve the claim. If upon examination, the Engineer determines that such field conditions were unanticipated (not shown and/or listed, or incorrectly shown in contract documents) and are not covered by bid items and contract specifications, he shall then direct the Contractor and the affected facility operator to negotiate the cost of supporting and protecting, and/or alleviating the impact on City work caused by such unanticipated gas facilities with each other with the understanding that the performance of City work shall continue during negotiations. If a cost agreement is reached, the Contractor and facility operator shall adjust such costs between themselves at no additional costs to the City contract. If the Contractor and affected facility operator do not reach an agreement concerning the price to be paid for the extra work within five (5) business days of the Engineer's directive to engage into such negotiations and, after considering: public safety and inconvenience, requirements of laws and regulations applicable to private utilities, integrity of all utility systems, including but not limited to sewer and water, gas, electric, telephone and, cable TV facilities, sound engineering practices, cost (long and short term) to all affected parties, and potential City work delays, then the Resident Engineer, depending on nature and severity of interferences with City work, shall either, direct the facility operator to relocate or replace its facilities at its own discretion and cost, reimbursable by NYCDEP under established gas cost sharing procedures or, direct the Contractor to perform the utility work on actual time, material and equipment costs basis pursuant to relevant contract requirements and amendments. Contract bid prices for any applicable items of work involved shall be applied, or converted to an allowance for time and material charges. Changes shall be for affected portions of utility work and, shall be processed with EP-7 funds.

5. Excavation:

All excavators shall notify the NYC/LI One Call Center at 1-800-272-4480 at least two (2) working days, not including the day of the call, but not more than ten (10) working days in advance of the start of any excavation work. The gas company(ies) will mark out its facilities within the project limits and provide Construction Inspector(s) during all excavation work in close proximity (within twelve (12) inches) to gas facilities. The Contractor shall exercise extreme caution when excavating in the vicinity of any gas facilities. Hand excavation shall be performed within twelve (12) inches of gas facilities. The Contractor prior to excavating underneath these facilities shall adequately support all gas facilities. Standard support details for gas facilities have been included in the specifications. Any damage to gas facilities shall be reported immediately to the gas company(ies). The Contractor shall be responsible for all cost associated with repairs made necessary by damages caused by his operations.

6. Backfilling And Street Restoration:

Backfilling operations and street restorations shall be in accordance with contract requirements.

7. Non-Responsive Bids:

Every gas (EP-7) bid item has a suggested "Not less than" value per unit indicated on contract bid sheet. Bids resulting in cost of less than suggested for EP-7 items are hereby prohibited and if submitted shall be considered NON-RESPONSIVE.

8. Minimum Clearances:

Clearance requirements for City work shall govern and supersede any clearance requirement of gas facility operator. Therefore, a minimum of twelve (12) inches clearance between private utilities and City water mains, sewers or related structures to be installed in this contract shall be maintained. When this clearance is not attainable, the Resident Engineer may allow a minimum of four (4) inches clearance. With less than twelve (12) inches clearance a neoprene/polyethylene shield (to be provided by facility operator) shall be installed as part of all work item specifications. However, if Resident Engineer determines that City work cannot be performed within allowable clearance and no reasonable City accommodation (no-cost change to City work) is possible, the City shall direct the facility operator to remove, relocate, shift, or alter their facility(ies) pursuant to the New York City Administrative Code.

9. Work By Facility Operator:

The facility operator may find it necessary to perform the following types of work during performance of City work: accommodating a contractor's request for gas facilities modifications (in order to facilitate City contractor's proposed construction method) or, remedial and emergency work on gas facilities proper with their own resources and materials if an approved method of construction for City work causes unanticipated disturbances to gas facilities or, replacing defective gas facilities when they are exposed by the Contractor and their actual conditions are observable by the facility operator. Also included in the above category of defective gas facilities are: the presence of environmental contaminants attributable to the gas facility in or around gas facilities. If such work is deemed required by the facility operator or if facility operator is directed by the City to address such deficiencies at any time during the course of construction, the Contractor shall modify the construction schedule at no cost to the City and allow the facility operator five (5) business days to perform such work without interferences. Additional costs to the facility operator (in cases of accommodations) or, Contractor (in cases of defective gas facilities) due to such gas work, if any, shall be the responsibility of the parties involved and not of the City. Such costs shall be a matter of adjustment between the Contractor and the facility operator.

10. Materials Furnished By Facility Operator:

It shall be the Contractor's responsibility to inspect material to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional costs to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

11. Liability And Insurance:

Notwithstanding the provisions of this contract, the existing division of liabilities to third parties shall remain the same as between the City and the company. Therefore, it is specifically agreed by the City, company and Contractor (by bidding on this contract) that for the purpose of any liabilities to third parties, that the City contractor performing work directly and physically relating to gas company facilities in this project, shall be deemed an agent of the company and not an agent of the City, the New York City Municipal Water Finance Authority, or the New York City Water Board. Contractor shall include the company as an additional insured on all insurance policies maintained to comply with the City's insurance requirements.

12. Width And Depth Of Excavation:

Contractor shall not be authorized to deliberately change trench or excavation widths and/or depth specified without Engineer's approval. Enlargement of any side of excavation up to eighteen (18) inches beyond pay limits (or inside face of sheeting) requested by the Contractor for the installation of certain types of sheeting may be granted. However, such enlargements or those greater than allowable shall not be approved when, in the sole judgment of the City, field conditions allow the water mains and sewer work to be performed within the limits specified and, the sole purpose of such enlargement request is to impact adjacent utilities (public or private) whose support and protection are part of this contract. Any approval shall be given at no additional cost to the City contract, including EP-7 funding, and all costs associated with unauthorized enlargements shall be the sole responsibility of the Contractor.

13. Depth And Crossing Angles Of Gas Facilities:

Where gas facilities are shown (or specified as) crossing proposed alignment of sewers, water mains, catch basins and chute connections or any other proposed excavations at specific angles (as measured off plans or sketches or specified in contract), it shall be understood that actual field measurements may deviate (plus or minus) forty-five (45) degrees from those shown or specified. The cover, or depth from street surface to top of facilities, shall be as shown or specified in contract documents, no deviation is to be assumed. Where gas facilities are not shown on contract documents, but their support and protection are otherwise included in this contract then, all references to facilities crossing at "various angles and depth" in the gas sections shall mean that such facilities are crossing sewer, water, catch basin and, catch basin chute, and other excavations at a ninety (90) degree angle to the proposed sheeting line or side of

excavation (for unsheeted trenches) with an allowable deviation of forty-five (45) degrees in any direction, except for catch basin chute excavation where the allowable deviation shall be sixty (60) degrees. Where the cover is not noted or specified, the bottom face of such facilities shall be assumed to be crossing catch basin chutes at a depth of three (3) foot eight (8) inches or less from the street surface. Paragraph No. 2 above shall apply in cases of distribution water main construction. Appropriate bid items and specifications are provided for cases where angle and depth are greater than stated above. This section also applies to work defined in "Emergency Reconstruction Contracts" or so-called "Where and When Contracts". These contracts are not pre-engineered and consequently have no drawings, sketches or determined locations and so, gas facilities encountered will be crossing existing and proposed sewer, water, catch basin/catch basin chutes and all appurtenances at various angles and depths.

14. Maintenance Of Traffic For Gas Work:

All work pertaining to gas bid items and specifications shall be performed within the contract maintenance of traffic plan as specified in the contract document. The bid price for the Maintenance and Protection of Traffic shall cover all work pertaining to gas items. The City shall make compensation for additional maintenance and protection of traffic items in connection with gas item of work only when such additional work is deemed reasonable and necessary by the Resident Engineer and is approved by him prior to its performance.

15. Relocated Gas And Temporary Systems Installation:

In cases where the Contractor is allowed to select the location for temporary construction such as, installation of dewatering headers, wells, well points, etc., he shall not disturb any gas facilities shown on sketches provided in this section. The only exception shall be, if the affected gas company agrees to such relocation and provided that the cost of such relocation is a matter of adjustment between the company and Contractor, and at no cost to the City.

16. Role Of Company Inspector:

In any case in which the City elects to perform some or all support and protection work with its own employees, personnel or contractors, the facility operator shall provide onsite inspectors to approve and certify such support and protection work (exclusive of City accommodations) performed by the City's own employees, personnel, and contractors. Facility operator's inspectors are not authorized to direct City contractor during the performance of contract work. They shall act through the City Resident Engineer and provide him/her required approvals and certifications, prior to preparing partial payments of EP-7 items, in a format and frequency to be prescribed by the appropriate City Head of Construction.

17. Coordination With Gas Company:

The Contractor shall be required to notify the gas company(ies), in writing, at least two (2) weeks prior to the start of final paving in order to allow companies to complete any unfinished gas work located within the area to be paved. Every effort shall be made to maintain gas service with minimum inconvenience to the public.

III - TECHNICAL SECTION

SECTION 6.01 - Trench Crossings; Support And Protection Of Gas Facilities And Services.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to

support and/or protect the integrity of gas mains, services and appurtenances of any sizes, configurations, and operating pressures crossing trench excavations above subgrade for planned construction of sewers and water mains facilities. A gas service shall be defined as a gas pipe of three (3) inches in diameter or less branching from the main to a customer pick up point or property valve box. A gas main may be any size pipe that is part of a distribution or transmission network other than services described above. Crossings shall be defined as gas facilities spanning the width of excavation (one side to the other side). These crossings may be at various angles and depth as shown on "Gas Cost Sharing Work Standard Sketches Nos. 1 and 1A", and as specified in "General Provisions; Gas Cost Sharing Work Paragraph No. 13" and, at the locations shown or listed in contract documents. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with contract specifications, plans, and at the directions of the Resident Engineer in consultation with the authorized representatives of the facility operator.

2. Method Of Construction:

A. Protection: In general, the gas facilities shall be protected as required by New York State Industrial Code 753. In particular, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the gas facilities (marked out by facility operators) and to ascertain the clearances and cover of the facilities with respect to the proposed excavation. Upon exposing the affected facilities sufficiently, at the discretion of the Resident Engineer, to ascertain the foregoing, Contractor shall be permitted to proceed with a combination of hand and machine excavation, as appropriate, outside a zone of protection whose limit shall be defined as a perimeter located twelve (12) inches from the outside face of each gas facility crossings (See "Gas Cost Sharing Work Standard Sketch No. 2"). If the facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained, and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07, and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

B. Support: Gas mains or services crossing excavations equal or less than four (4) feet wide are generally self supporting, unless field conditions as determined by the Resident Engineer require otherwise. The support requirements for gas mains and services crossing excavations greater than four (4) feet wide shall be as shown on the attached "Gas Cost Sharing Work Standard Sketch No. 1" and Contractor shall use sheeting methods that permit the maintenance of gas facilities in their existing locations and configurations. Alternate methods equivalent to those shown on the sketch or accommodations by the facility operator proposed by the Contractor in order to facilitate the execution of the specified work shall be allowable, provided that prior approval is obtained by the Contractor from the Engineer and the facility operator. The support and protection of gas facilities crossings shown on plans, drawings, listings or otherwise identified in this contract shall not be circumvented with the issuance of so called "order outs".

3. Method Of Measurement:

The Contractor shall be paid for supporting and/or protecting gas facilities crossing trench excavations under the appropriate bid items covered by this section. The Contractor shall be directly responsible to the facility operator for the total cost of using any alternate method requiring the use of resources owned by the facility operator. Regardless of the method used, the City shall pay the bid price for the appropriate support and/or protect item of work. The average rate charged by the facility operator for alternate support and protection work such as, disconnecting and reconnecting gas services is listed in attached "Schedule GCS-A".

4. Payment Restrictions:

These items shall not be paid for: gas services crossing unsheeted water main trench excavation; abandoned gas main/services identified by facility operator; gas mains/services crossing trench excavations for fire hydrant branch connections pipes, catch basins and/or chutes (sewer drain pipe), house sewer and/or water services; gas facilities encroaching any face of excavation for sewer and/or

water construction, all of which are covered under other contract sections. Also this item shall not be paid for new gas mains and services crossing water trenches when trenching for such new facilities has been performed by the Contractor in common with trench excavation for City work (overlapping trench limits). The cost of supporting and protecting such gas facilities crossings shall be deemed included in the cost of trench excavation for the new gas facilities. This payment restriction shall apply even if such common trench gas excavation is not part of the contract. The prices bid for items covered by this section represent full compensation to Contractor to completely perform the work described. No other bid items shall be combined with these items in order to pay for gas main and/or services crossing excavations specified herein.

5. Method Of Payment:

Each (Ea.) gas facility crossing trench excavation as described in these specifications shall be counted for payment.

6. Price To Cover:

The cost of timber/steel supports installed for gas facilities shall be included in the bid price. The bid price for each crossing shall also cover all additional supervision, labor, material (except those provided by the facility operator), equipment and insurance necessary to completely maintain the gas facilities without disruption of service to the customers and in accordance with contract plans, specifications and facility operator standards. The price shall also include: changes of method of operations; sheeting modifications where necessary to accommodate the gas facilities crossings; installation and removal of water pipe under gas facilities (so called "snaking"); extra care during excavation (including hand excavation under existing single and multiple gas facilities); extra backfilling and compaction around, over and under gas facilities; installation and removal of sheeting around gas facilities; associated maintenance and protection of traffic; barricades; and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.02 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Gas Interferences.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals for the extra excavation associated with the installation of catch basin sewer drain pipes (chute) under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents and also, for the support and protection of these facilities during associated excavation and backfill operations. The gas company operating in the area, (facility operator), owns these facilities.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation is required when catch basin sewer drain pipes are installed at an upstream invert depth lower than four (4) feet (up to a maximum of six (6) feet) from the proposed pavement grade because the bottom faces of interfering gas mains and appurtenances are located at a depth greater than three (3) foot eight (8) inches from proposed pavement surface (See "Gas Cost Sharing Work Standard Sketch No. 4").

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered starting from catch basin structure proper and that prevents the installation of the chute connection at an upstream cover less than or equal to three (3) feet or any other minimum cover required to avoid City facilities (e.g. water, sewer, etc.) as directed by the Resident Engineer.

4. Payment Restrictions:

This item shall not apply and related bid item shall not be paid in cases where:

A. Upstream invert chute is more than six (6) feet deep because of gas facilities.

B. Chute cannot be installed above existing gas facilities because of interferences with other private facilities that are not otherwise covered under this contract, regardless of upstream invert depth.

The above cases shall be at no cost to the City, but shall be a matter of adjustment between the Contractor and the facility operator(s).

5. Price To Cover:

The bid price shall cover the additional cost of all additional supervision, labor, materials, equipment and insurance, to complete the installation of catch basins and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities; backfilling and all other items necessary to perform all work incidental thereto including: installation and removal of drain pipe under gas facilities ("snaking"); widening of trenches to facilitate the above work; subsequent additional backfill and pavement restoration; modifying precast catch basin window to accommodate connection; changing sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work. The price shall not include removal of ledge rock and/or excavation of boulders in open cut.

SECTION 6.02.1 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Upstream Inverts Greater Than Six (6) Feet.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance and incidentals for the extra excavation of catch basin chutes where the upstream invert is greater than six (6) feet under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents or as determined by field conditions and also, for the support and protection of these facilities during the associated excavation, sheeting and backfilling operations.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation and sheeting is required when the catch basin chute installed at an upstream invert depth lower than six (6) feet from the proposed pavement grade because the bottom faces of the interfering gas mains and appurtenances are located at a greater depth than three foot eight inches from the proposed pavement surface only.

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered during such excavation when initiated from catch basin structure and that prevents the installation of the chute at an upstream cover less than or equal to three (3) feet or any other cover required to avoid City facilities as directed by the Resident Engineer.

4. Payment Restriction:

This item shall not apply and related bid item shall not be paid in cases where:
Upstream invert chute is less than or equal to six (6) feet deep because of gas facilities. Section 6.02 shall be paid.

5. Price To Cover:

The bid price shall cover the additional cost of all supervision, labor, materials, equipment and insurance to complete the installation of catch basin and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities incidental thereto; widening of trenches to facilitate the above work; subsequent additional backfilling and pavement restoration; modifying pre-cast basin window to accommodate connection; the installation of catch basin with deeper sumps as specified; additional sheeting and changes in sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.03 - Removal Of Abandoned Gas Facilities. All Sizes.

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services, or appurtenances thereof, located within the street shown on the contract plans, owned by gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any resulting from this choice shall be a matter of adjustment between the Contractor and facility operator only, and at no cost to the City.

3. Restrictions:

The facility operator shall be solely responsible for its contaminated gas facilities, surrounding contaminated soil and their disposal and abatement procedures, unless contract bid items are applicable and provided for such work. In such cases, the quantity removed shall be charged to EP-7 bid item "UTL- GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" at the City bid prices.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment, and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, support and protection of such properties. The price shall also cover breaking, cutting, and/or burning of abandoned gas pipes and their disposal from the site; sealing open ends remaining in the excavation with concrete or caps (caps to be provided by the facility operator) and backfilling of the area where the pipeline has been removed with clean backfill. The price shall also include any required dump charges. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and restoration associated with abandoned gas facilities removal, all of which are covered under Section 6.06.

SECTION 6.03.1 - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For National Grid Work Only)

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services or appurtenances thereof, located within the street shown on the contract plans, owned by the gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap and so, may require special handling and disposal methods as specified in National Grid Standard Operating Procedure 12-2, Coal Tar Wrap Handling and 12NYCRR56.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, the Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, the facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost to the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Wrap then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The City Contractor shall excavate abandoned gas facility sufficiently, either in its entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or City structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractor's trench by authorized National Grid personnel who will remove the Coal Tar Wrap as per National Grid procedures. This work by National Grid personnel shall be performed in a timely fashion and shall not unduly impede the Contractor's progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. The

Contractor at a site designated by the Contractor shall stockpile the removed pipe. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance and protection of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be provided by the facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor's excavation method, additional trucking and/or stockpiling costs.

SECTION 6.03.1a - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For Con Edison Work Only)

1. Description:

Under this section the Contractor shall provide all labor, material, equipment, insurance and, incidentals required to prepare abandoned gas mains, services and appurtenances thereof located within the street shown on contract plans, owned by the gas company operating in the project area (facility operator), for removal due to interference with proposed City work. These abandoned gas facilities were, at one time, used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural, manufactured or a combination of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distribution or furnishing of gas in enclosed containers. Such preparation for removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap which may contain asbestos or PCB's and so, may require special handling and disposal methods as specified in Con Edison - ASBESTOS MANAGEMENT MANUAL, CHAPTER 6 - ASBESTOS WORK PROCEDURES, SECTION 06.04 - COAL TAR WRAP REMOVAL. For under 25' (feet) in length and an approved NYC-DEP variance for over 25' (feet).

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas Facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility

operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities. However, the facility operator may prefer to make this test during performance of City work in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Warp then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The Contractor shall excavate abandoned gas facility sufficiently, either in it's entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or city structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractors trench by authorized Con Edison personnel who will remove the Coal Tar Wrap as per Con Edison and/or NYC-DEP approved procedures. This access shall conform to all applicable codes, rules & regulations. This work by Con Edison personnel shall be performed in a timely fashion and shall not unduly impede the Contractors progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. Contractor shall designate a specific site to stockpile those removed pipes. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas facility removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the plans and specifications, including, but not limited to, excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be supplied by facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor excavation method, additional trucking and/or stockpiling costs.

SECTION 6.04 - Adjust Hardware To Grade Using Spacer Rings/Adaptors. (Street Repaving.)

1. Description:

Under this section, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to final grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in concurrence with authorized representative of the facility operator.

2. Materials:

The facility operator shall furnish and deliver all prefabricated hardware parts required. These include adaptors for the grade adjustment proper and new street hardware if existing ones are found to be defective, all in accordance with the facility operator standards and City rules and regulations. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Method Of Measurement:

The Contractor shall be paid for each six (6) inch round box and/or nine (9) inch square box adjusted to grade regardless of adjustment height requirements.

4. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each box to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities to be salvaged and returned to the facility operator and, all material transportation from the Contractor's material storage yard to the work site. In addition the bid price shall include "chipping" around existing box using appropriate means and methods where grinding is required.

SECTION 6.05 - Adjust Hardware To Grade By Resetting. (Road Reconstruction.)

1. Description:

Under this item, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to the proposed grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall consist of either building up or lowering or resetting the casting by removing the existing frame and cover building up or decreasing the existing installation, replacing the frame and/or cover if damaged or worn out, as determined by the Resident Engineer, with a new frame and/or cover furnished by the owner, and setting the frame and cover to new elevation. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer.

2. Materials:

The facility operator shall furnish and deliver all new hardware parts required. The Contractor shall furnish materials such as mortar, bricks and concrete in compliance with contract requirements. At locations where high-early strength concrete is required under this contract to be placed adjacent to gas facilities,

then the requirement for concrete shall be high-early strength complying with the current New York State Department of Transportation, Standard Specifications for Class F concrete. Existing castings may be replaced as required and deemed necessary by the Engineer and by City rules and regulations. The Contractor shall install the new castings of various sizes furnished by the facility operator. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site and, shall provide off-loading services to the facility operator. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. Such delays shall be a matter of adjustment between the Contractor and the facility operator. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him, immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Methods Of Construction:

The Contractor shall remove and reinstall existing castings or install new castings to the proposed grade. Setting and resetting the castings shall be done with mortar and brick according to the standards of the facility operator. Work shall be performed in a workmanlike manner. Castings that are deemed unacceptable for resetting shall remain the property of the facility operator and he shall be responsible for their removal and proper disposal from site. No traffic shall be allowed on adjusted street hardware until permitted by the Engineer.

4. Method Of Measurement:

The Contractor shall be paid for each gas hardware adjusted to grade regardless of size or adjustment height requirements (up or down).

5. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each gas hardware to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities; building up the existing installations with bricks and mortar, or lowering the existing installation by removing bricks and mortar; replacing damaged frames and/or covers with new frames and/or covers furnished by the facility operator; setting the frames and covers to the new elevations; protect existing installations; repair minor structural damages to existing installations prior to resetting frames; unloading of furnished castings at the Contractor's yard and transporting castings from the Contractor's yard to the job site as required; completing the work in accordance with the contract plans, specifications and, at the directions of the Engineer. In addition the bid price shall include "chipping" around existing gas facilities using appropriate means and methods where grinding is required.

SECTION 6.06 - Special Care Excavation And Backfilling.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to support and protect the integrity of live gas facilities including mains, services, related structures and appurtenances during excavations. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in consultation with authorized representatives of the facility operator.

2. Applicability Of Section:

This section shall apply to live gas facilities of various sizes located within two (2) feet of any face of

unsheeted excavation, (unsheeted excavation refers to any excavation performed for city work and includes excavations performed that are to be subsequently sheeted using approved methods) and paralleling or, encroaching any face of excavation. Also, for crossings greater than forty-five (45) degrees and/or located at a cover depth greater than five (5) feet from existing street surface. Parallel facilities are not exposed at any time during excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). Encroaching facilities are partially exposed inside the limit of excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). This section shall also apply to gas facilities crossing catch basins excavation, and catch basins sewer connections (chutes) trench excavation only when extra depth (covered in other section), is not required for chutes installations because of such utilities interferences (See "Gas Cost Sharing Work Standard Sketch No. 3"). This section shall also apply to gas services (if shown or otherwise listed in contract documents) crossing unsheeted excavations for water mains, gas facilities crossing fire hydrant branch connections, house sewer and/or water service connections excavations. This section shall also apply for so called "loss trench", as described further, and for additional excavation (pavement and/or soil), backfilling, compaction, roadway base and pavement restoration due to abandoned gas facilities, only if removed by Contractor. If operating status of gas facilities cannot be determined prior to excavation then such facilities shall be considered live and this section shall fully apply. The excavation around fully exposed live gas facilities along and within limits of excavation (not crossings) shall be covered by this section also (not shown on "Gas Cost Sharing Work Standard Sketch No. 5"), however the support requirement, if any is required, of such facilities is beyond the scope of these specifications and therefore shall be the responsibility of facility operator to determine and prescribe, at no cost to the City contract, but shall be a matter of adjustment between the Contractor and facility operator.

3. Payment Restriction:

No special care excavation shall be paid for abandoned gas facilities paralleling and/or encroaching excavation and therefore are not in direct interference with City work. Except as allowed in this section, the bid item specified under this section shall not be used in combination with items covered under other sections for work done due to a particular gas facility. This item shall not be paid for new gas facilities when trenching for such new facilities has been performed by the Contractor of record in common with trench excavation for City Work (overlapping trench limits). The cost of excavating with care as defined in this section shall be deemed included in the cost of trench excavation for the new gas facilities. This restriction shall apply even if such gas common trench excavation is not part of the contract. If facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07 and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

4. Method Of Construction:

All excavation in the vicinity of gas facilities shall be as required by NYS Industrial Code 753. Where these facilities are paralleling and located two (2) feet or less from the limits of the proposed excavation, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) to ascertain the clearances of these facilities with respect to the proposed excavation. Once the location of these facilities with respect to the proposed excavation is verified to the satisfaction of the Resident Engineer, the Contractor shall then proceed with a combination of hand and machine excavation as required preserving the integrity of the facilities. The installation of timber supports or underpinning, when soil foundation cannot fully support partially exposed pipes, may be required to prevent pipe movement as directed by the Resident Engineer.

5. Method Of Payment:

The unit price for this work item shall be based on cubic yard (CY) of average excavation with care and, is to be considered as an incremental cost for performing City work with gas facilities interferences.

6. Method Of Measurement:

A. For Paralleling Facilities: Volume calculated as: Depth as measured from existing street surface to

the bottom of unsheeted trench excavation allowable by OSHA regulations, multiplied by, the width measured as one (1) foot from the face of excavation toward the center of excavation, multiplied by the length of parallel facility, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5"). The gas facility is no longer considered to be in interference once sheeting has been installed, therefore no further compensation for paralleling facilities as described above will be made.

B. For Encroaching Facilities: Volume calculated as: Depth of trench as allowable by OSHA, maximum up to five (5) feet multiplied by, the width of partially exposed pipe plus one (1) foot, multiplied by the length of facility encroachment, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5").

C. Fully Exposed Gas Facilities: (Not shown on "Gas Cost Sharing Work Standard Sketch No. 5") along and inside trench and/or crossing trench at an angle greater than forty-five (45) degrees and/or a cover depth greater than five (5) feet from the existing street surface. The volume shall be measured as the depth of trench excavation multiplied by the distance measured along the sheeting line between two (2) points of intersections of the gas facilities and the sides of trench excavation, multiplied by the width of trench excavation.

D. For Additional Excavation And Restoration Due To So Called "Loss Trench", When The Integrity Of Pavement And Soil Above And Around Existing Live Gas Facilities Cannot Be Maintained Due To Its Lack Of Cohesiveness: Volume shall be calculated as: Depth of unsheeted trench excavation multiplied by width measured as distance of facility from closest edge of unsheeted excavation plus, width of facility proper plus, one (1) foot or a maximum width of three (3) feet multiplied by length of facility fully exposed divided by, twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

E. For Facilities Crossing Excavation For Catch Basins, Or Chutes Installations (When NYCDEP Funded) Or Fire Hydrant Branch Connections, Or Unsheeted Water Main Trench, Or House Sewer And/Or Water Services: Volume calculated as: Depth as measured from existing street surface to the bottom of the trench excavation multiplied by, the width taken as the outside diameter of pipe or the width of structure plus one (1) foot on either side (two (2) feet), multiplied by, the length of exposed facility crossing the trench, divided by twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

Overlapping volume dimensions measured as described above may occur when multiple facilities are paralleling excavations, encroaching excavations or crossing catch basins and catch basin chute installations. In such cases, all such facilities shall be counted as one limited by the extreme pipes, faces (See "Gas Cost Sharing Work Standard Sketch No. 2"). The volume shall then be calculated as described above.

7. Price To Cover:

The bid price shall also cover all additional supervision, labor, material, equipment and insurance necessary to excavate while protecting and maintaining (excluding supports for fully exposed live gas) gas facilities without disruption of service to the public and in accordance with contract specifications. The price shall also include, changes of sheeting method and excavation width configuration where necessary to accommodate gas facilities in their existing locations; difficulties during the installation of catch basins, chute connections, hydrant branch, and house sewer and water connections under or over gas facilities; loss of productivity due to slower rate of excavation (special care) during excavation, including the use of such methods as: hand excavation around existing single and multiple facilities, extra excavation and backfilling due to lost trench because of existing and adjacent gas facilities, compaction, removal of sheeting from the facilities, extra roadway base restoration and temporary pavement, associated maintenance and protection of traffic, barricades, and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.07 - Test Pits For Gas Facilities.

1. Description:

Under this section, the Contractor shall furnish all labor, materials, insurance, equipment and appliances necessary to excavate, sheet and, maintain test pits at locations approved by the Resident Engineer in consultation with the facility operator. Test pits shall be dug in order to ascertain exact locations, cover and invert elevations, clearances, alignment and operating status (live or dead) of existing gas facilities. The Contractor shall inspect jointly with the Resident Engineer and facility operator, gas facilities and other structures uncovered, take all relevant measurements and elevations as directed by the Resident Engineer. Tests to determine operating status of gas facilities shall be performed by facility operator. The pits shall be covered with steel plates during daytime nonworking hours, and uncovered, as required, until the inspection work is completed. Testing of gas facilities may require a maximum of four (4) hours. Then, the pits shall be backfilled with clean fill, and resurfaced with temporary pavement. All traffic shall be maintained and all safety measures as stipulated shall be complied with.

2. Methods Of Construction:

A. Excavation: Existing pavement to be removed shall be neatly cut along lines of removal with a saw or other approved equipment which leaves a neat straight joint line along the juncture with subsequently replaced pavement. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. Use of hand operated pneumatic and electric jackhammers will be permitted only for breaking pavement and removal of masonry, concrete and boulders, or as otherwise directed by the Resident Engineer. The Contractor shall properly dispose of all materials excavated from test pits away from site. Test pits shall be excavated at locations shown on the contract drawings or as directed by the Resident Engineer. Additional test pits may be required and shall be excavated where required, as ordered by the Resident Engineer. All test pits shall be excavated to a depth and size necessary to locate the existing facilities. Sheeting shall be used when depth of excavation exceeds five (5) feet. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Codes requirements and as specified in contract, whichever is more stringent. Care shall be taken that no existing gas facilities or other structures are broken or damaged. All broken or damaged facilities shall be reported immediately to facility operator who shall decide whether such facilities shall be repaired or replaced by company forces or by City contractor and in conformance with "General Provisions; Gas Cost Sharing Work Paragraph No. 9". Contractor shall excavate all material encountered, including large masses of concrete, cemented masonry and boulders, as directed by the Resident Engineer. Any type of excavation protection used, shall satisfy the following:

   (a) Industrial Code Rule 753.
   (b) Prevent injury to workers and the public, and avoid damage to existing water, sewer, and gas pipes or other structures, and to pavements and their foundations, through caving or sliding of the banks of the excavation.

   Should it become necessary, as determined by the Resident Engineer, to enlarge any test pit in any dimension after sheeting has been placed, the Contractor shall remove portions of the sheeting, as necessary, enlarge the test pits as directed, and replace the sheeting without additional compensation for this work other than for the additional volume of material excavated.

B. Maintenance Of Test Pits: Excavated test pits shall be maintained free of debris and kept dry by the Contractor in order to permit the inspection and measurements and to determine the locations of facilities. In order to accomplish this, Contractor shall, upon completion of excavation and placement of sheeting (if depth greater than five (5) feet), furnish and install adequate steel plates and posting over the excavated pits and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during nonworking hours. The Contractor shall then, at no additional cost, relocate such barricades, barrels, cones and other warning devices and remove steel plates, as and when directed by the Resident Engineer to facilitate the inspection of exposed facilities. When work is being performed and the pits are not covered with steel plates, the

Contractor shall provide complete and safe access to the test pits as may be required, and he shall provide construction barricades and maintain traffic at all times as shown or as directed by the Resident Engineer. Upon completion of test pit inspection by the Resident Engineer, the pit shall be backfilled by the Contractor as specified in contract, except that backfill material shall conform to contract specifications for such purpose.

C. Pavement And Sidewalk Restoration: After backfilling is completed, the Contractor shall construct a temporary pavement consisting of a minimum of four (4) inches thick asphaltic concrete mixture in roadway areas or a two (2) inches thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent pavement and sidewalk replacement is constructed as specified in contract.

3. Measurements:

The quantity to be measured for payment shall be the number of cubic yards of material removed from within the limits of the pit dimensions as directed by the Resident Engineer. The volume occupied by existing pipes or other structures remaining within the maximum payment lines will not be deducted from the total volume measured except, where the cross sectional area of these facilities exceeds four (4) square feet. As determined by the Resident Engineer, the quantity measured for payment may be proportionate to a fair and reasonable estimate of gas responsibility in the total volume excavated.

4. Price To Cover:

The contract price bid per cubic yard for test pits shall cover all additional costs of labor, material, insurance, equipment, appliances and incidentals required to excavate test pits, including removal and disposal of excavated materials, sheeting, steel plating, backfill, compaction and temporary pavement and sidewalk restoration all in accordance with the specifications and as directed by the Resident Engineer. The price shall also include the cost of providing safe access to the excavation by facility operator for the performance of certain test to determine operating status of gas facilities prior to City work. The price shall also include support and protection of all gas facilities crossing excavation, paralleling and/or encroaching any face of excavation.

SECTION 6.08 - "NO TEXT"

SECTION 6.09 - Trench Excavation and Backfill for New Gas Mains and Services (For National Grid Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat

straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. National Grid forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all National Grid hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied by existing pipes or other structures will be deducted from the total volume measured as shown on contract drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

SECTION 6.09a Trench Excavation and Backfill for New Gas Mains and Services (For Con Edison Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer. Clean sand backfill material shall be used and shall conform to Con Edison specification EO-1181-rev.6, General Specification for Backfilling of Trench and Small Openings.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as

directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The width and depth of the trench shall conform to Con Edison Gas Operations drawing 309495 rev. 4, Trench Excavation for Gas Mains Up to 350 PSIG, or as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. Con Edison forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all Con Edison hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied by existing pipes or other structures will be deducted from the total volume measured as shown on contract

drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

SECTION 6.06a - Special Care Excavation and Backfilling for Transmission Mains. (Transmission Main is described as any gas main with a MAOP greater than 124 psig)

1. Description:

Under this section, the contractor shall provide all labor, materials (except for sand to be utilized for backfill of a one foot envelope around the facility to be furnished by the facility operator), equipment, and incidentals required to support and protect the integrity of Gas Transmission Main during excavations. This facility is owned by the gas company operating in the area, hereafter referred to as facility operator. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in consultation with authorized representatives of the facility operator.

2. Applicability of Section:

This section shall apply to Transmission Main of various sizes located within any excavation sheeted or unsheeted (excavation refers to any excavation performed for city work and includes excavations performed that are to be subsequently unsheeted/sheeted using approved shoring methods and paralleling, encroaching and crossing any excavation. Parallel facilities are not exposed at any time during excavation (within 2' of edge of excavation)). Encroaching facilities are partially/fully exposed inside the limit of excavation. This section shall also apply to gas facility crossing catch basins excavation and catch basins sewer connections (chutes), water mains, fire hydrant branch connections, sanitary sewer, storm sewer, combination sewer, house sewer and/or water service connections excavations. The excavation around fully exposed live gas facilities along and within limits of excavation shall be covered by this section also, however the support requirement, if any is required, of such facilities is beyond the scope of these specifications and therefore shall be the responsibility of facility operator to determine and prescribe, at no cost to the City contract, but shall be a matter of adjustment between the contractor and facility operator.

3. Payment Restriction:

The bid item specified under this section shall not be used in combination with items covered under other sections for work done due to a particular gas facility. This item shall not be paid for new gas facilities when trenching for such new facilities has been performed by the contractor of record in common with trench excavation for City Work (overlapping trench limits). The cost of excavating with care as defined in this section shall be deemed included in the cost of trench excavation for the new gas facilities. This restriction shall apply even if such gas common trench excavation is not part of the contract. If facilities are in direct interference with City work, meaning that "minimum clearances" described in the General Provisions for Gas Cost Sharing (Para. No.8) cannot be maintained, the excavation shall be abandoned and the contractor shall be compensated as per the provisions specified in Paragraphs Nos. 5 and 6 of this item (6.06A).

4. Method of Construction:

All excavations in the vicinity of gas facilities shall be as required by NYS Industrial Code 753. No saw cutting of pavement or masonry for gas mains having less than 2 feet of cover to break asphalt/concrete as determined by the facility operator. The contractor shall use power excavation for the removal of pavement or masonry but only to the depth of such pavement or masonry **(breaking of pavement or masonry shall be done by means of hand held pneumatic breaking equipment).** Upon removal of pavement or masonry the contractor shall use hand excavation methods only **(pick and shovel; no power tools)** to ascertain the clearances of these facilities with respect to the proposed excavation. Once the location of these facilities with respect to the proposed excavation is verified to the satisfaction of the Resident Engineer and the facility operator the contractor shall then proceed with hand only within the zone of protection described as 2 feet from the face of the facility in all directions of the facility as required to preserve the integrity of the facility. Once outside of the zone of protection as described above the contractor may use a combination of hand and machine to complete the excavation.

5. Method of Payment:

The unit price for this work item shall be based on cubic yard (CY) of average excavation with special care and, is to be considered as an incremental cost for performing City work with gas facilities interferences.

6. Method of Measurement:

A. For Paralleling Facilities:
Volume calculated as: Depth as measured from existing street surface to the bottom of facility, multiplied by, the width measured as two (2) feet from the face of excavation toward the center of excavation, multiplied by the length of parallel facility, divided by twenty-seven (27) cubic feet per cubic yard Only hand excavation shall be utilized within the zone of protection identified as 2 feet from face of facility, beyond 2 feet from the face of facility the contractor can use a combination of hand and machine.

B. For Encroaching Facilities:
Volume calculated as: Depth as measured from existing street surface to the bottom of facility, multiplied by, the width measured as two (2) feet plus the exposed facility toward the center of excavation, multiplied by the length of the encroached facility, divided by twenty-seven (27) cubic feet per cubic yard Only hand excavation shall be utilized within the zone of protection identified as 2 feet from face of facility, beyond 2 feet from the face of facility the contractor can use a combination of hand and machine.

C. Fully Exposed Gas Facilities:
Volume calculated as: Depth as measured from existing street surface to the bottom of facility, multiplied by, the width measured as two (2) feet from the face of the facility on

either side plus the facility, multiplied by the length of the facility, divided by 27 cubic feet per cubic yard. Only hand excavation shall be utilized within the zone of protection identified as 2 feet from face of facility in all directions, beyond 2 feet from the face of facility in all directions the contractor can use a combination of hand and machine.

D. For Additional Excavation And Restoration Due To So Called "Loss Trench", When The Integrity Of Pavement And Soil Above And Around Existing Live Gas Facilities Cannot Be maintained Due To Its Lack of Cohesiveness:
Volume shall be calculated as: Depth of unsheeted trench excavation multiplied by width measured as distance of facility from closest edge of unsheeted excavation plus, width of facility proper plus, one (1) foot or a maximum width of three (3) feet multiplied by length of facility fully exposed divided by, twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

E. For Facilities Crossing Excavation For Catch Basins, Or Chutes Installations (When NYCDEP Funded) Or Fire Hydrant Branch Connections, Or Unsheeted Water Main Trench, Or House Sewer And/Or Water Services:
Volume calculated as: Depth as defined above multiplied by, the width taken as the outside diameter of pipe or the width of structure plus one (1) foot on either side (two (2) feet), multiplied by, the length of exposed facility crossing the trench, divided by twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

7. Price to Cover:

The bid price shall also cover all additional supervision, labor, material, equipment and insurance necessary to excavate while protecting and maintaining (excluding supports for fully exposed live gas) gas facilities without disruption of service to the public and in accordance with contract specifications. The price shall also include, changes of sheeting method and excavation width configuration where necessary to accommodate gas facilities in their existing locations; difficulties during the installation of catch basins, chute connections, hydrant branch, and house sewer, sanitary sewer, storm sewer, combination sewer and water connections under or over gas facilities; loss of productivity due to slower rate of excavation (special care) during excavation, compaction, removal of sheeting from the facilities, extra roadway base restoration and temporary pavement, associated maintenance of traffic, barricades, and traffic plates that may be required to temporarily close and/or complete the work. Breaking shall be done by means of hand held pneumatic breaking equipment. Inspection of exposed mains shall be performed by facility operator in a timely fashion and shall not unduly impede contractor's progress or productivity.

GAS COST SHARING STANDARD SPECIFICATIONS
SCHEDULE GCS-A

Average rate charged by utility companies to Disconnect and Reconnect Gas Services:

1. National Grid - $586.90 per Service/and Visit
2. Con Edison - $524.00 per Service/and Visit

IV - STANDARD SKETCHES; GAS COST SHARING WORK

Hereinafter attached are the following Standard Sketches for Gas Cost Sharing Work:

Sketch No. 1 - Support Requirements For Gas Mains And Services Crossing Excavation Greater Than 4' - 0" Wide At Any Angle

Sketch No. 1A - Support Requirements For Gas Mains Over 16" Diameter Up To And Including 48" Diameter Crossing Excavation At Any Angle

Sketch No. 2 - Typical Methods Of Measurement For Gas Crossings

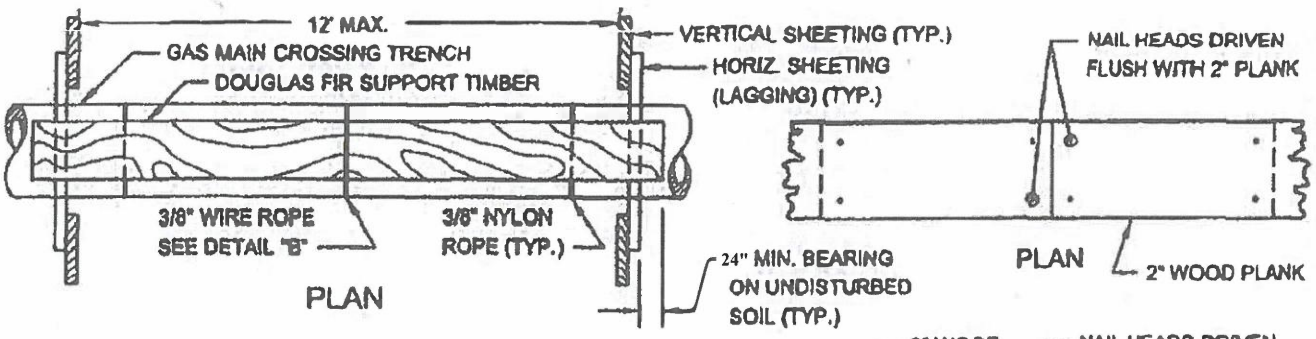
Sketch No. 3 - Utility Crossings During Catch Basin Chute Connection Pipe Installation

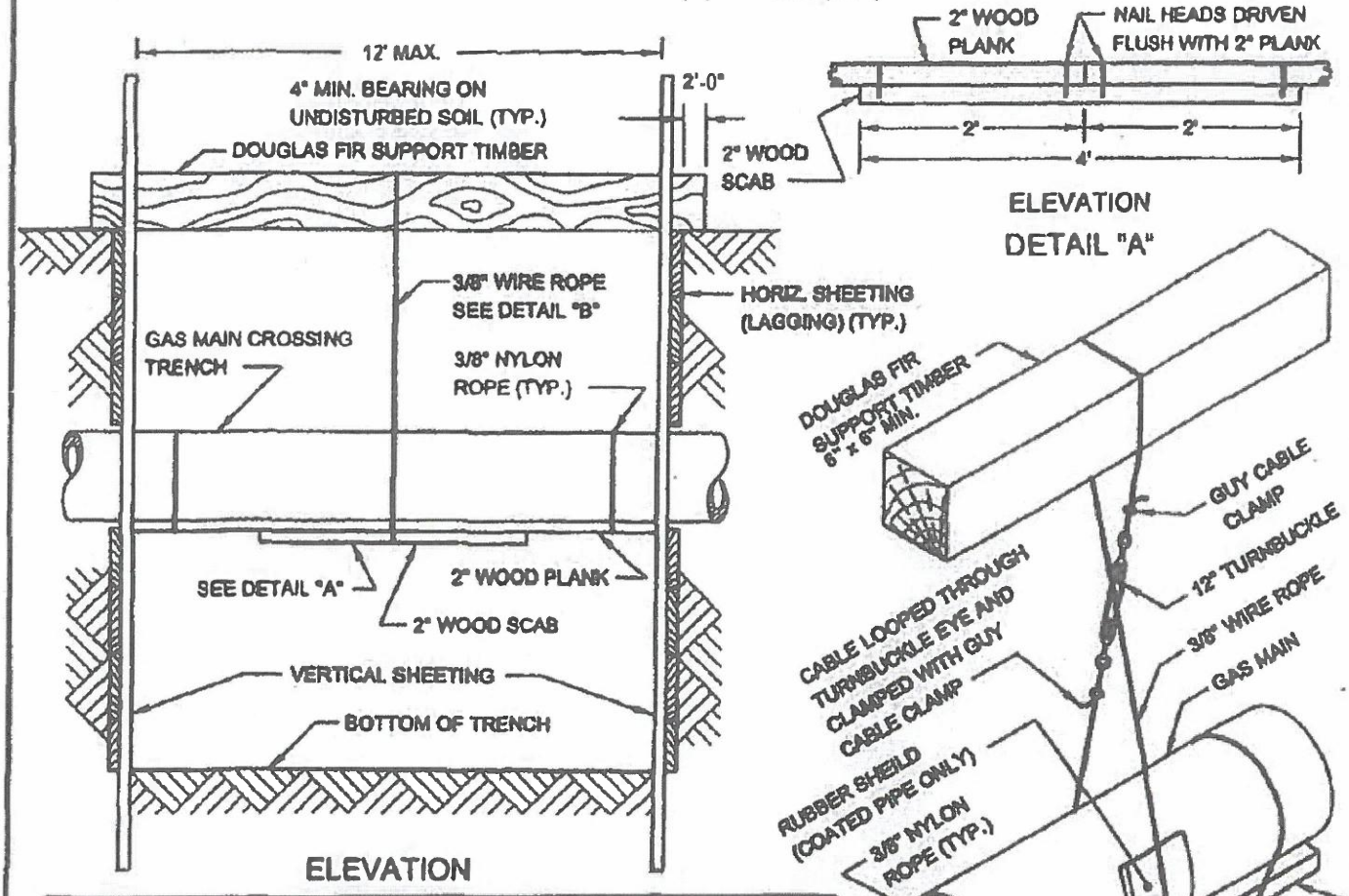
Sketch No. 4 - Utility Crossings During Catch Basin Chute Connection Pipe Installation (Extra Depth)

Sketch No. 5 - Gas Main Encroachment On And/Or Parallel To Excavation Of Unsheeted Trench

GAS COST SHARING WORK (SKETCH NO. 1)

SUPPORT REQUIREMENTS FOR GAS MAINS SUSPENDED IN EXCAVATIONS UP TO 12'-0" WIDE AT ANY ANGLE





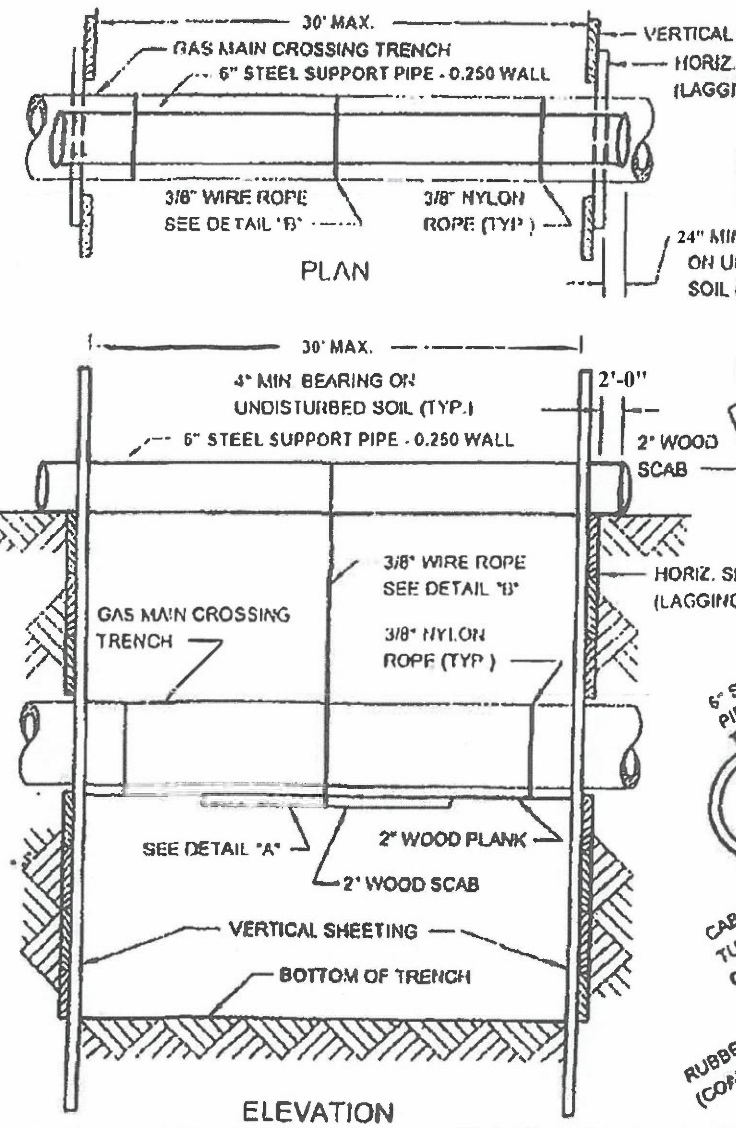
CABLE SUPPORT SPACING

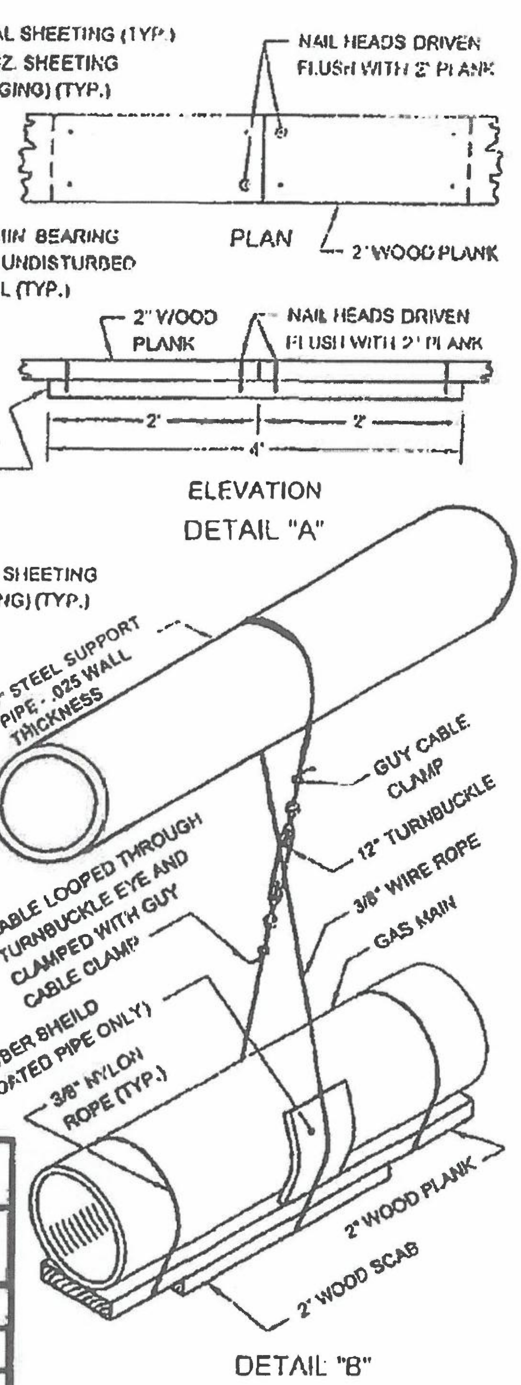
PIPE SIZE	CAST IRON	STEEL	PLASTIC
UP TO 2"	-	10'-0"	3'-0"
3" TO 4"	4'-0"	15'-0"	6'-0"
6" TO 10"	4'-0"	15'-0"	6'-0"
12" OR LARGER	6'-0"	15'-0"	6'-0"

NOTE: SUPPORTS FOR GAS TRANSMISSION FACILITIES SHALL BE REVIEWED WITH GAS ENGINEERING PRIOR TO INSTALLATION.

REVISED DEC. 2019 - J.YIP

GAS COST SHARING WORK (SKETCH NO. 1A)
SUPPORT REQUIREMENTS FOR GAS MAINS SUSPENDED IN EXCAVATIONS BETWEEN 12'-0" AND 30'-0" WIDE AT ANY ANGLE



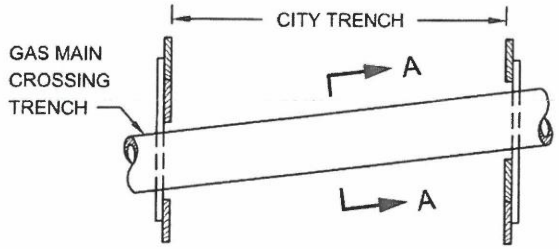


CABLE SUPPORT SPACING			
PIPE SIZE	CAST IRON	STEEL	PLASTIC
UP TO 2"	-	10'-0"	3'-0"
3" TO 4"	4'-0"	15'-0"	6'-0"
6" TO 10"	4'-0"	15'-0"	6'-0"
12" OR LARGER	6'-0"	15'-0"	6'-0"

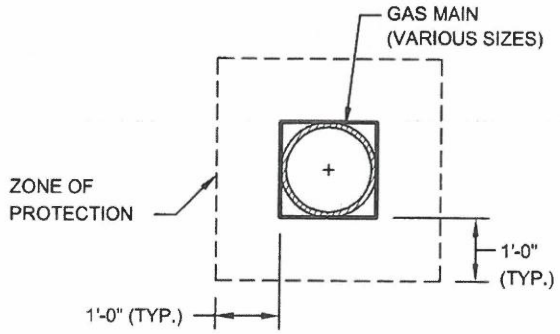
NOTE: SUPPORTS FOR GAS TRANSMISSION FACILITIES SHALL BE REVIEWED WITH GAS ENGINEERING PRIOR TO INSTALLATION.

GAS COST SHARING WORK (SKETCH NO. 2)

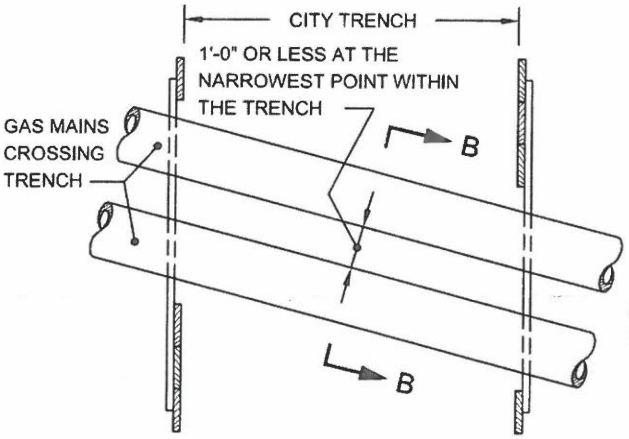
TYPICAL METHODS OF MEASUREMENT FOR GAS CROSSINGS



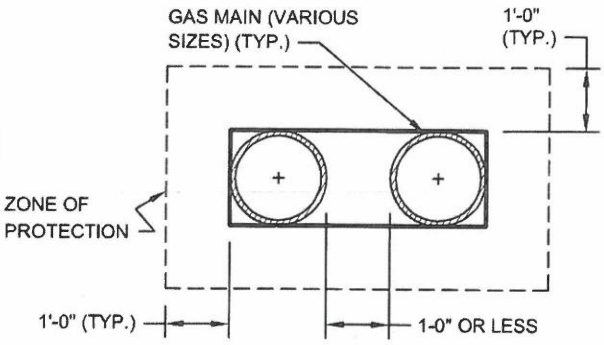
SINGLE FACILITY CROSSING



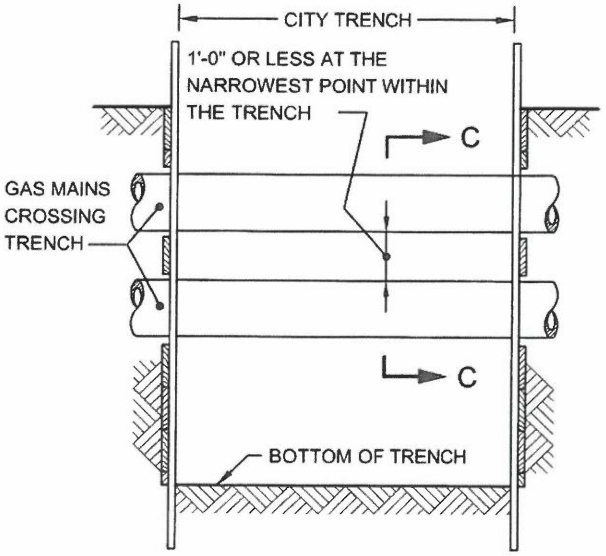
SECTION A-A



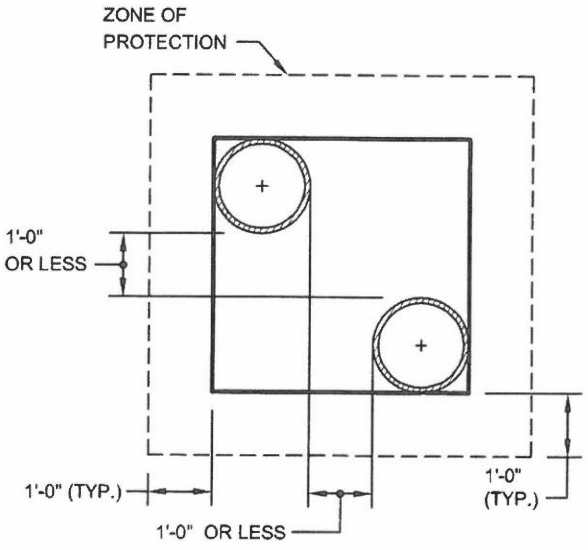
MULTIPLE FACILITIES
(GAS MAINS AT SAME ELEVATION)



SECTION B-B



MULTIPLE FACILITIES
(ONE CROSSING AT DIFFERENT ELEVATIONS)



SECTION C-C

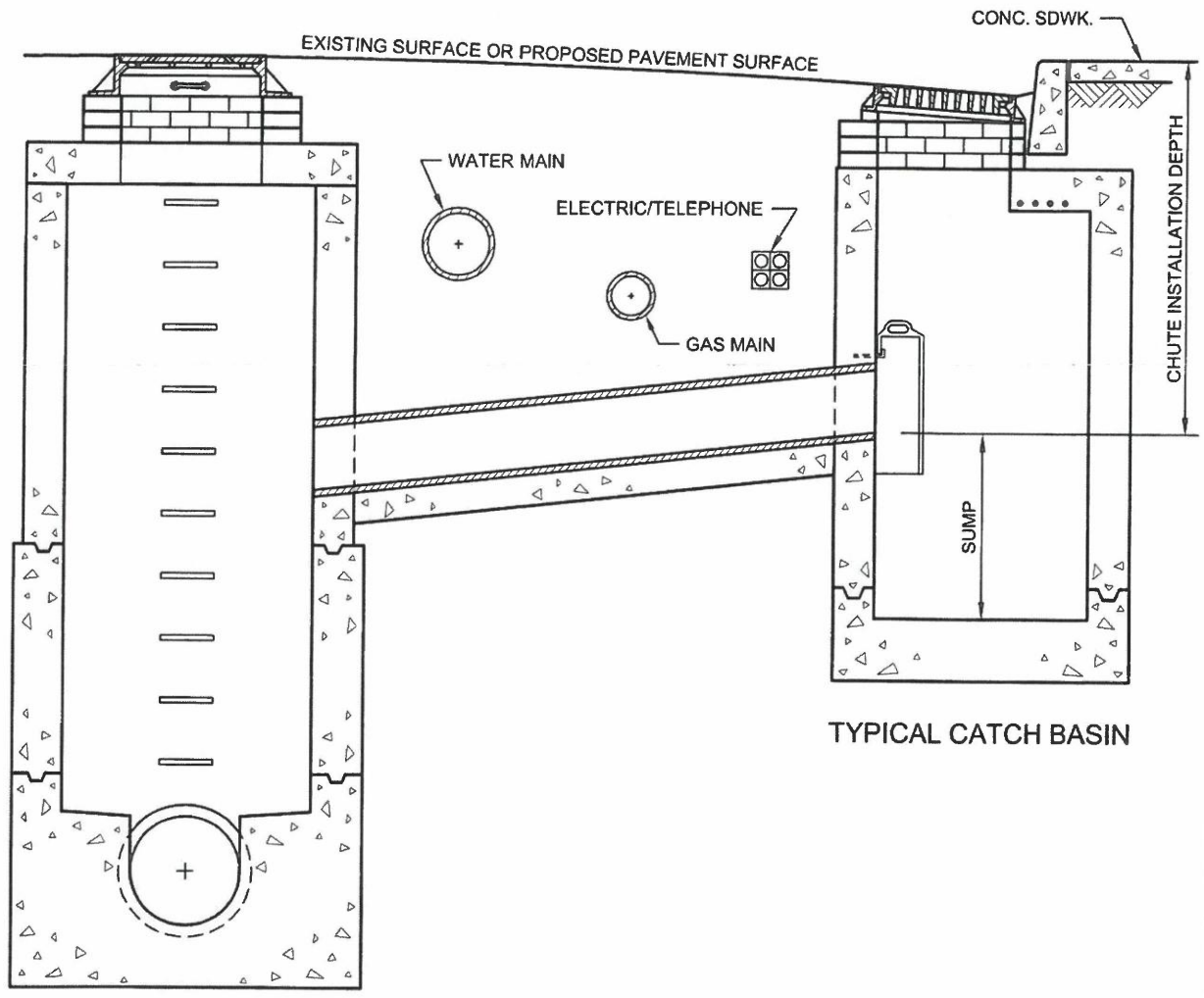
NOTE:

GAS MAINS MAY OR MAY NOT BE PARALLEL TO EACH OTHER.

REVISED SEPT. 2004 - L. ADRIEN
REVISED SEPT. 2004 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 3)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION



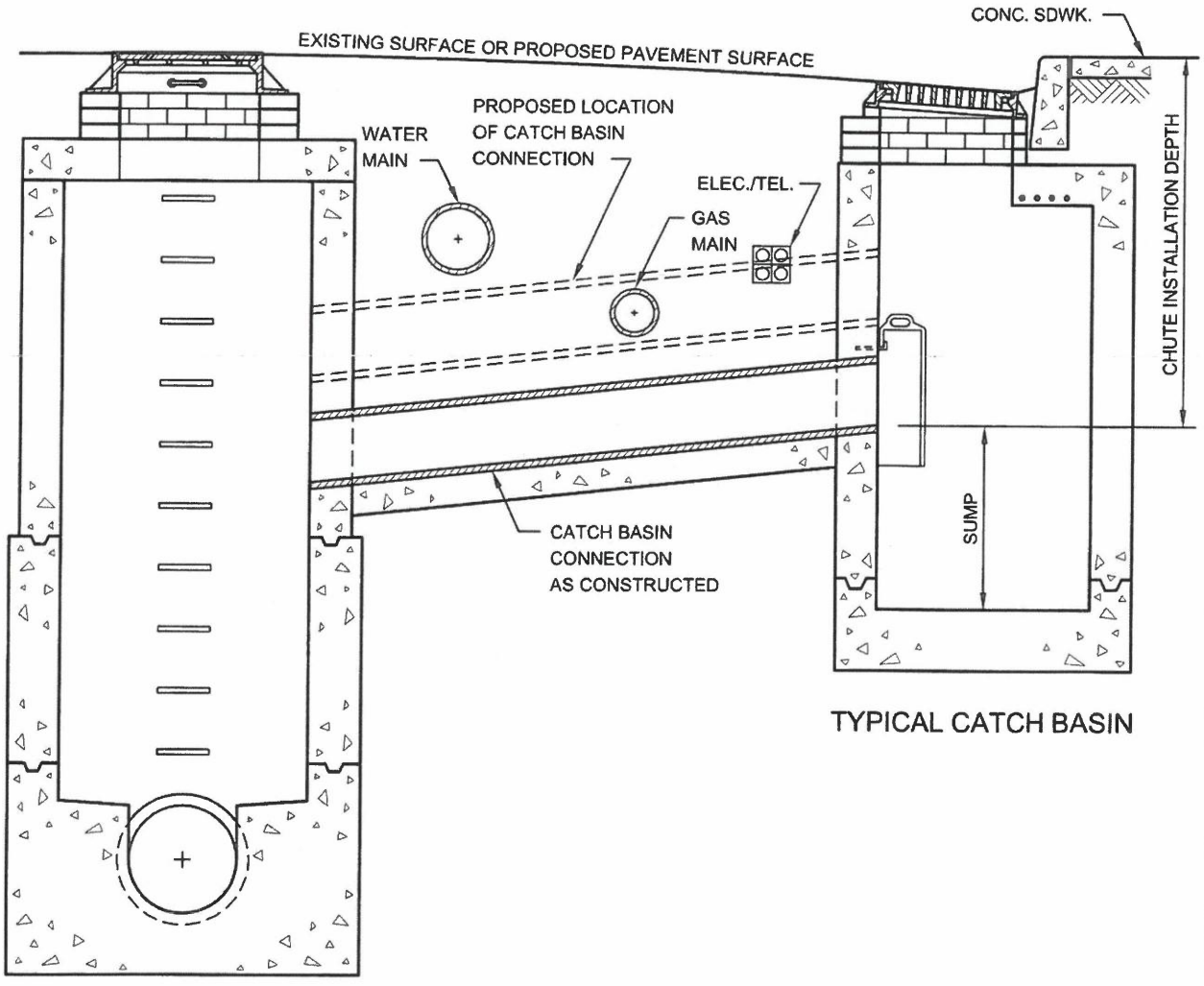
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - L. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 4)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION (EXTRA DEPTH)



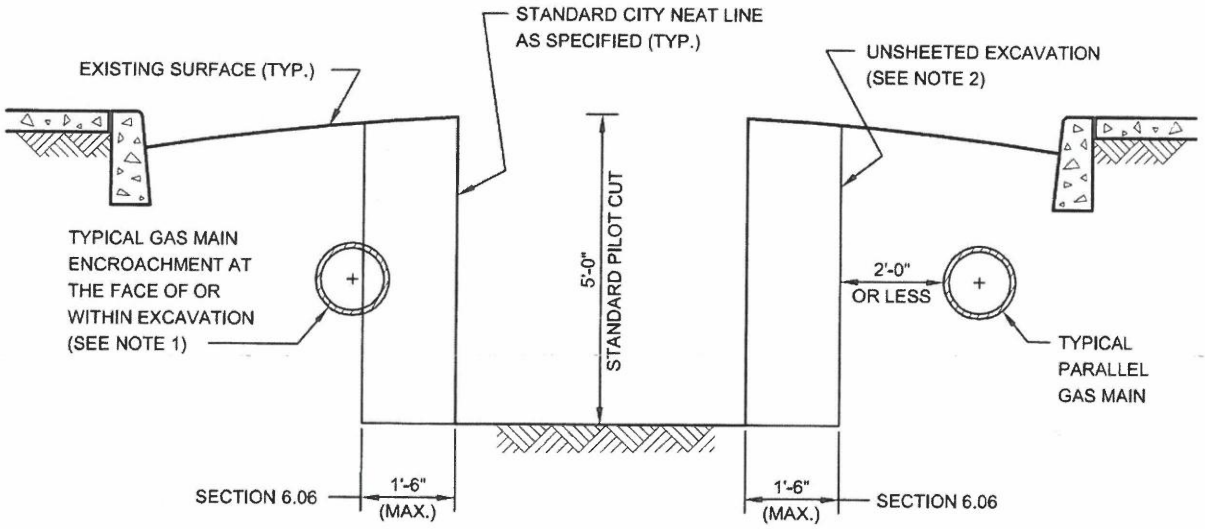
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - I. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 5)

GAS MAIN ENCROACHMENT ON AND/OR PARALLEL TO EXCAVATION OF UNSHEETED TRENCH



NOTES:

(1) GAS MAIN LOCATED AS SHOWN MAY HAVE TO BE REMOVED BY THE FACILITY OPERATOR PRIOR TO THE START OF CITY EXCAVATION, OTHERWISE, THE CONTRACTOR WILL BE PAID UNDER SECTION 6.06 FOR THE SAID WORK. IF GAS MAIN IS ABANDONED THEN SECTION 6.03 SHALL APPLY.

(2) EIGHTEEN (18) INCHES FROM STANDARD NEAT LINE IS THE MAXIMUM ALLOWABLE WIDTH OF AREA THAT MAY BE DISTURBED OR EXCAVATED DURING INSTALLATION OF CERTAIN TYPES OF SHEETING SYSTEMS THAT MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OF THE DEPARTMENT OF DESIGN AND CONSTRUCTION OF THE CITY OF NEW YORK.

REVISED OCT. 2004 - J. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

V - PRELIMINARY GAS WORK TO BE PERFORMED BY FACILITY OPERATOR

APPLICABLE TO ALL GAS DRAWINGS:

- ALL RELOCATION WORK SHOWN IN THIS SECTION IS TO BE PERFORMED BY FACILITY OPERATOR.
- ALL SUPPORT AND PROTECTION WORK IS TO BE PERFORMED BY CITY CONTRACTOR.
- IF ADDITIONAL INFORMATION IS NEEDED REGARDING THE FACILITY OPERATOR RELOCATION WORK, THE CONTRACTOR IS ADVISED TO CONTACT THE GAS COMPANY REPRESENTATIVE:

Mr. N. JACOBS
NATIONAL GRID
287 MASPETH AVENUE
BROOKLYN, NY 11211
718-963-5612
Neville.jacobs@nationalgrid.com

DENNIS BRADY
CON EDISON COMPANY
4 IRVING PL. 17th FLOOR
NEW YORK, NY 12117
917-608-3435
bradyd@conedison.com

(NO TEXT IN THIS AREA, TURN PAGE)

nationalgrid

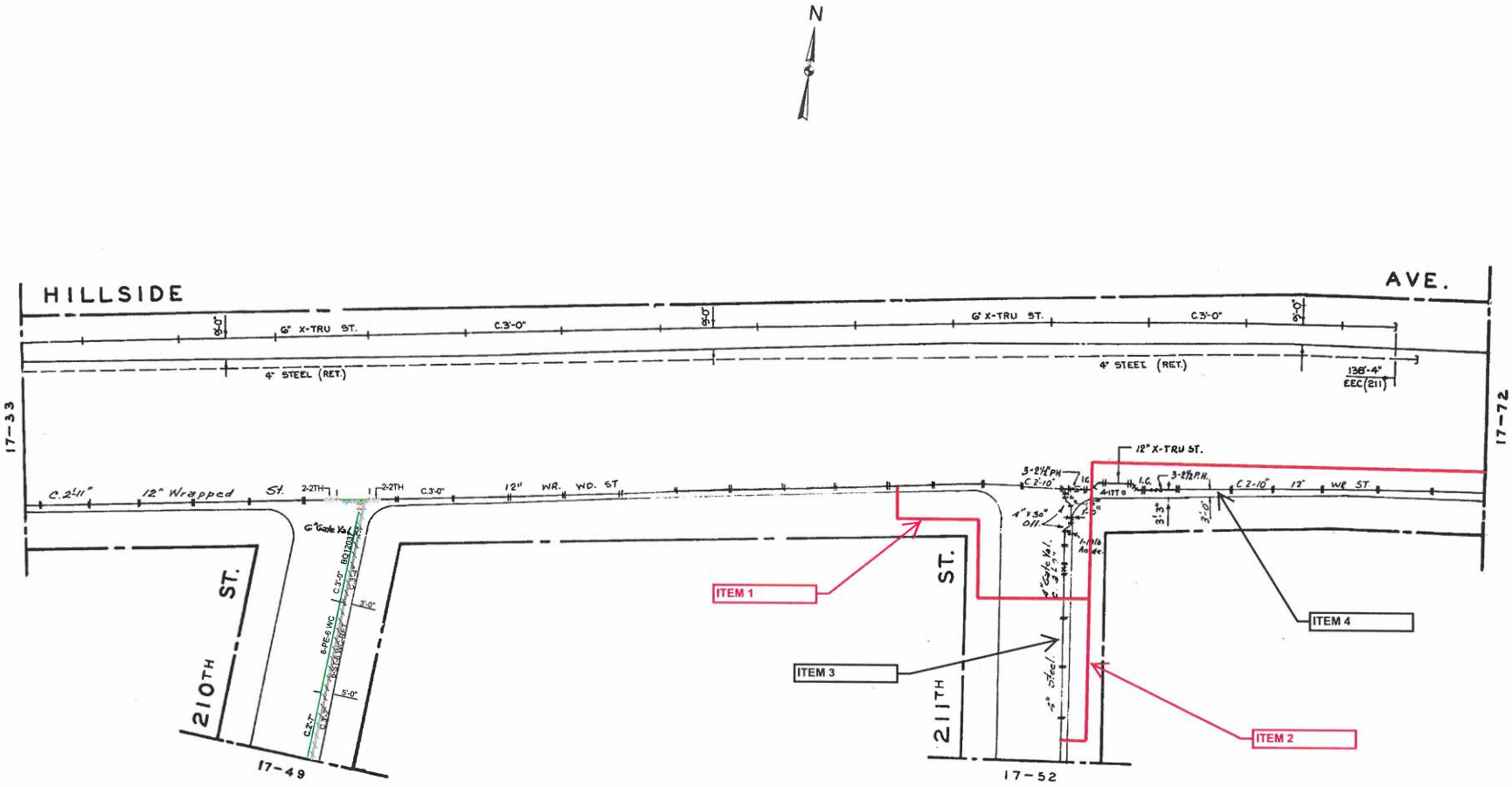
PROJECT: QED1059

SHEET#	ITEM#	Action	SIZE	MATL	FOOTAGE	ON STREET	CROSS STREET 1	CROSS STREET 2	PRESSURE	REIMB
1	1	Install	12"	PL	419	Hillside Ave	211th St	Hollis Court Blvd	LP	Yes
1	2	Install	8"	PL	99	211th St	Hillside Ave	88th Rd	LP	Yes
1	3	Retire	4"	ST	146	211th St	Hillside Ave	88th Rd	LP	Yes
1	4	Retire	12"	ST	319	Hillside Ave	211th St	Hollis Court Blvd	LP	Yes
2	5	Install	12"	PL	836	Hillside Ave	Hollis Court Blvd	212th St	LP	Yes
2	6	Install	8"	PL	114	212th St	Hillside Ave	Intersection	LP	Yes
2	7	Retire	12"	PL	31	Hollis Court Blvd	Hillside Ave	Intersection	LP	Yes
2	8	Retire	12"	ST	538	Hillside Ave	Hollis Court Blvd	212th St	LP	Yes
2	9	Retire	8"	ST	116	212th St	Hillside Ave	Whitehall Terr	LP	Yes
2	10	Retire	4"	ST	35	Hillside Ave	212th St	212th Pl	LP	Yes
2	11	Retire	12"	CI	38	212th St	Hillside Ave	89th Ave	LP	Yes
2	12	Retire	6"	ST	51	Hillside Ave	212th St	212th Pl	LP	Yes
2	13	Retire	6"	CI	95	Hillside Ave	212th St	212th Pl	LP	Yes
3	14	Install	12"	PL	244	Hillside Ave	212th St	212th Pl	LP	Yes
3	15	Install	8"	PL	74	212th Pl	Hillside Ave	89th Ave	LP	Yes
3	16	Retire	6"	CI	150	Hillside Ave	212th St	212th Pl	LP	Yes
3	17	Retire	6"	ST	46	212th Pl	Hillside Ave	89th Ave	LP	Yes
3	18	Retire	6"	PL	180	Hillside Ave	212th St	213th St	LP	Yes
4	19	Install	12"	PL	438	89th Ave	212th St	212th Pl	LP	Yes
4	20	Retire	12"	ST	290	89th Ave	212th St	212th Pl	LP	Yes
4	21	Retire	12"	CI	73	212th St	89th Ave	89th Rd	LP	Yes
5	22	Retire	12"	ST	204	89th Ave	212th St	213th St	LP	Yes
5	23	Install	12"	PL	174	89th Ave	212th St	213th St	LP	Yes
6	24	Install	12"	PL	165	89th Ave	212th Pl	213th St	LP	Yes
6	25	Retire	12"	ST	178	89th Ave	212th Pl	213th St	LP	Yes
7	26	Install	8"	PL	491	Kew Gardens Rd	129th St	130th St	LP	Yes
7	27	Retire	6"	PL	36	Kew Gardens Rd	129th St	Intersection	LP	Yes
7	28	Retire	6"	CI	296	Kew Gardens Rd	129th St	130th St	LP	Yes
7	29	Retire	8"	PL	136	129th St	Kew Gardens Rd	Metropolitan Ave	LP	Yes
8	30	Install	8"	PL	843	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
8	31	Retire	6"	ST	188	Kew Gardens Rd	130th St	Intersection	LP	Yes
8	32	Retire	6"	CI	666	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
8	33	Retire	6"	PL	24	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
9	34	Install	8"	PL	489	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
9	35	Retire	6"	PL	126	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
9	36	Retire	6"	CI	364	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
10	37	Install	8"	PL	100	Hillside Ave	131st St	Kew Gardens Rd	LP	Yes
10	38	Retire	6"	CI	21	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
10	39	Retire	8"	PL	23	130th St	Kew Gardens Rd	Hillside Ave	LP	Yes
10	40	Retire	8"	CI	44	Hillside Ave	131st St	Kew Gardens Rd	LP	Yes
10	41	Retire	8"	ST	35	Hillside Ave	131st St	Kew Gardens Rd	LP	Yes
11	42	Install	8"	PL	88	135th St	87th Ave	Hillside Ave	LP	Yes
11	43	Retire	8"	CI	58	Hillside Ave	Kew Gardens Rd	131st St	LP	Yes
11	44	Retire	6"	CI	5	135th St	87th Ave	Hillside Ave	LP	Yes

11	45	Retire	6"	ST	21	135th St	87th Ave	Hillside Ave	LP	Yes
11	46	Retire	8"	ST	11	135th St	87th Ave	Hillside Ave	LP	Yes
12	47	Install	8"	PL	1136	87th Ave	134th St	135th St	LP	Yes
12	48	Retire	4"	CI	104	134th St	87th Ave	86th Rd	LP	Yes
12	49	Retire	6"	PL	194	87th Ave	134th St	135th St	LP	Yes
12	50	Retire	6"	CI	804	135th St	87th Ave	Hillside Ave	LP	Yes
12	51	Retire	6"	ST	19	135th St	87th Ave	Hillside Ave	LP	Yes
13	52	Install	8"	PL	611	87th Ave	135th St	136th St	LP	Yes
13	53	Retire	6"	PL	80	87th Ave	136th St	Van Wyck Expy	LP	Yes
13	54	Retire	6"	CI	431	136th St	87th Ave	Deadend	LP	Yes
14	55	Install	8"	PL	764	86th Rd	134th St	135th St	LP	Yes
14	56	Retire	4"	ST	363	86th Rd	134th St	135th St	LP	Yes
14	57	Retire	6"	ST	46	86th Rd	134th St	Intersection	LP	Yes
14	58	Retire	6"	CI	55	86th Rd	134th St	Kew Gardens Rd	LP	Yes
14	59	Retire	4"	PL	66	135th St	86th Rd	87th Ave	LP	Yes
14	60	Retire	4"	CI	101	134th St	86th Rd	87th Ave	LP	Yes
15	61	Install	8"	PL	279	86th Rd	Kew Gardens Rd	134th St	LP	Yes
15	62	Retire	6"	CI	109	86th Rd	Kew Gardens Rd	134th St	LP	Yes
15	63	Retire	6"	ST	176	87th Ave	Kew Gardens Rd	134th St	LP	Yes
16	64	Install	8"	PL	450	Metropolitan Ave	129th St	Intersection	LP	Yes
16	65	Retire	8"	PL	53	129th St	Kew Gardens Rd	Metropolitan Ave	LP	Yes
16	66	Retire	6"	ST	129	129th St	Kew Gardens Rd	Metropolitan Ave	LP	Yes
16	67	Retire	8"	ST	125	Metropolitan Ave	129th St	127th St	LP	Yes
16	68	Retire	6"	CI	21	129th St	Metropolitan Ave	Hillside Ave	LP	Yes
17	69	Install	8"	PL	259	Hillside Ave	136th St	Intersection	LP	Yes
17	70	Retire	6"	CI	129	Hillside Ave	136th St	Intersection	LP	Yes
17	71	Retire	6"	ST	96	Hillside Ave	136th St	Van Wyck Expy	LP	Yes

NOTE: GAS INSTALLATION AND RETIREMENT SUBJECT TO CHANGE BY FACILITY OPERATOR

EP7-27A3

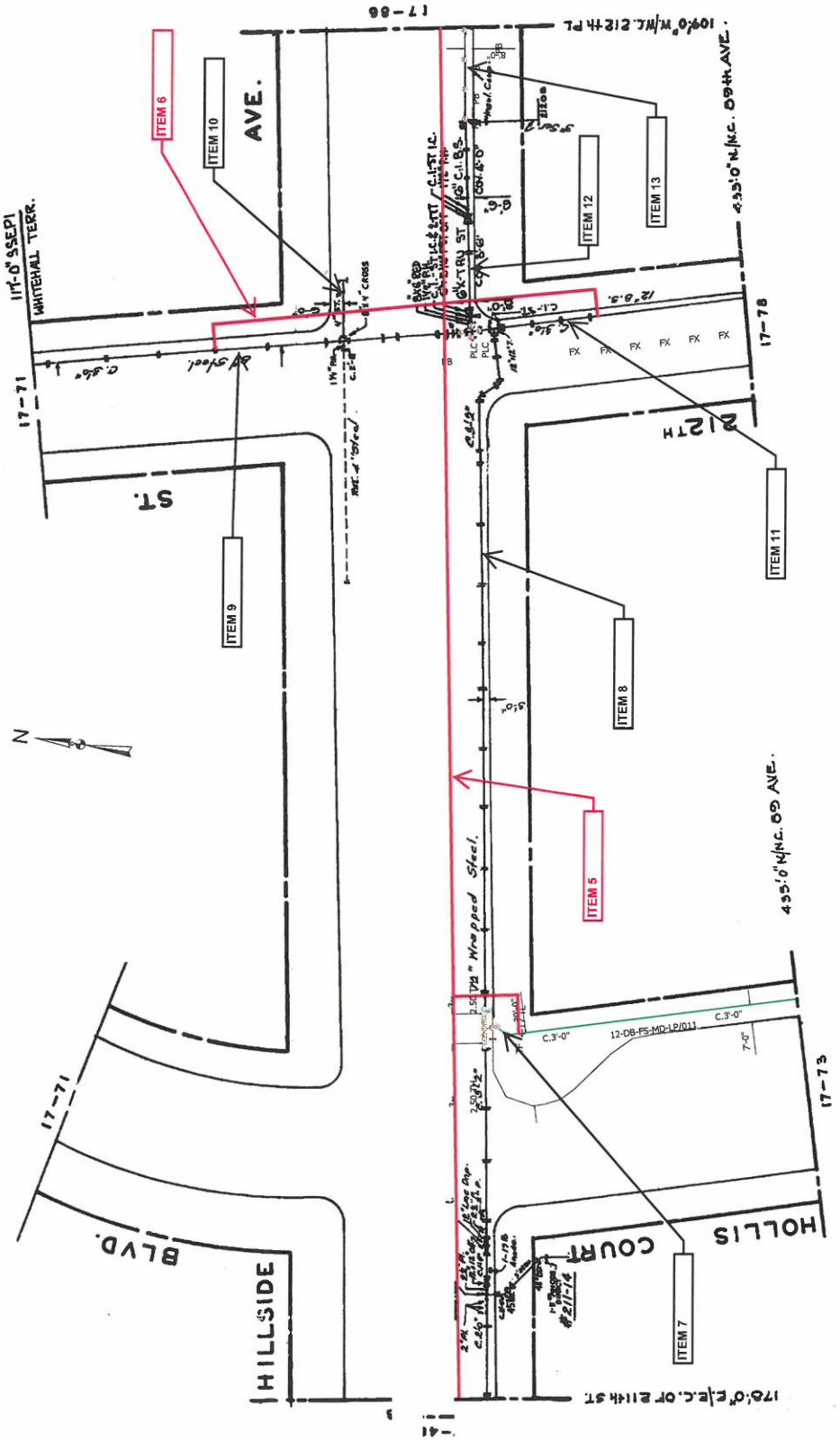


nationalgrid

National Grid
QED1059
Sheet 1 of 17

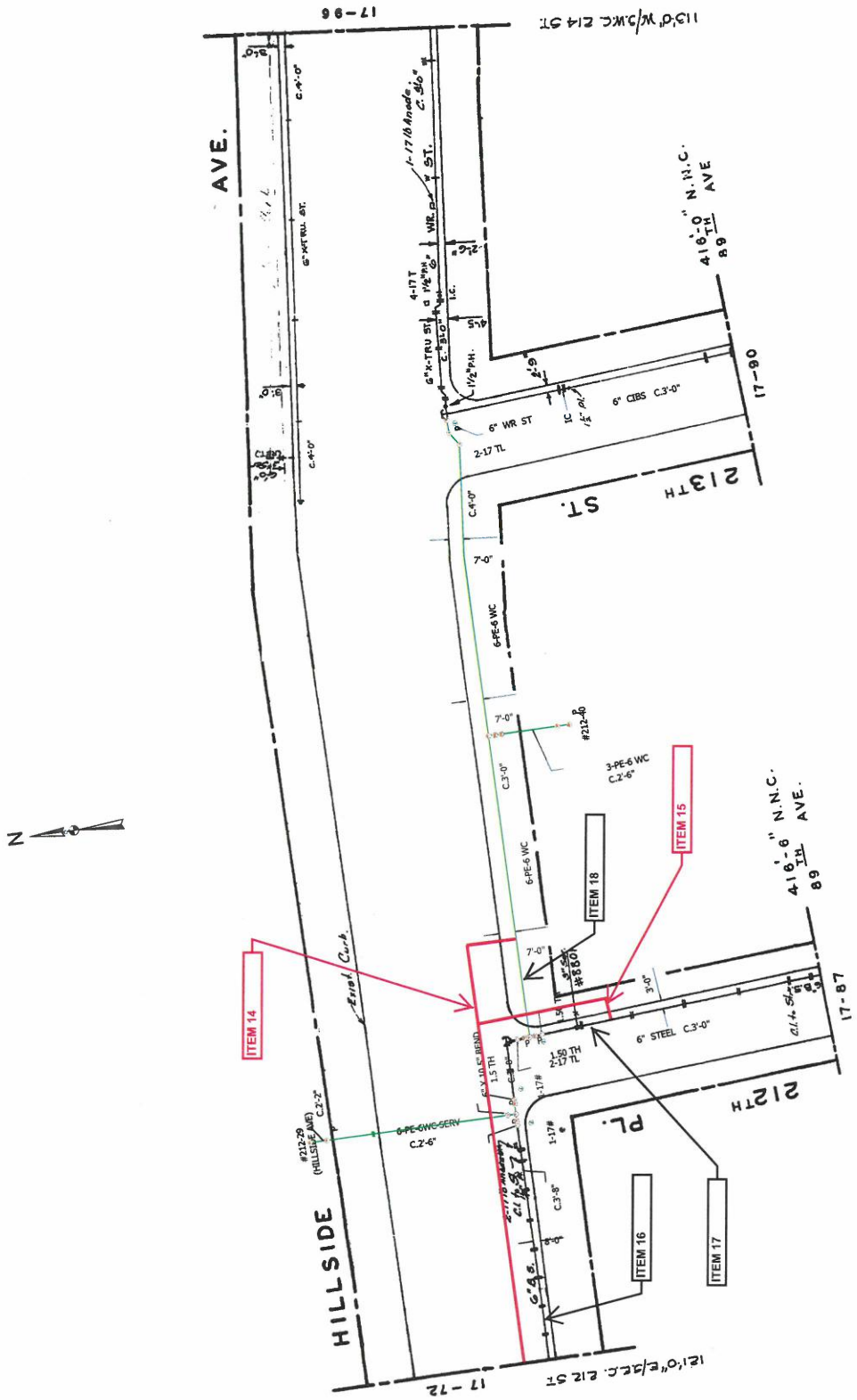
PROJECT ID: QED1059

National Grid
QED1059
Sheet 2 of 17



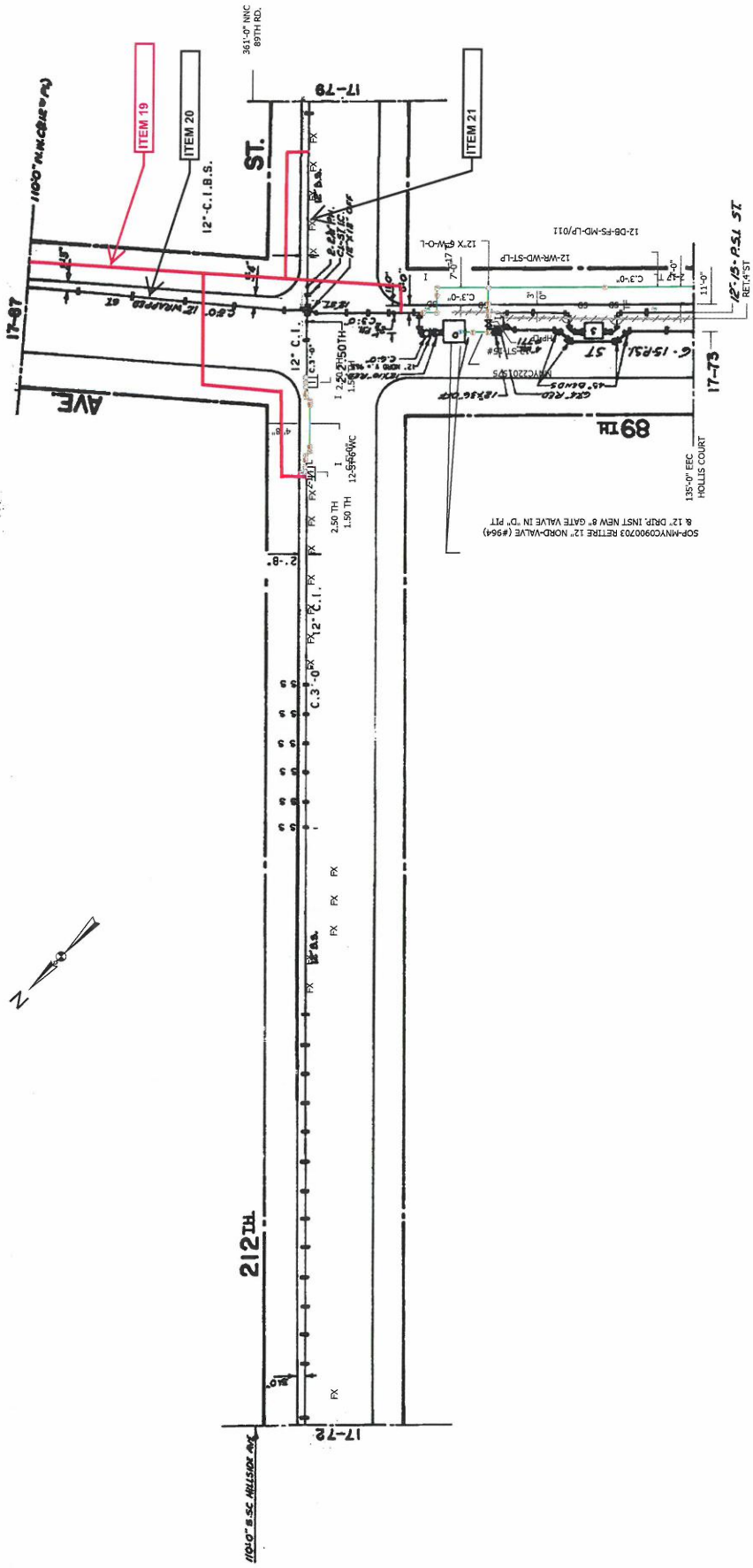
nationalgrid

National Grid
QED1059
Sheet 3 of 17



nationalgrid

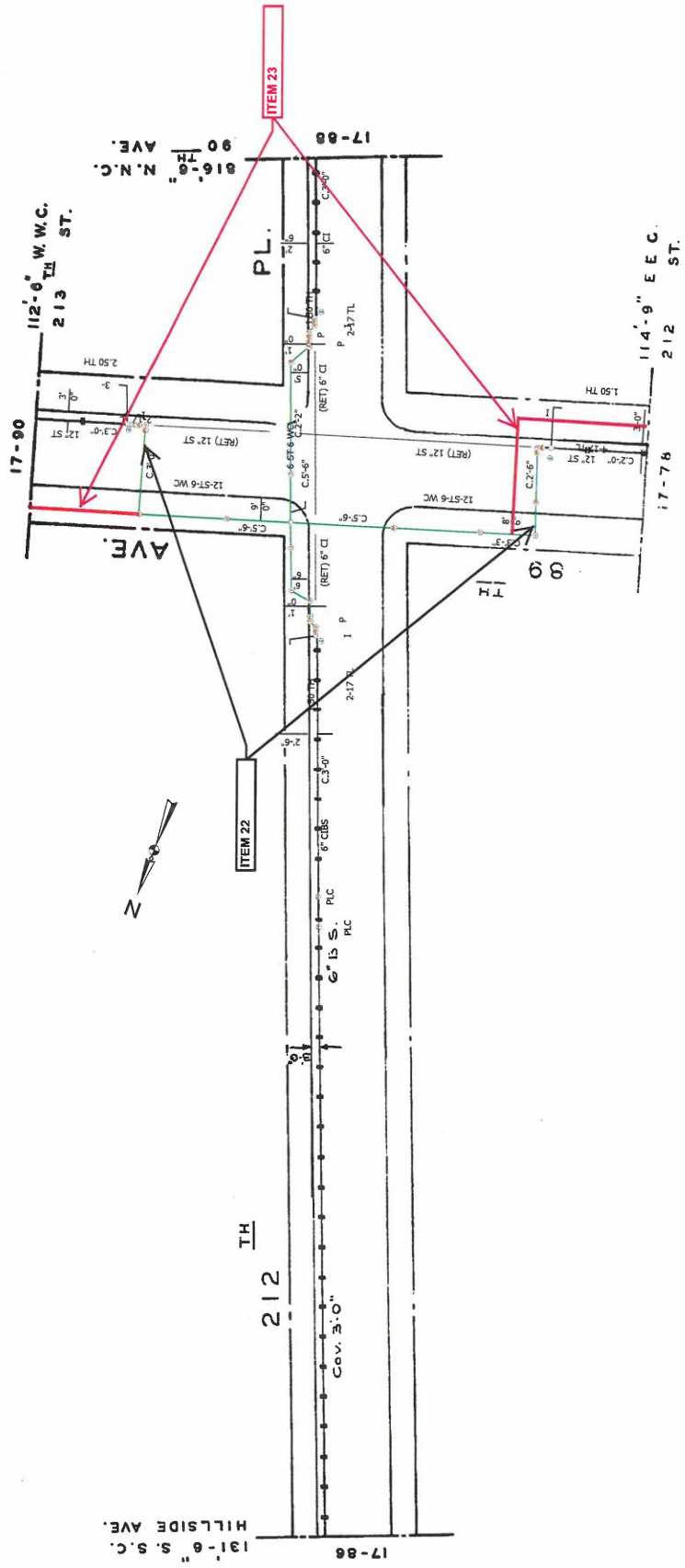
National Grid
QED1059
Sheet 4 of 17



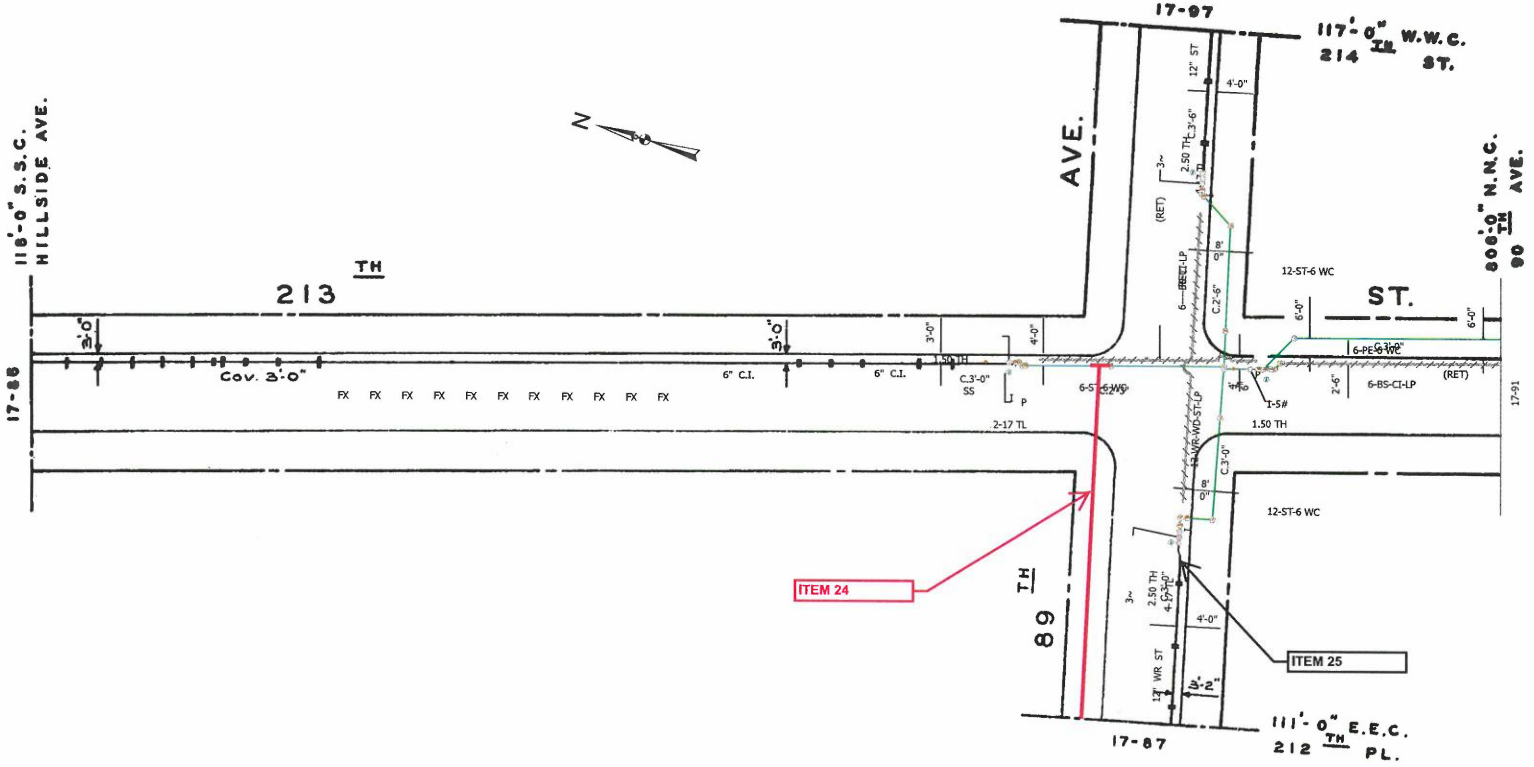
nationalgrid

PROJECT ID: QED1059

National Grid
QED1059
Sheet 5 of 17



nationalgrid

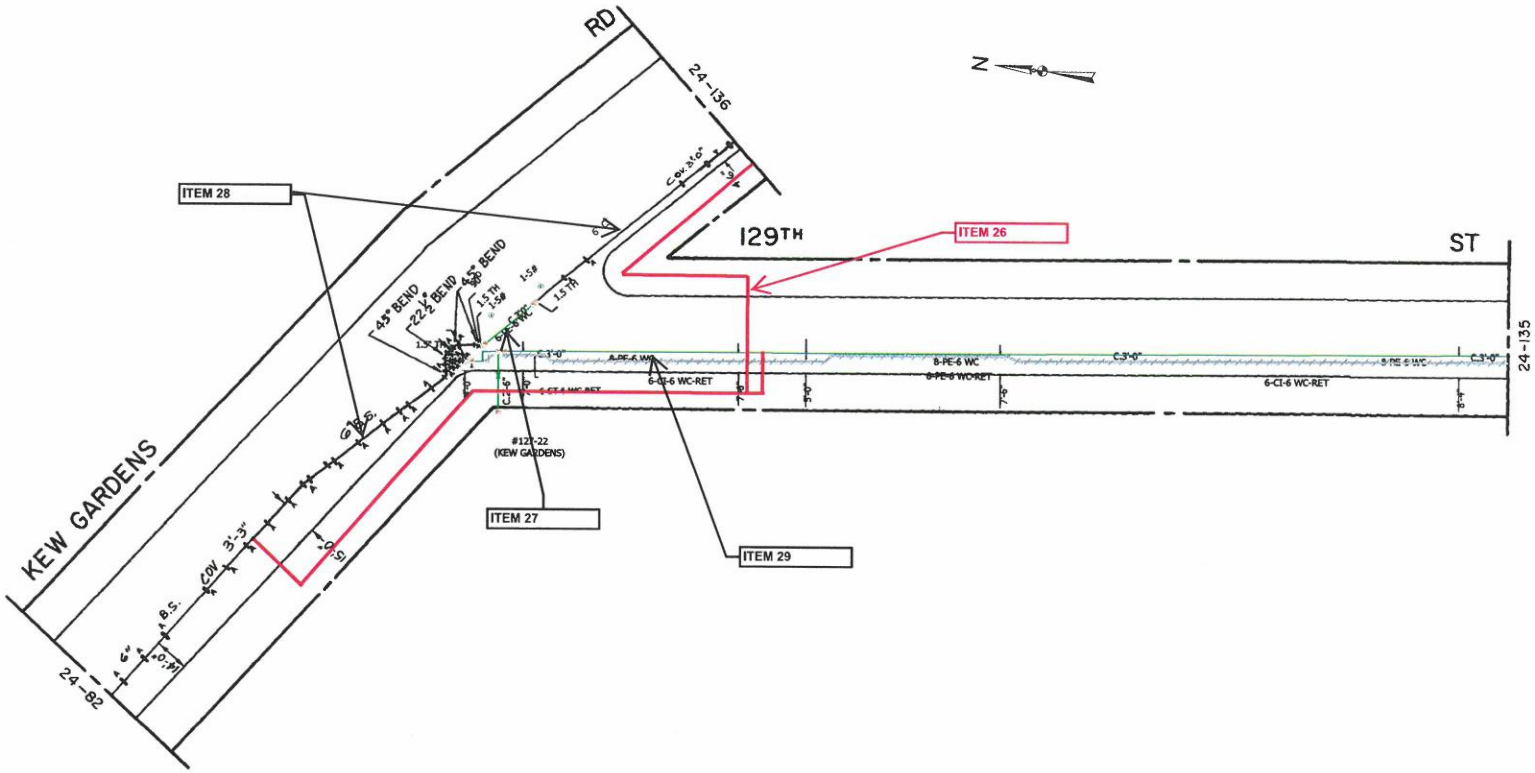


EP7-27A8

nationalgrid

National Grid
QED1059
Sheet 6 of 17

PROJECT ID: QED1059

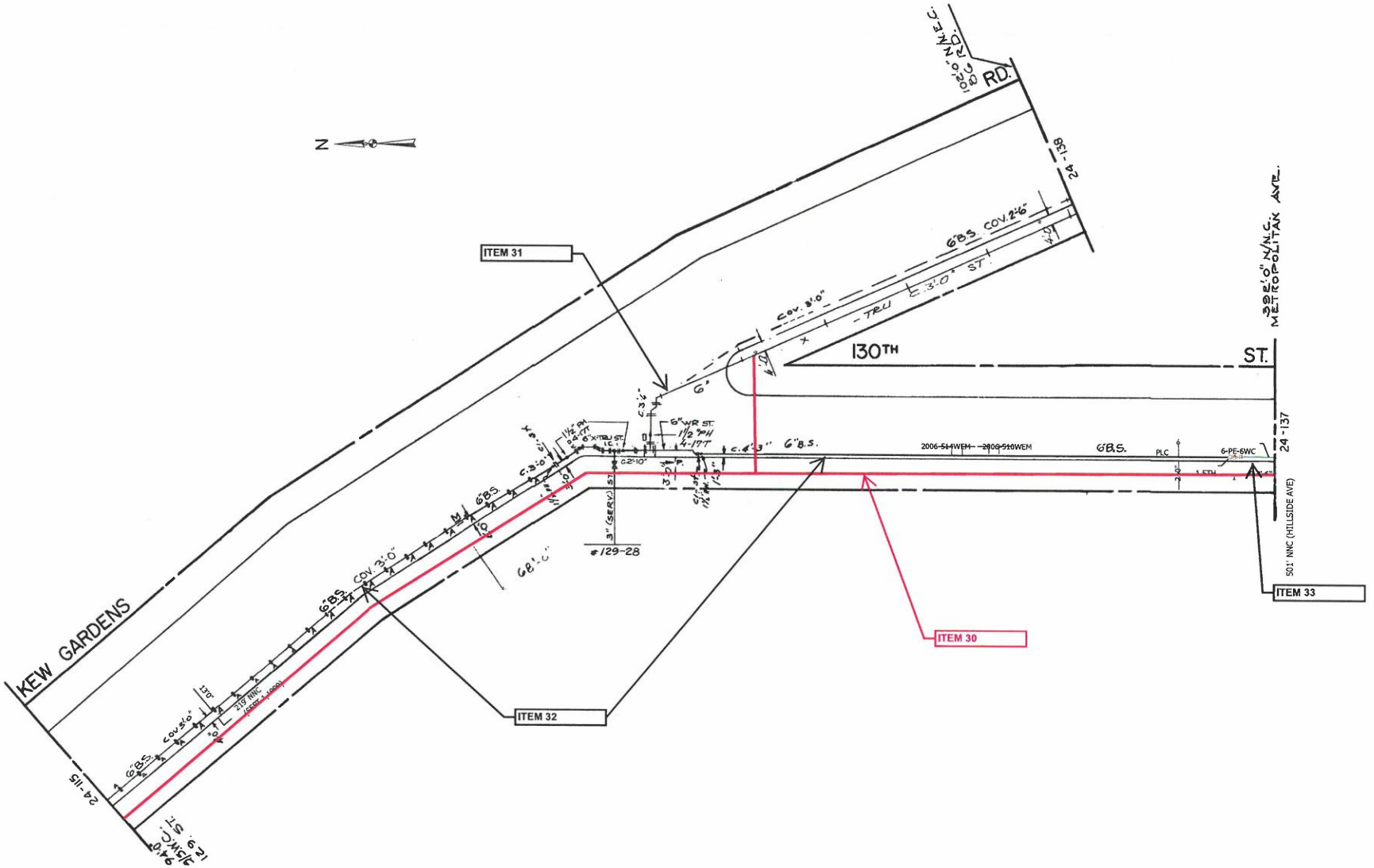


EP7-27A9

nationalgrid

National Grid
QED1059
Sheet 7 of 17

PROJECT ID: QED1059



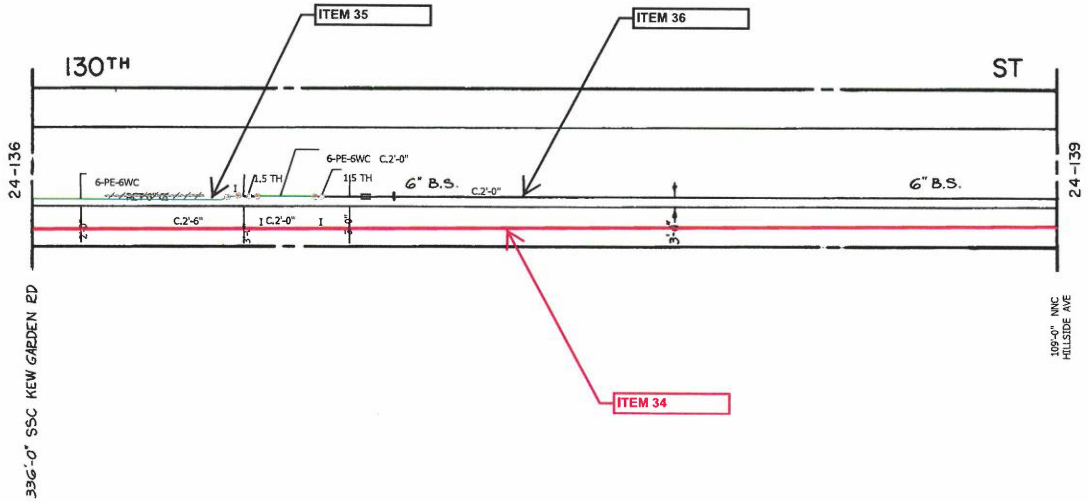
EP7-27A10

nationalgrid

National Grid
QED1059
Sheet 8 of 17

PROJECT ID: QED1059

EP7-27A11

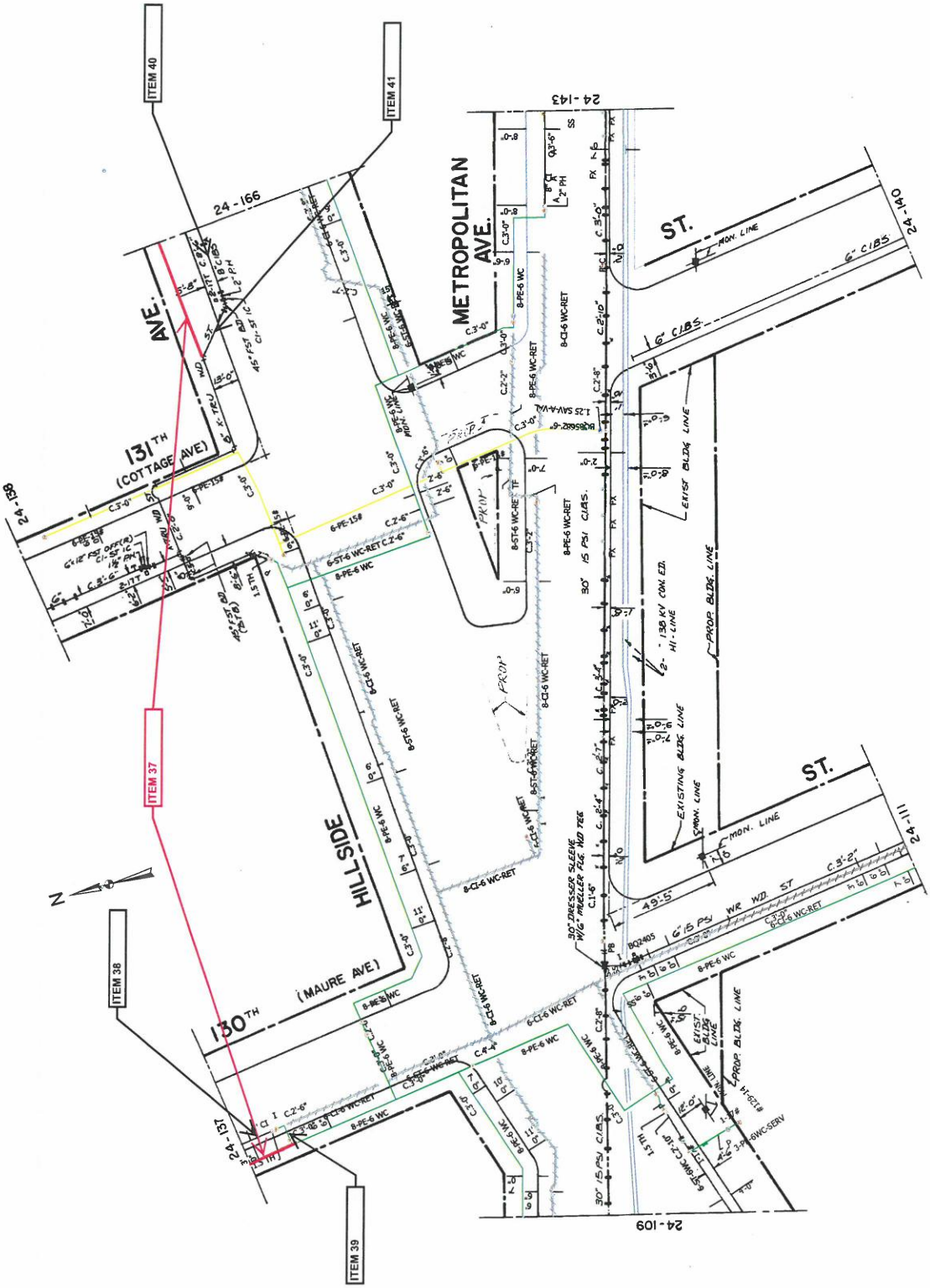


nationalgrid

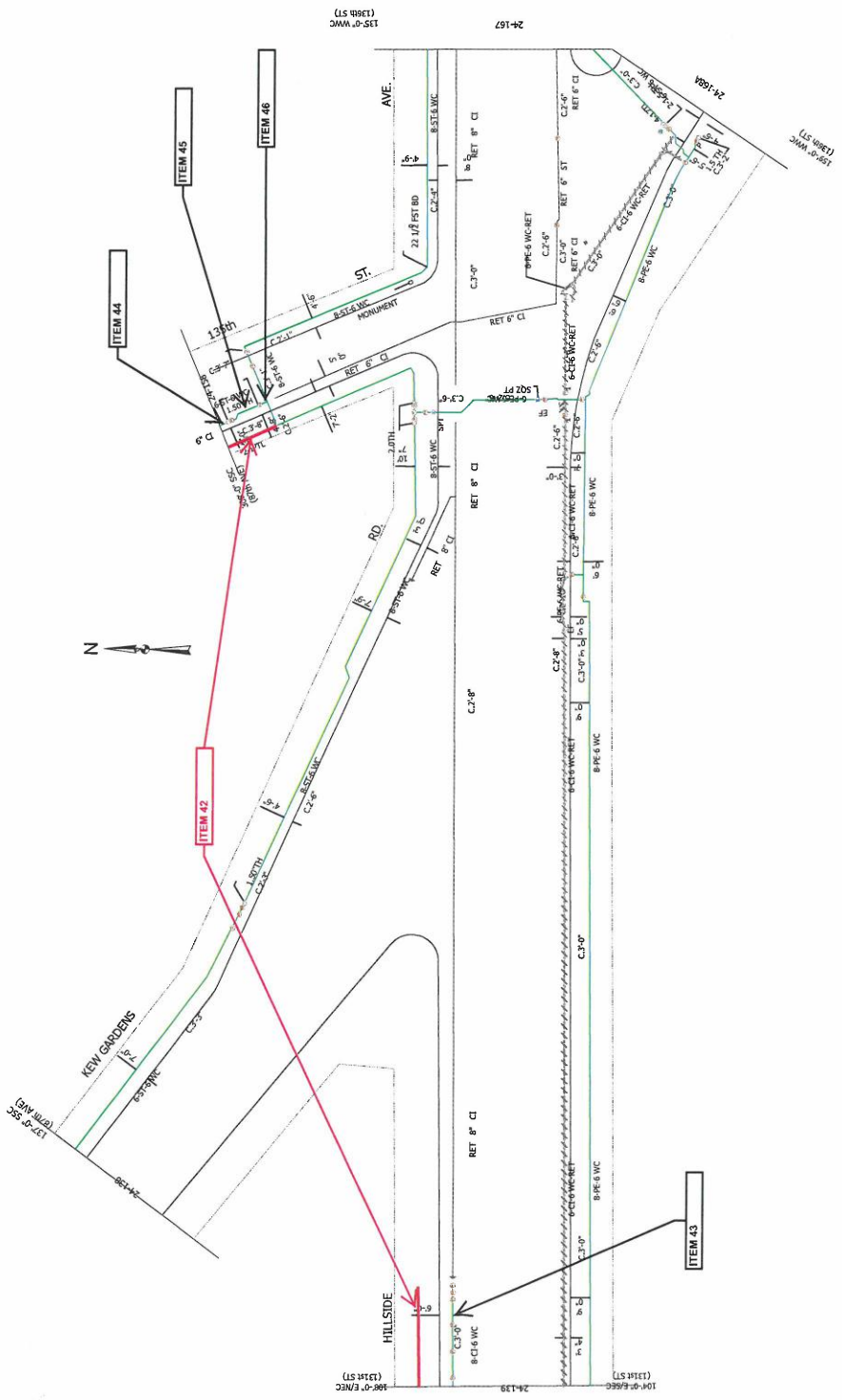
National Grid
QED1059
Sheet 9 of 17

PROJECT ID: QED1059

National Grid
QED1059
Sheet 10 of 17

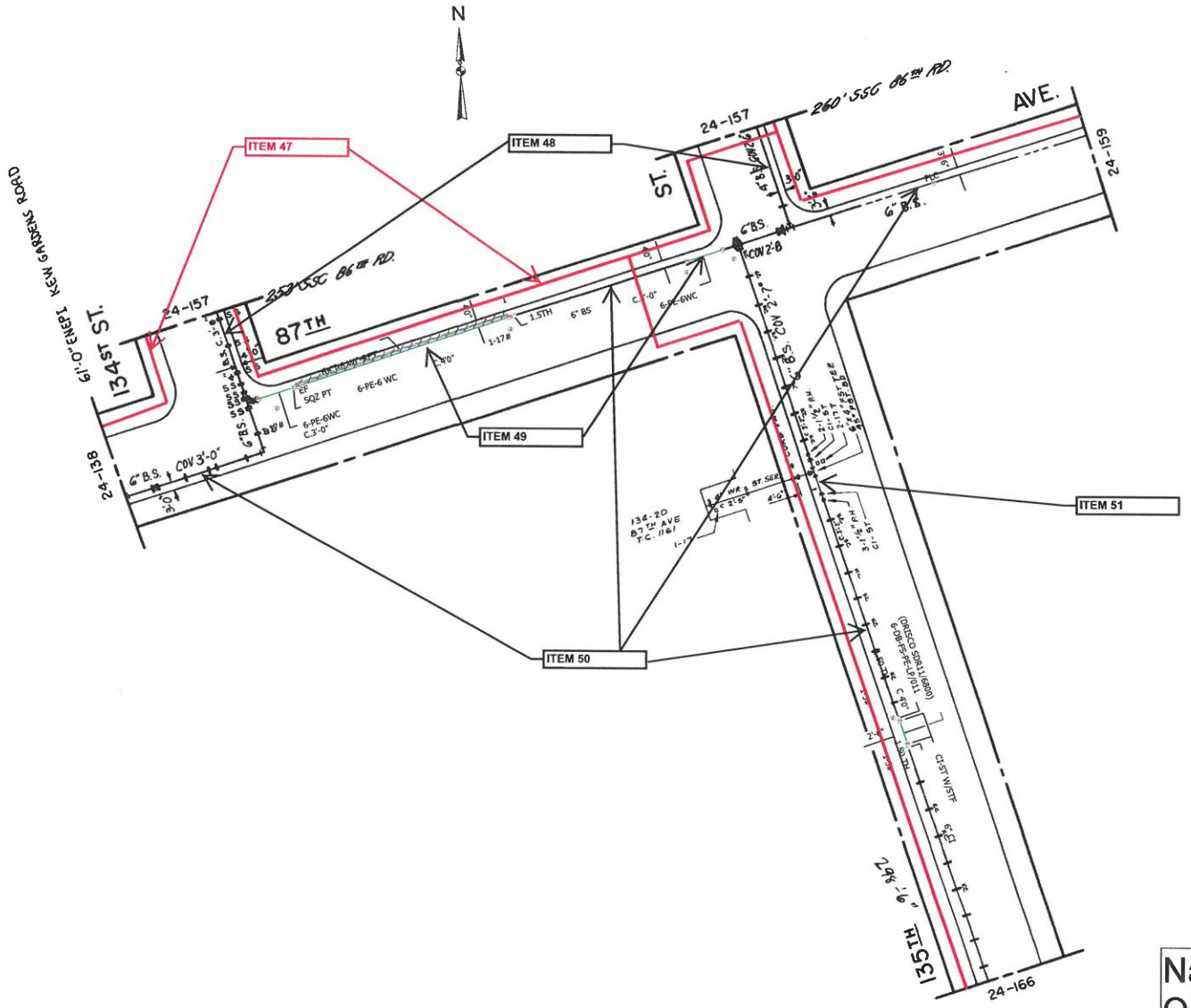


nationalgrid



National Grid
QED1059
Sheet 11 of 17

nationalgrid



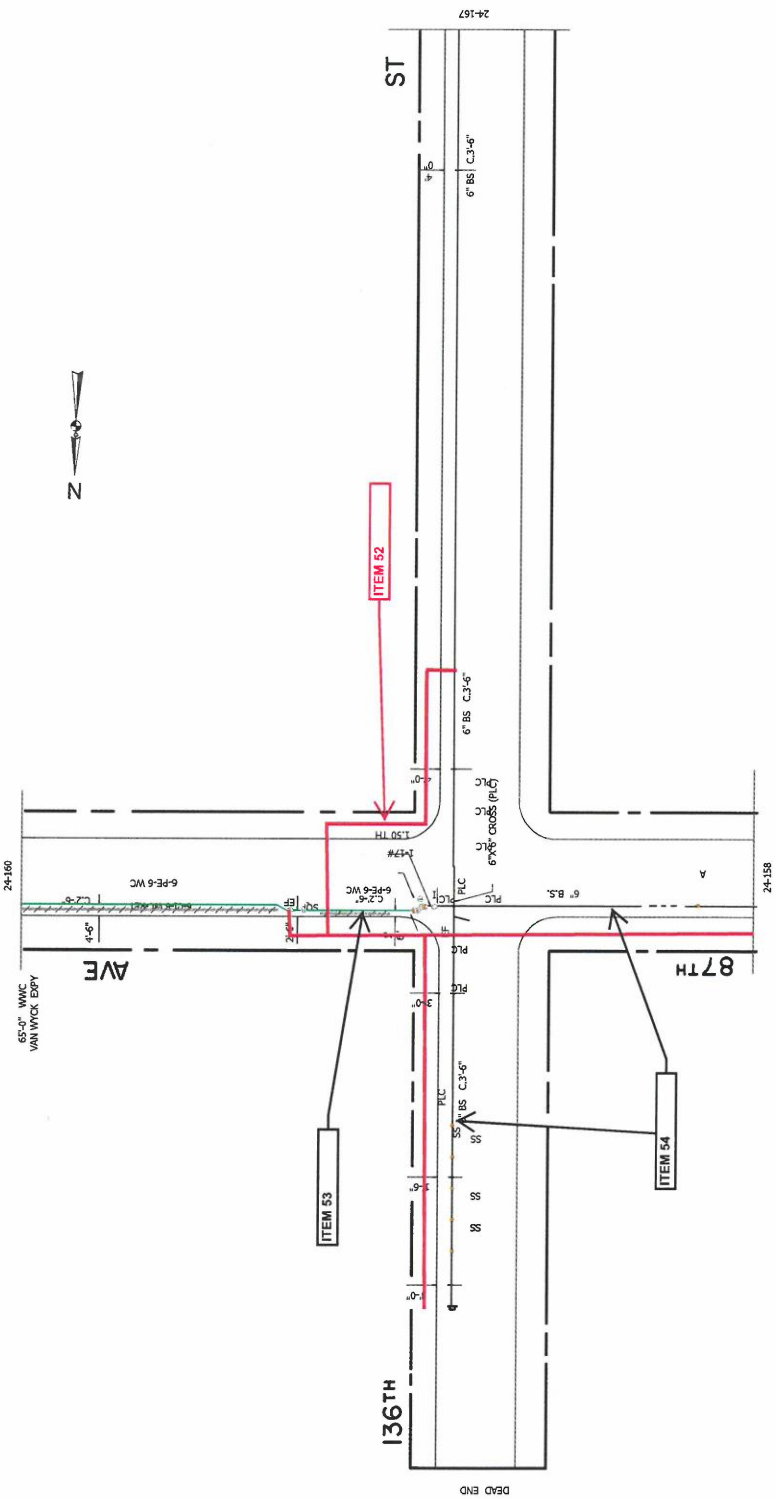
EP7-27A14

nationalgrid

National Grid
QED1059
Sheet 12 of 17

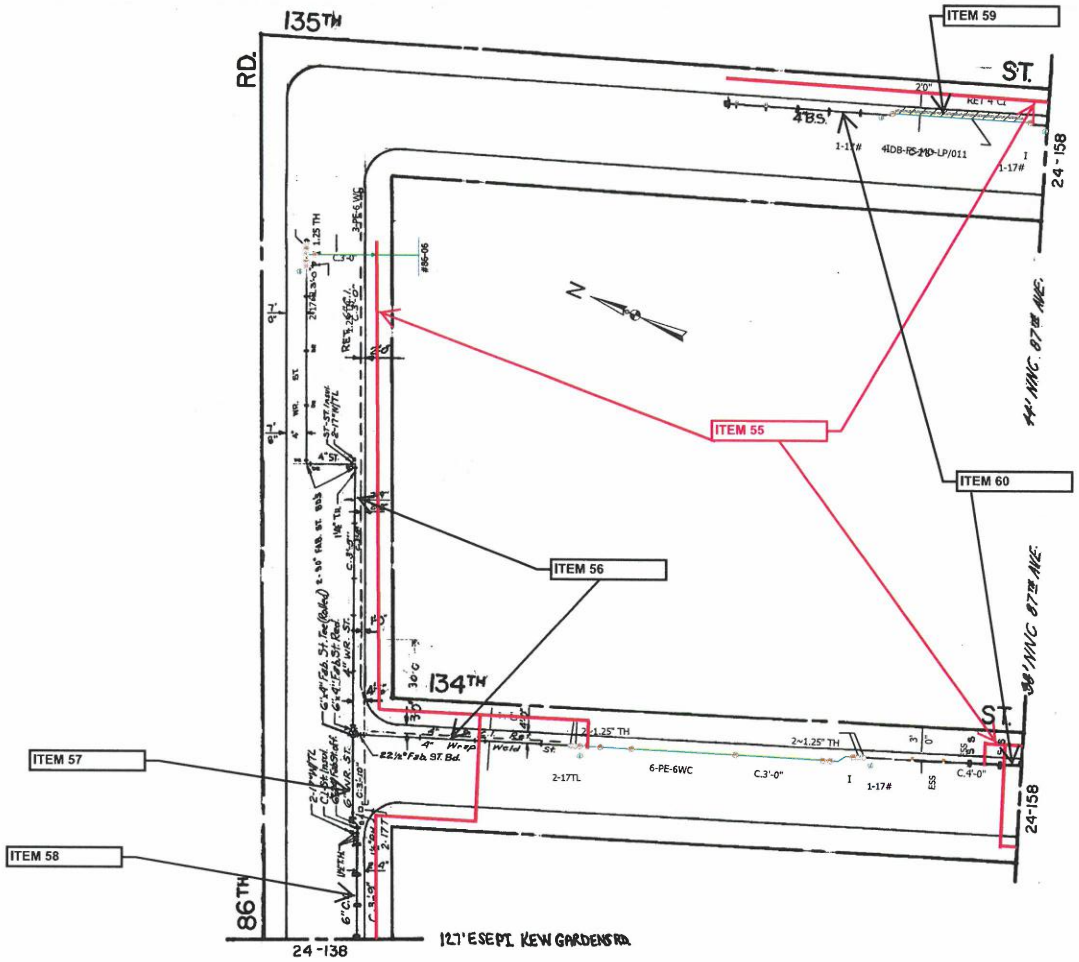
PROJECT ID: QED 1059

National Grid
QED1059
Sheet 13 of 17



nationalgrid

EP7-27A16



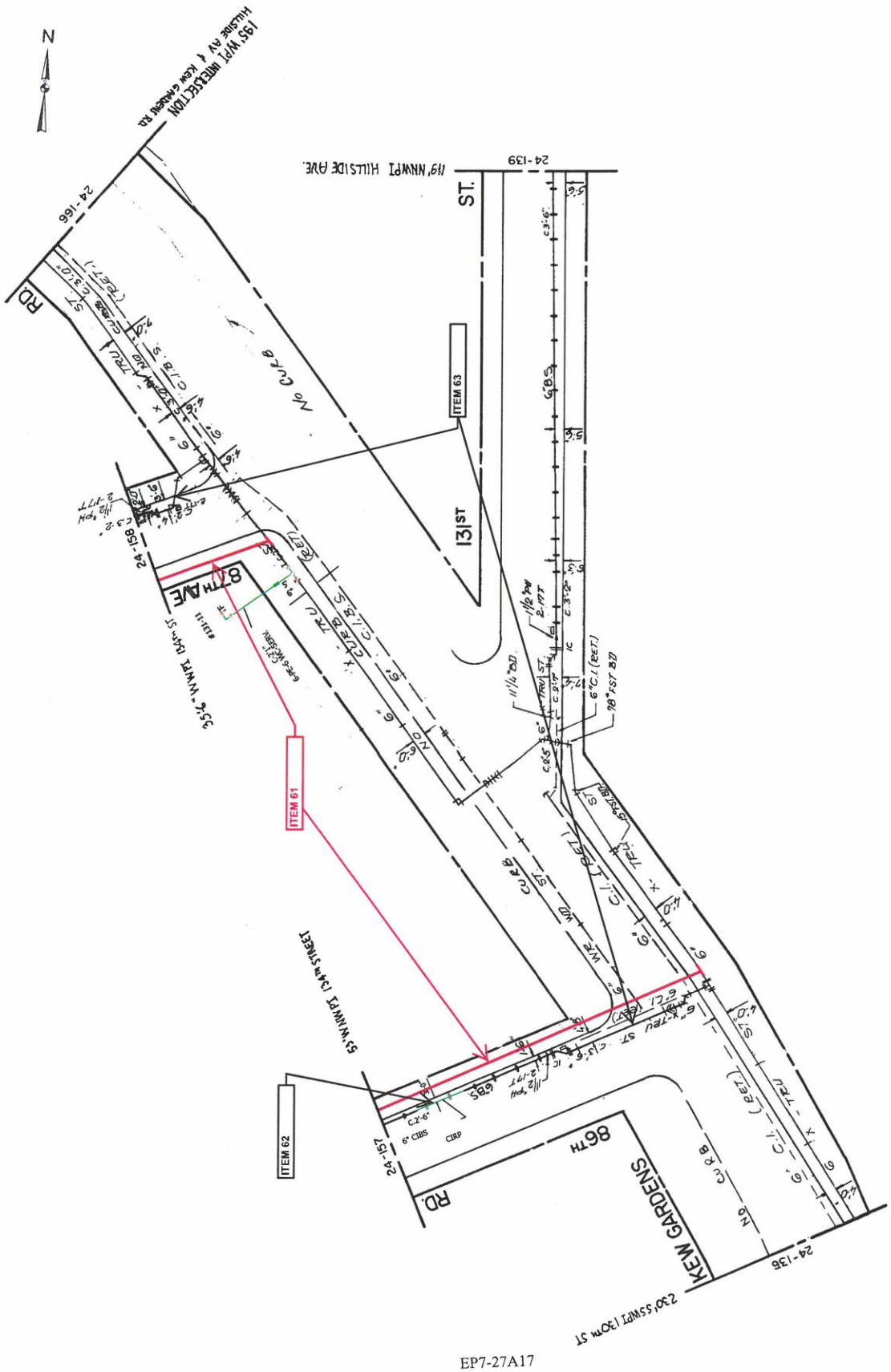
nationalgrid

National Grid
QED1059
Sheet 14 of 17

PROJECT ID: QED 1059

PROJECT ID: QED 1059

National Grid
QED1059
Sheet 15 of 17

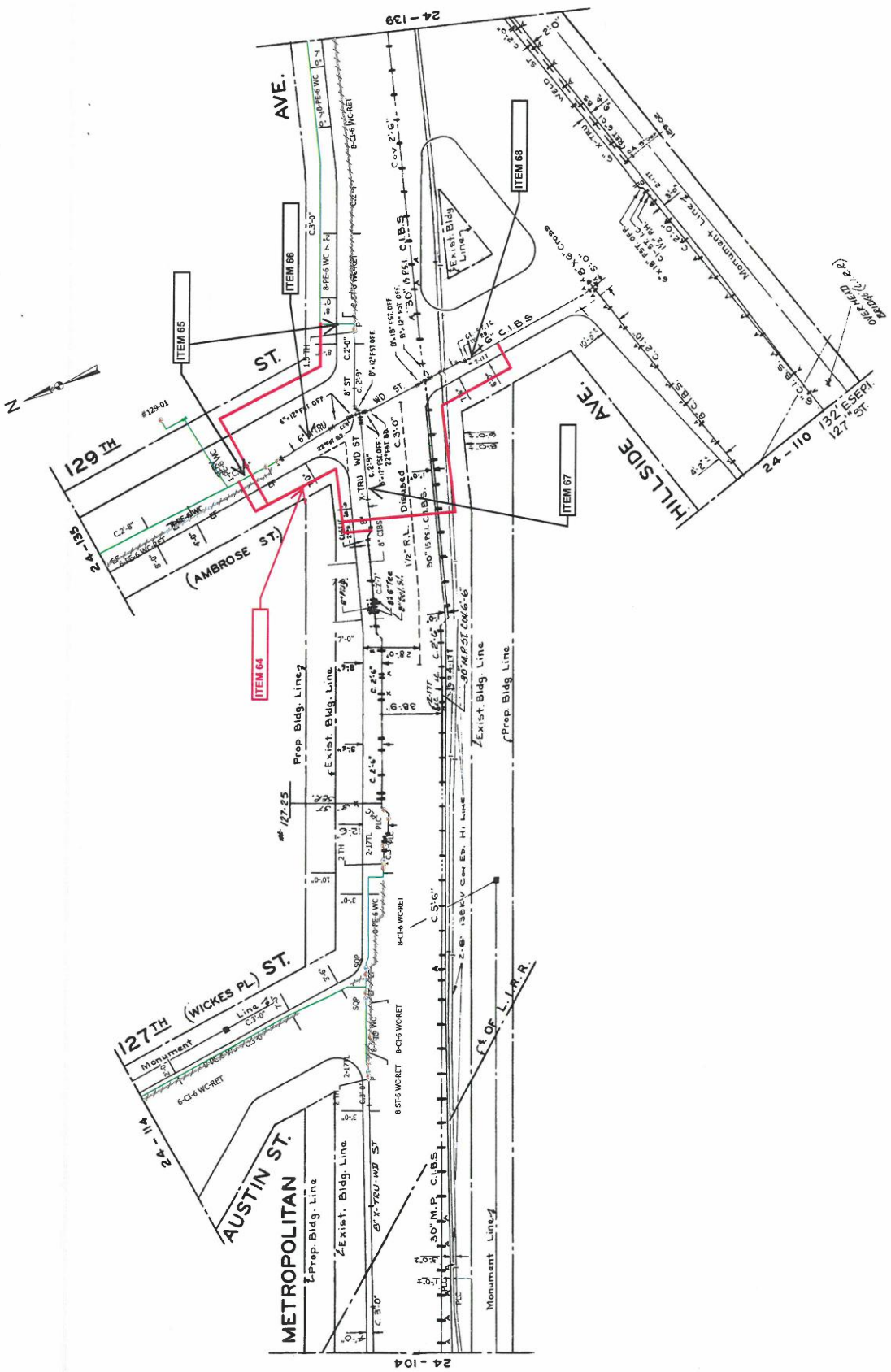


EP7-27A17

nationalgrid

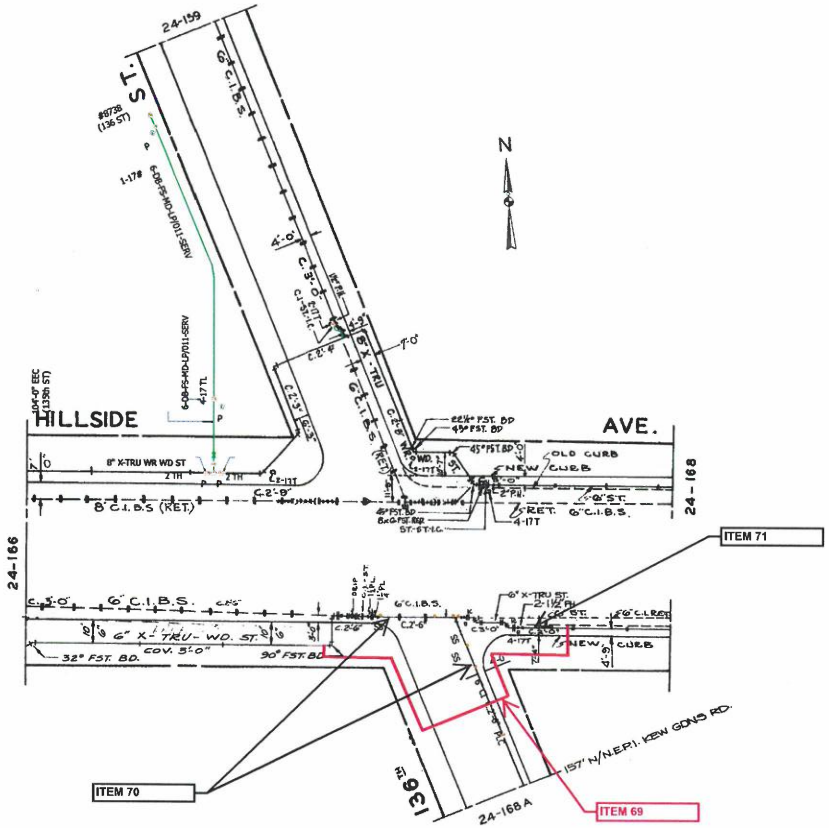
PROJECT ID: QED 1059

National Grid
QED1059
Sheet 16 of 17



EP7-27A18

nationalgrid



EP7-27A19

nationalgrid

National Grid
QED1059
Sheet 17 of 17

PROJECT ID: QED 1059

VI - LISTING OF APPROXIMATE LOCATIONS OF EP-7 BID ITEMS QUANTITIES

(NO TEXT IN THIS AREA, TURN PAGE)

SCOPE OF WORK
SUPPORT AND PROTECTION
FOR CONTRACT NUMBER QED1059

The City of New York Department of Design and Construction is planning to install sewers and/or water mains and all appurtenances in various locations in The City of New York along with all work incidental thereto.

NATIONAL GRID

6.01.9(NG) -Gas Main Crossing Water Main Up To 20" In Diameter (Ea.)

Total: 34

Metropolitan Ave & Hillside Ave	1
129th St between Kew Gardens Rd and Metropolitan Ave	2
87th Ave & Kew Gardens Rd	1
Kew Gardens Rd & 89th Rd	1
136 St between 87th Ave and Hillside Ave	1
135th St between 87th Ave and Hillside Ave	1
89th Rd between Hollis Court Blvd and 212th St	2
89th Rd between 211th St & Hollis Court Blvd	1
89th Ave & 213th St	1
212th St between 89th Ave and 89th Rd	1
Hillside Ave & 212th St	1
Hillside Ave between 212th St and Hollis Court Blvd	1
Hillside Ave between 211th St and Hollis Court Blvd	1
Hillside Ave & 213th St	1
130th St between Kew Gardens Rd and Hillside Ave	2
Hillside Ave between 131st St and Metropoiltan Ave	2
Kew Gardens Rd & 131st St	1
Hillside Ave between 135th St and Kew Gardens Rd	1
136 St between 87th Ave and Deadend	1
87th Ave between 135th St and 134th St	1
Hollis Court Blvd & 89th Rd	1
212th Pl & 89th Ave	2
89th Ave between 212th St and 212th Pl	2
Hollis Court Blvd & 89th Ave	1
Hillside Ave between 212th Pl and 213th St	2
Hillside Ave & Hollis Court Blvd	1
211th St between Hillside Ave and 88th Rd	1

6.03(NG) - Removal of Abandoned Gas Facilities. All Sizes (L.F.)
630 in various

6.03.1(NG)- Removal of Abandoned Gas Facilities with Possible Coal Tar Wrap. All Sizes. (For National Grid work, Only) (L.F.)
910 in Various

6.04(NG) - Adjust Hardware to Grade Using Spacer Rings/Adaptors (Street Repaving) (Ea.)
200 in Various

6.05(NG)- Adjust Hardware to Grade by Resetting (Road Reconstruction) (Ea.)
50 in Various

6.06(NG) - Special Care Excavation & Backfilling (C.Y.)
1028 in Various

6.07(NG) - Test Pits for Gas Facilities (C.Y.)
54 in Various

6.09 (NG) - Trench Excavation and Backfill for Gas Mains and Services. Gas Installed By others (For National Grid Work Only) (C.Y.)
50 in Various

SCOPE OF WORK
SUPPORT AND PROTECTION
FOR CONTRACT NUMBER QED1059

The City of New York Department of Design and Construction is planning to install sewers and/or water mains and all appurtenances in various locations in The City of New York along with all work incidental thereto.

CON Edison

6.01.9(CE) -Gas Main Crossing Water Main Up To 20" In Diameter (Ea.)

20 in Various Locations as Required

6.03(CE) - Removal of Abandoned Gas Facilities. All Sizes (L.F.)

40 in various

6.03.1a (CE)-Removal of Abandoned Gas Facilities with Possible Coal Tar Wrap. All Sizes. (For Con Edison work, Only) (L.F.)

10 in Various

6.04(CE) - Adjust Hardware to Grade Using Spacer Rings/Adaptors (Street Repaving) (Ea.)

15 in Various

6.05(CE) - Adjust Hardware to Grade by Resetting (Road Reconstruction) (Ea.)

15 in Various

6.06(CE) - Special Care Excavation & Backfilling (C.Y.)

500 in Various

6.07(CE) - Test Pits for Gas Facilities (C.Y.)

20 in Various

6.09A(CE) -Trench Excavation and Backfill for Gas Mains and Services. Gas Installed By others (For Con Edison Work Only) (C.Y.)

10 in Various

END OF EP7 PAGES

THE EP7 PAGES CONSIST OF FIFTY-NINE (59) PAGES INCLUDING THIS PAGE

HAZ - PAGES

SUPPLEMENTAL DOCUMENTATION FOR USE WITH SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS

NOTICE

THE PAGES CONTAINED IN THIS SECTION ARE ISSUED FOR THE PURPOSE OF SPECIFYING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND HEREBY MADE PART OF SAID CONTRACT DOCUMENTS.

September 16, 2022

PROJECT ID: QED1059

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC.

BOROUGH OF QUEENS
CITY OF NEW YORK

SUPPLEMENTAL DOCUMENTATION FOR USE WITH SPECIFICATIONS FOR HANDLING, TRANSPORTATION, AND DISPOSAL OF POTENTIAL AND IDENTIFIED CONTAMINATED AND HAZARDOUS MATERIALS

SUPPLEMENTAL DOCUMENTATION FOR USE WITH SPECIFICATIONS FOR HANDLING, TRANSPORTATION, AND DISPOSAL OF POTENTIAL AND IDENTIFIED CONTAMINATED AND HAZARDOUS MATERIALS

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC.

BOROUGH OF QUEENS
CITY OF NEW YORK

Project ID: QED1059

Prepared By:

Department of Design and Construction
30-30 Thomson Avenue
Long Island City, New York 11101

September 16, 2022

These Haz-Pages are to be read in conjunction with the corresponding 8.01 sections of STANDARD HIGHWAY SPECIFICATIONS, May 16, 2022.

Notice to Bidders

DISCLAIMER: NO PHASE I CORRIDOR ASSESSMENT REPORT (CAR) IS PROVIDED. THE CONTRACTOR IS TO ASSUME THE EXCAVATED SOIL IS CONTAMINATED AND BID ON THE QUANTITIES LISTED. THE CONTRACTOR SHALL USE THE CONTRACTORS ENGINEERING JUDGMENT FOR PRICING OF THOSE ITEMS.

ATTACHMENT 1: PHASE II SUBSURFACE CORRIDOR INVESTIGATION

- Final -

Phase II Subsurface Corridor Investigation Reports
for

Replacement of Distribution Water Mains in Various Locations, etc.
Borough of Queens, City of New York

DDC PROJECT NO. QED1059

WORK ORDER NO. OEHS-20201409799-WOL-238

CONTRACT REGISTRATION NO. 20201409799

Prepared for:

Office of Environmental and Geotechnical Services
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

Prepared by:

Louis Berger U.S., Inc.
1 Penn Plaza, 2nd Floor
New York, NY 10119
Tel. (212) 612-7900
Fax (212) 363-4341

PROJECT NO. 31402661.219

September 16, 2022

TABLE OF CONTENTS

Phase II Subsurface Corridor Investigation Reports

Q2021-08 – Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, NY;
Q2017-24 – Hillside Avenue from 211th to 213th Streets, etc., Queens, NY;
Q2020-67D – 35th Avenue from Bell Boulevard to 215th Street, etc., Queens, NY.

1.0 PROJECT OVERVIEW

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger), has prepared three Phase II Subsurface Corridor Investigation (Phase II SCI) Reports for the QED1059 Corridors in the Borough of Queens, New York to reasonably determine the potential for possible environmental contamination posed by properties within or adjacent to the Corridor boundaries. The QED1059 capital improvement project consists of three Corridor segments in various locations throughout Queens, New York.

The proposed infrastructure improvement activities include the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area of each Corridor. Each of the Phase II SCIs summarizes the data collected, reviewed, and analyzed by Louis Berger for the following three Corridor segments:

- Q2021-08 – Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, NY;
- Q2017-24 – Hillside Avenue from 211th to 213th Streets, etc., Queens, NY; and
- Q2020-67D – 35th Avenue from Bell Boulevard to 215th Street, etc., Queens, NY.

- Final -

Phase II Subsurface Corridor Investigation

for

Replacement of Distribution Water Mains in Various Locations, etc. Q2021-08 – Kew Gardens Road from 129th Street to Hillside Avenue, etc., Borough of Queens, City of New York

DDC PROJECT NO. QED1059

WOL No. OEHS-20201409799-WOL-238

CONTRACT REGISTRATION NO. 20201409799

Prepared for:

NYC DDC Department of Design and Construction

Office of Environmental and Hazmat Services
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

Prepared by:

Louis Berger

Louis Berger U.S., Inc.
1 Penn Plaza, 2nd Floor
New York, NY 10119
Tel. (212) 612-7900
Fax (212) 363-4341
PROJECT NO. 31402661.219

September 16, 2022

TABLE OF CONTENTS

EXECUTIVE SUMMARY

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2021-08 Corridor located in the Kew Gardens section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 1.55-mile (8,205-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
Kew Gardens Road from 55 feet northwest of 129th Street to Hillside Avenue	1,750
86th Road from Kew Gardens Road to 135th Street	460
87th Avenue from Kew Gardens Road to 75 feet northeast of 136th Street	760
Metropolitan Avenue from 40 feet northwest of 129th Street to Hillside Avenue	315
Hillside Avenue from Metropolitan Avenue to 25 feet east of 135th Street	1,100
129th Street from Kew Gardens Road to Metropolitan Avenue	1,160
130th Street from Kew Gardens Road to Hillside Avenue	925
131st Street from Kew Gardens Road to Hillside Avenue	475
134th Street from 86th Road to 30 feet southeast of 86th Road	30
134th Street from 87th Avenue to 30 feet northwest of 87th Avenue	30
135th Street from 40 feet northwest of 87th Avenue to Hillside Avenue	500
136th Street from 150 feet northwest of 87th Street to Hillside Avenue	700

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of nine soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

The Phase II SCI of the Q2021-08 Corridor was conducted by Louis Berger on August 8-12, 2022, and consisted of the following components:

- The advancement of nine soil borings (SB01 to SB09) utilizing hand tools and/or Vactron and air knife. Soil borings were proposed to terminal depths of 6 ftbg; however, due to shallow refusals of cobbles in six of the borings (SB01 through SB05, and SB07), and highly compacted soil in one of the borings (SB09), terminal depths ranged from 2 to 6 ftbg.

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to their terminal depths using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the nine soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where recovery allowed, or the 6-inch interval above the encountered refusal or groundwater table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the nine soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above, or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

In order to evaluate subsurface soil quality for waste classification purposes, laboratory analytical results of soil samples were compared with regulatory standards identified in: New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Commercial Use (Track 2) Soil Cleanup Objectives (SCOs), Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings and conclusions are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the nine soil borings, including PID readings;

- During the advancement of soil borings for this Phase II SCI, fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to grayish brown gravelly sand, sand, and silty sand to sandy silt with cobbles were observed in all nine borings. Anthropogenic fill, including ash, was observed in SB06. Silty clay was also observed in SB09;

- Bedrock was not encountered in any of the nine boring locations;

- Groundwater was not encountered in any of the nine boring locations;

- Two VOCs were detected above the laboratory's reporting limits in seven of the nine soil samples collected as part of this Phase II SCI; however, all concentrations were below the applicable regulatory standards;

- Several PAHs were detected above the laboratory's reporting limits in seven of the nine soil samples collected as part of this Phase II SCI; however, only one PAH, benzo[a]pyrene, exhibited a concentration above the applicable regulatory standard in one soil sample (SB06); Benzo[a]pyrene was detected above the Commercial Use (Track 2) SCO of 1 part per million (ppm) at a concentration of 1.3 ppm in SB06;

- One PCB was detected above the laboratory's reporting limits in one of the nine soil samples collected as part of this Phase II SCI; however, the concentration was below the applicable regulatory standard;

- Waste classification laboratory results indicate that TCLP barium was detected in all nine soil samples, TCLP cadmium was detected in three of the nine soil samples, TCLP chromium was detected in six of the nine soil samples, and TCLP lead was detected in five of the nine soil sample; however, all concentrations were below the applicable RCRA Hazardous Waste Levels;

- The analytical laboratory results of the nine waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards. Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity; and,

- TPH-DRO was detected above the laboratory's reporting limits in all nine waste classification soil samples at concentrations ranging from 5.9 milligrams per kilogram (mg/kg) (SB02) to 139 mg/kg (SB09). TPH-GRO was detected above the laboratory's reporting limits in all nine waste classification soil samples with concentrations ranging from 0.010 J mg/kg (SB02) to 2.030 J mg/kg (SB06). No regulatory standards exist for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;
- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e.,

VOCs, PCBs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

1.0 INTRODUCTION

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2021-08 Corridor located in the Kew Gardens section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 1.55-mile (8,205-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
Kew Gardens Road from 55 feet northwest of 129th Street to Hillside Avenue	1,750
86th Road from Kew Gardens Road to 135th Street	460
87th Ave from Kew Gardens Road to 75 feet northeast of 136th Street	760
Metropolitan Avenue from 40 feet northwest of 129th Street to Hillside Avenue	315
Hillside Avenue from Metropolitan Avenue to 25 feet east of 135th Street	1,100
129th Street from Kew Gardens Road to Metropolitan Avenue	1,160
130th Street from Kew Gardens Road to Hillside Avenue	925
131st Street from Kew Gardens Road to Hillside Avenue	475
134th Street from 86th Road to 30 feet southeast of 86th Road	30
134th Street from 87th Avenue to 30 feet northwest of 87th Avenue	30
135th Street from 40 feet northwest of 87th Avenue to Hillside Avenue	500
136th Street from 150 feet northwest of 87th Street to Hillside Avenue	700

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of nine soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

1.1 Summary of Previous Environmental Investigations

No prior reports for the Corridor were made available to Louis Berger for review.

1.2 Scope of Work

The Phase II SCI consisted of a field investigation, laboratory analyses, and the preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution. Hand-clearing activities were performed by PAL Environmental Services (PAL). Soil boring oversight and soil sample collection were conducted by Mr. Christopher Calandrillo, Project Scientist of Louis Berger. Laboratory analyses were provided by Chemtech Consulting Group Inc. (Chemtech) of Mountainside, New Jersey, which is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11376). Field-derived Quality Assurance/Quality Control (QA/QC) samples (i.e., blind duplicates, equipment/rinsate blanks, and trip blanks) were not collected for this project.

The field investigation was conducted on August 8-12, 2022, and consisted of the following components:

- The advancement of nine soil borings (SB01 to SB09) utilizing hand tools and/or Vactron and air knife. Soil borings were proposed to terminal depths of 6 ftbg. However, due to refusals of cobbles in 6 of the borings (SB01 through SB05, and SB07), and dense material in one of the borings (SB09), soil borings were advanced to terminal depths ranging from 2 to 6 ftbg;

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to 6 ftbg or until refusal, whichever came first, using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the nine soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where

recovery allowed, or the 6-inch interval above the encountered refusal or groundwater table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the nine soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above, or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

2.0 CORRIDOR INFORMATION

2.1 Corridor Location, Description and Use

The approximately 1.55-mile (8,205-foot) long Corridor is located in the Kew Gardens section of the Borough of Queens, New York. Currently, the Q2021-08 Corridor is developed with paved roadways, sidewalk areas, and existing infrastructure systems, and exhibits evidence of utilities, such as manholes, pavement scars, utility mark-outs, and valve covers. This indicates the presence of buried utilities, including gas, sewer, water, electric, and communications. Adjoining property usage is primarily residential and commercial.

The area of the Corridor is shown on Figure 2.

2.2 Description of Surrounding Properties

Surrounding property usage is primarily residential properties with some institutional properties to the north, east and west, and a mixture of commercial and residential properties to the south along Hillside Avenue. Maple Grove Cemetery is located north of the Corridor. The Metropolitan Transportation Authority (MTA) Long Island Railroad (LIRR) Jamaica Branch runs approximately 0.14 miles (765 feet) west of the Corridor. The nearest surface water body is an unnamed pond within Maple Grove Cemetery, located approximately 0.1 miles (475 feet) north of the Corridor.

2.3 Corridor and Regional Topographic Setting

Louis Berger reviewed the United States Geologic Survey (USGS) *7.5-minute Topographic Quadrangle Maps for Jamaica, New York* (2020) to determine topography at the Corridor. The Corridor exhibits a topographic elevation change of approximately 18 feet above mean sea level (msl). The elevation of the Corridor ranges from approximately 82 feet above msl on the northern portion of the Corridor near the intersection of 129th Street and Kew Gardens Road, to approximately 64 feet above msl at the southern portion of the Corridor near the intersection of 130th Street and Hillside Avenue. The overall topography of the surrounding area around the Corridor slopes from the north to the south. Under natural conditions, surface runoff would be expected to follow the overall topography of the area and ultimately flow to the south; however, storm runoff within the Corridor is managed by storm drains.

2.4 Corridor and Regional Geology

Based on the *NYC Detailed Soil Survey* via Web Soil Survey (National Cooperative Soil Survey, Version 8, September 3, 2018), the majority of the Corridor is underlain by the Urban land-Flatbush complex (UFA), with portions of the Corridor underlain by the Urban land-Greenbelt complex (UGBI), and the Urban land till substratum (UtA). The UFA complex is comprised of 75 percent urban land, outwash substratum, 12 percent Flatbush and similar soils, and 13 percent minor components, with slopes of 0 to 3 percent. The UGBI complex is comprised of 60 percent Urban land, till substratum, 25 percent Greenbelt and similar soils, and 15 percent minor components, with slopes of 3 to 8 percent. The UtA complex is comprised of 92 percent urban land till substratum and 8 percent minor components, with slopes of 0 to 3 percent. Hydric soils are not present in any of the units, and the units are not considered prime farmland.

The *NYC Reconnaissance Soil Survey* (2005) indicates that the Corridor is underlain by the Pavement & Buildings-Foresthills-Montauk complex, 0 to 8 percent slopes. This complex is classified as nearly level to gently sloping, highly urbanized areas with more than 80 percent of the surface covered by impervious pavement and buildings, over glacial outwash; generally located in urban centers.

The *Ground-Water Resources of Kings and Queens Counties, Long Island, New York* (1999) and the *Quaternary Geologic Map of the Hudson River 4° x 6° Quadrangle, United States and Canada* (1992) indicate the surficial soils are underlain by Upper Pleistocene deposits consisting of outwash sand, gravel and silt to a depth of approximately 400 ftbg. The Upper Pleistocene deposits are, in turn, underlain by approximately 150 feet of the Lloyd Sand (400 to 550 ftbg). The Lloyd Sand is the final unconsolidated unit before bedrock and consists of fine to coarse quartz sand. These deposits are, in turn, underlain by crystalline metamorphic bedrock, expected to be encountered at approximately 550 ftbg.

During the advancement of soil borings for this Phase II SCI, fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to grayish brown gravelly sand, sand, and silty sand to sandy silt with cobbles were observed in all nine borings. Anthropogenic fill, including ash, coal, asphalt, and glass was observed in SB06. Silty clay was also observed in SB09.

2.5 Corridor and Regional Hydrogeology

According to the USGS *Long Island Depth to Water Viewer* (2013), groundwater depth is estimated to be between 44 and 62 ftbg along the Corridor, with the shallower groundwater depth at the southwestern portion along Hillside Avenue. Groundwater was not encountered during the Phase II SCI field activities. The nearest surface water body is an unnamed pond within Maple Grove Cemetery, located approximately 0.1 miles (475 feet) northwest of the Corridor. Based on the USGS *Groundwater Conditions on Long Island Map Viewer* (2013), groundwater in the vicinity of the Corridor is expected to flow to the southwest toward Jamaica Bay, located approximately 3.8 miles (20,065 feet) south of the Corridor. All references to groundwater flow direction/hydraulic gradient in this report are based upon this assumption. Groundwater flow can also be influenced by seasonal fluctuations in precipitation, local variations in geology, underground anthropogenic structures, and/or local dewatering operations.

According to the U.S. Fish and Wildlife Service (USFWS) *National Wetlands Inventory*, no wetlands are located along the Corridor; however, Flushing Meadows Corona Park to the northwest of the Corridor contains wetlands, including Freshwater Emergent Wetlands (PEM1A and PEM1C). Freshwater Emergent Wetlands (PEM1A and PEM1C) are classified as Palustrine habitats and are located approximately 0.90 miles (4,770 feet) to the northwest. The Freshwater Emergent Wetlands are part of the Palustrine System, which encompasses three forms of wetlands. The first are non-tidal wetlands dominated by trees, shrubs, and persistent emergent which normally remain standing at least until the beginning of the next growing season. Wetlands which occur in tidal areas where the salinity measures less than 0.5 parts per thousand (ppt) are also considered part of the Palustrine System. Lastly, wetlands characterized by the following are also part of the Palustrine System: less than 20 acres in size, no active wave-formed or bedrock shoreline features, have maximum depths less than 8.2 feet at low water, and salinity measuring less than 0.5 ppt. Freshwater Emergent Wetlands are seasonally flooded, with surface water present for extended periods early in the growing season, but is absent by the end of the growing season in most years.

According to the Federal Emergency Management Agency (FEMA) *Flood Insurance Rate Map* (FIRM) *Panel 3604970229F* (FEMA, 2007), the Corridor is not located within the 100-year (1% chance of flood) or 500-year (0.2% chance of flood) flood zones.

3.0 CORRIDOR EVALUATION

Louis Berger provided oversight for the advancement of nine soil borings and collected soil samples during the field investigation conducted on August 8-12, 2022, in the vicinity of the planned construction. Drilling services for the advancement of the soil borings were provided by PAL. The soil samples from the borings were transferred into laboratory-supplied sample jars and properly labeled. The samples were stored with ice in a cooler to preserve the samples at approximately 4 degrees Celsius prior to and during shipment. A chain-of-custody was prepared prior to sample shipment. A summary of the field observations and details of the soil borings are provided in Table 1.

3.1 Soil Quality Investigation

To ensure the clearance of sensitive subsurface utilities and features, all soil boring locations were advanced via evasive methods (i.e., Vactron and/or air knife and hand auger/hand tools) to terminal depths ranging from 2 ftbg of 6 ftbg. Refusal was encountered at boring locations SB01 through SB05, and SB07 due to cobbles, and at SB09 due to highly compacted soil. Soil boring locations are depicted on Figure 2. The designations and sampling intervals for the samples that were submitted to the laboratory are included in Table 1. Maps depicting each boring location are included in Appendix A. Boring logs, which document soil classification information, including stratigraphy, are provided in Appendix B. The location of each boring is described below:

- **SB01** – Located in the grass right-of-way on the southwestern side of Kew Gardens Road between 129th and 130th Streets, 38 feet 9 inches southwest of the northeastern curb line of Kew Gardens Road, 152 feet northwest of the western curb line of 130th Street.

- **SB02 –** Located in the grass right-of-way on the eastern side of 129th Street between Kew Gardens Road and Metropolitan Avenue, 33 feet 6 inches east of the western curb line of 129th Street, 153 feet and 8 inches south of the southern curb line of Kew Gardens Road.

- **SB03 –** Located in the grass right-of-way on the western side of 130th Street between Kew Gardens Road and Hillside Avenue, 33 feet 7 inches west of the eastern curb line of 130th Street, 234 feet north of the northern curb line of Hillside Avenue.

- **SB04 –** Located in the grass right-of-way on the northern side of Metropolitan Avenue between 129th and 130th Streets, 78 feet 8 inches northwest of the western curb line of 130th Street, 45 feet 6 inches north of the triangle separating Metropolitan avenue and Hillside Avenue.

- **SB05 –** Located in the grass right-of-way on the eastern side of 131st Street, between Kew Gardens Road and Hillside Avenue, 32 feet 7 inches east of the western curb line of 131st Street, 152 feet 6 inches north of the northern curb line of Hillside Avenue.

- **SB06 –** Located in the grass right-of-way on the southeastern side of 86th Road between 134th and 135th Streets, 106 feet 7 inches southwest of the southwestern curb line of 135th Street, 29 feet 6 inches southeast of the northwestern curb line of 86th Road.

- **SB07 –** Located in the grass right-of-way on the northwestern side of 87th Avenue between 135th and 136th Streets, 30 feet 10 inches northwest of the southeastern curb line of 87th Avenue, 17 feet northeast of the northeastern curb line of 135th Street.

- **SB08 –** Located in the sidewalk right-of-way on the southern side of Hillside Avenue between Kew Gardens Road and Metropolitan Avenue, 160 feet west of the southwestern curb line of Kew Gardens Road, 69 feet 7 inches south of the southern curb line of the triangle separating Hillside Avenue and Kew Gardens Road.

- **SB09 –** Located in the grass right-of-way on the northeastern side of 136th Street between 87th and Hillside Avenues, 31 feet and 9 inches northeast of the southwestern curb line of 136th Street, 158 feet northwest of the northern curb line of Hillside Avenue.

Soil from each boring was examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e., odors) of contamination. In addition, a PID was used to screen the soil for VOC vapors at all nine boring locations.

In order to identify representative conditions relative to the presence of PAHs, TCLP metals, PCBs, total petroleum hydrocarbons, RCRA characteristics, and conditions relative to waste disposal in each boring, composite soil samples were collected at each boring location. Based on the DDC protocol regarding soil sample collection for waste classification analysis, composite soil samples were collected from ground surface to the encountered refusal. Composite soil samples were collected by mixing the soil from the column in a decontaminated stainless steel bowl.

In order to identify representative conditions relative to the presence of VOCs, grab samples were to be collected from either the 6-inch interval above the groundwater table (when encountered), the 6-inch interval above the bottom of the proposed excavation (where recovery allowed), or from the 6-inch interval showing the highest potential for contamination based on field observations.

All equipment was decontaminated by rinsing with deionized water, scrubbing with Alconox®, and then rinsed with deionized water a second time between each sample location to prevent any cross-contamination. Following the completion of each boring, the boreholes were backfilled with removed material.

3.2 Laboratory Analyses

All soil samples were analyzed on a 5-day turn-around time (TAT). Soil samples were submitted to Chemtech of Mountainside, New Jersey which is a NYSDOH ELAP-certified analytical laboratory (No. 11376). Field-derived QA/QC samples were not collected for this project. Laboratory analytical reports are included in Appendix C.

The grab soil samples SB01 through SB09 were analyzed for TCL VOCs using USEPA Method 8260C. The composite soil samples were analyzed for PAHs by USEPA Method 8270C, TPH-DRO/GRO by USEPA Method 8015B, PCBs by USEPA Method 8082A/608, TCLP Metals (RCRA 8) by USEPA Method 1311/6010D, RCRA Characteristics, including ignitability, reactivity and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, respectively, as well as Paint Filter Test by USEPA Method 9095B, for waste classification purposes. The USEPA methods described above, or an updated version of the method were used to analyze each sample.

3.3 Data Evaluation

In order to evaluate surface and subsurface soil quality for waste classification purposes, laboratory analytical results of grab and composite soil samples were compared with regulatory standards identified in: NYSDEC Subpart 375-6: Remedial Program Commercial Use (Track 2) Soil Cleanup Objectives (SCOs) and Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

4.0 FINDINGS

This section discusses the analytical data and findings for activities discussed in Section 3.0. Boring logs can be found in Appendix B. A complete laboratory analytical data report is included in Appendix C.

4.1 Field Screening

No visual or olfactory indications of contamination were observed in any of the nine borings, including PID readings. Anthropogenic fill material, including ash, asphalt, coal, and glass, was observed in SB06. A summary of the environmental boring data is presented in Table 1.

4.2 Laboratory Analytical Results

4.2.1 Target Compound List (TCL) Volatile Organic Compounds (VOCs) in Soils

VOCs, including acetone and methylene chloride, were detected above the laboratory's reporting limits in all soil samples except SB03 and SB08; however, all concentrations were below the applicable regulatory standards. A summary of the VOC detections in soil is provided as Table 2.

4.2.2 Polycyclic Aromatic Hydrocarbons (PAHs) in Soils

Several PAHs were detected above the laboratory's reporting limits in seven of the nine soil samples (SB01, SB03 through SB07, SB09); however, only one soil sample (SB06) exhibited a concentration above the applicable regulatory standard.

The following exceedance of the regulatory standard was found during the Phase II SCI:

Soil Sample SB06:

- Benzo[a]pyrene was detected above the Commercial Use (Track 2) SCO of 1 part per million (ppm) at a concentration of 1.3 ppm.

A summary of the PAH detections in soil is provided as Table 3.

4.2.3 Polychlorinated Biphenyls (PCBs) in Soils

One PCB, Aroclor-1260, was detected above the laboratory's reporting limits in one soil sample (SB09); however, the concentration was below the applicable regulatory standard. A summary of the PCB detections in soil is provided as Table 4.

4.2.4 Waste Classification of Soil

TCLP Metals

Waste classification laboratory results indicated that TCLP barium was detected in all nine waste classification samples at concentrations ranging from 1.21 milligrams per liter (mg/L) (SB03) to 1.72 mg/L (SB01). TCLP cadmium was detected in three of the nine waste classification samples at concentrations ranging from 0.00346 J mg/L (SB03) to 0.00442 J mg/L (SB04). TCLP chromium was detected in six of the nine waste classification samples with concentrations ranging from 0.0110 J mg/L (SB06) to 0.0351 J (SB02). TCLP lead was detected in five of the nine waste classification samples with concentrations ranging from 0.0219 J mg/L (SB07) to 0.139 mg/L (SB06). All detected concentrations were below RCRA Hazardous Waste Levels. Results of the TCLP metals analysis indicate that soil samples collected from the Corridor do not exhibit evidence of the Hazardous Waste characteristics for Toxicity. A summary of the waste classification parameters is provided as Table 5.

RCRA Parameters (Reactivity, Corrosivity, Ignitability)

The analytical laboratory results of the nine waste classification soil samples show that the RCRA parameters (reactivity, ignitability, or corrosivity) were within the RCRA standards. The pH (corrosivity indicator) of the samples was found to be within the RCRA limits of 2 and 12.5. The flash point was greater than 140 degrees Fahrenheit in all soil samples; therefore, the RCRA characteristics for ignitability were negative. Reactive cyanide and reactive sulfide were not detected in any of the nine soil samples.

Therefore, results of these analyses indicate that the waste classification soil samples collected do not exhibit evidence of hazardous waste characteristics with respect to reactivity, corrosivity and ignitability. A summary of the waste classification parameters is provided as Table 5.

Total Petroleum Hydrocarbons (TPH)

TPH-DRO was detected above the laboratory's reporting limits in all nine waste classification soil samples at concentrations ranging from 5.9 milligrams per kilogram (mg/kg) (SB02) to 139 mg/kg (SB09). TPH-GRO was detected above the laboratory's reporting limits in all nine waste

classification soil samples with concentrations ranging from 0.010 J mg/kg (SB02) to 2.030 J mg/kg (SB06). No regulatory standards exist for TPH. A summary of the waste classification parameters is provided as Table 5.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings, conclusions, and recommendations are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the nine soil borings, including PID readings;

- Fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to grayish brown gravelly sand, sand, and silty sand to sandy silt with cobbles were observed in all nine borings. Anthropogenic fill, including ash, was observed in SB06. Silty clay was also observed in SB09;

- Refusal was encountered at depths ranging from 2 ftbg (SB03) to 5 ftbg (SB01, SB02, SB07, and SB09). Refusal was encountered at a depth of 2 ftbg at SB03 due to the presence of cobbles, at 3 ftbg at SB05 due to cobbles, at 4.5 ftbg at SB04 due to cobbles, and 5 ftbg at SB01, SB02, SB07, and SB09 due to cobbles and highly compacted soil;

- Bedrock was not encountered in any of the nine boring locations;

- Groundwater was not encountered in any of the nine boring locations;

- Two VOCs were detected above the laboratory's reporting limits in seven of the nine soil samples collected as part of this Phase II SCI; however, all concentrations were below the applicable regulatory standards;

- Several PAHs were detected above the laboratory's reporting limits in seven of the nine soil samples collected as part of this Phase II SCI; however, only one PAH, benzo[a]pyrene, exhibited a concentration above the applicable regulatory standard in one soil sample (SB06). Benzo[a]pyrene was detected above the Commercial Use (Track 2) SCO of 1 ppm at a concentration of 1.3 ppm in SB06;

- One PCB was detected above the laboratory's reporting limits in one of the nine soil samples collected as part of this Phase II SCI; however, the concentration was below the applicable regulatory standard;

- Waste classification laboratory results indicate that TCLP barium was detected in all nine soil samples. TCLP cadmium was detected in three of the nine soil samples. TCLP chromium was detected in six of the nine soil samples, TCLP lead was detected in five of the nine soil samples; however, all concentrations were below the applicable RCRA Hazardous Waste Levels;

- The analytical laboratory results of the nine waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards. Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity; and,

- TPH-DRO was detected above the laboratory's reporting limits in all nine waste classification soil samples at concentrations ranging from 5.9 mg/kg (SB02) to 139 mg/kg (SB09). TPH-GRO was detected above the laboratory's reporting limits in all nine waste classification soil samples with concentrations ranging from 0.010 J mg/kg (SB02) to 2.030 J mg/kg (SB06). No regulatory standards exist for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e.,

VOCs, PCBs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

6.0 STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

Report Prepared By:

Chris Calandrillo
Project Scientist

Fameeda Ali, CHMM, ENV SP
Project Manager

STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

Louis Berger derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, Louis Berger has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, Louis Berger has not attempted to verify the accuracy or completeness of any such information.

The data reported, and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by Louis Berger in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the Agreement and the provisions thereof.

TABLES

Table 1. Summary of Environmental Boring Data
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2021-08 Corridor
Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, New York

Boring No.	Sample ID	High PID (ppm)	Sample Interval (ftbg)	Total VOCs (mg/kg)	Total PAHs (mg/kg)	TCLP Metals Exceed (Yes/No)[1]	Depth to Water (ftbg)	Total Depth (ftbg)	Other Comments
SB01	SB01	<1	4.5 - 5.0	0.0787 J	-	No	NE	5.0	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 5 ftbg.
			0.0 - 5.0	-	0.6253 J				
SB02	SB02	<1	4.5 - 5.0	0.076	-	No	NE	5.0	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 5 ftbg.
			0.0 - 5.0	-	ND				
SB03	SB03	<1	1.5 - 2.0	ND	-	No	NE	2.0	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 2 ftbg.
			0.3 - 2.0	-	0.37 J				
SB04	SB04	<1	4.0 - 4.5	0.11	-	No	NE	4.5	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 4.5 ftbg.
			0.0 - 4.5	-	0.273 J				
SB05	SB05	<1	2.5 - 3.0	0.0582	-	No	NE	3.0	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 3 ftbg.
			0.0 - 3.0	-	0.3818 J				
SB06	SB06	<1	5.5 - 6.0	0.3715 J	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material, including ash, was observed.
			0.0 - 6.0	-	10.52 J				
SB07	SB07	<1	4.5 - 5.0	0.0601 J	-	No	NE	5.0	No visual or olfactory signs of contamination observed. Fill material was observed. Cobbles refusal at 5 ftbg.
			0.0 - 5.0	-	0.3264 J				
SB08	SB08	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.3 - 6.0	-	ND				
SB09	SB09	<1	4.5 - 5.0	0.0907 J	-	No	NE	5.0	No visual or olfactory signs of contamination observed. Fill material was observed. Highly compacted soil refusal at 5 ftbg.
			0.0 - 5.0	-	1.2 J				

Notes:
[1] - TCLP metal(s) exceeds Resource Conservation and Recovery Act (RCRA) Hazardous Waste
All soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Toxicity Characteristic Leaching Procedure (TCLP) for Metals (RCRA 8), Total Petroleum Hydrocarbons, and RCRA Characteristics.
N/A = Not applicable
PID = Photoionization detector
ND = Not Detected
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).
NE = Not Encountered
ftbg = feet below grade

Table 2. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2021-08 Corridor
Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, New York

TCL VOCs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth								
		SB01	SB02	SB03	SB04	SB05	SB06	SB07	SB08	SB09
		8/9/2022	8/8/2022	8/8/2022	8/9/2022	8/8/2022	8/9/2022	8/9/2022	8/12/2022	8/9/2022
		4.5 - 5.0	4.5 - 5.0	1.5 - 2.0	4.0 - 4.5	2.5 - 3.0	5.5 - 6.0	4.5 - 5.0	5.5 - 6.0	4.5 - 5.0
Acetone	500	0.0708	0.076	ND	0.11	0.0582	0.36	0.0529	ND	0.0837
Methylene Chloride	500	0.0079 J	ND	ND	ND	ND	0.0115 J	0.0072 J	ND	0.007 J

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

Table 3. Summary of Polycyclic Aromatic Hydrocarbons (PAHs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2021-08 Corridor
Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, New York

PAHs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth								
		SB01	SB02	SB03	SB04	SB05	SB06	SB07	SB08	SB09
		8/9/2022	8/8/2022	8/8/2022	8/9/2022	8/8/2022	8/9/2022	8/9/2022	8/12/2022	8/9/2022
		0 - 5.0	0 - 5.0	0.3 - 2.0	0 - 4.5	0 - 3.0	0 - 6.0	0 - 5.0	0.3 - 6.0	0 - 5.0
Anthracene	500	ND	ND	ND	ND	ND	0.13 J	ND	ND	ND
Benzo[a]anthracene	5.6	ND	ND	ND	ND	ND	0.87	ND	ND	0.11 J
Benzo[a]pyrene	1	0.0853 J	ND	ND	ND	0.0818 J	1.3	ND	ND	0.12 J
Benzo[b]fluoranthene	5.6	0.12 J	ND	0.11 J	0.0877 J	0.1 J	1.7	0.088 J	ND	0.15 J
Benzo[g,h,i]perylene	500	ND	ND	ND	ND	ND	1.0	ND	ND	0.14 J
Benzo[k]fluoranthene	56	ND	ND	ND	ND	ND	0.49	ND	ND	ND
Chrysene	56	ND	ND	ND	ND	ND	0.94	ND	ND	0.11 J
Dibenz[a,h]anthracene	0.56	ND	ND	ND	ND	ND	0.23	ND	ND	ND
Fluoranthene	500	0.18	ND	0.15 J	0.1 J	0.1 J	1.5	0.14 J	ND	0.25
Indeno[1,2,3-cd]pyrene	5.6	ND	ND	ND	ND	ND	0.77	ND	ND	ND
Phenanthrene	500	0.12 J	ND	ND	ND	ND	0.49	ND	ND	0.14 J
Pyrene	500	0.12 J	ND	0.11 J	0.0853 J	0.1 J	1.1	0.0984 J	ND	0.18 J

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).
Shading = Concentration exceeds Commercial Use (Track 2) Soil Cleanup Objectives

Table 4. Summary of Polychlorinated Biphenyls (PCBs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2021-08 Corridor
Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, New York

PCBs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth								
		SB01	SB02	SB03	SB04	SB05	SB06	SB07	SB08	SB09
		8/9/2022	8/8/2022	8/8/2022	8/9/2022	8/8/2022	8/9/2022	8/9/2022	8/12/2022	8/9/2022
		0 - 5.0	0 - 5.0	0.3 - 2.0	0 - 4.5	0 - 3.0	0 - 6.0	0 - 5.0	0.3 - 6.0	0 - 5.0
Aroclor-1260	1	ND	ND	ND	ND	ND	ND	ND	ND	0.009 J
Aroclor (Total)*	1	ND	ND	ND	ND	ND	ND	ND	ND	0.009 J

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
* Refers to the total concentration of PCBs in the sample
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)

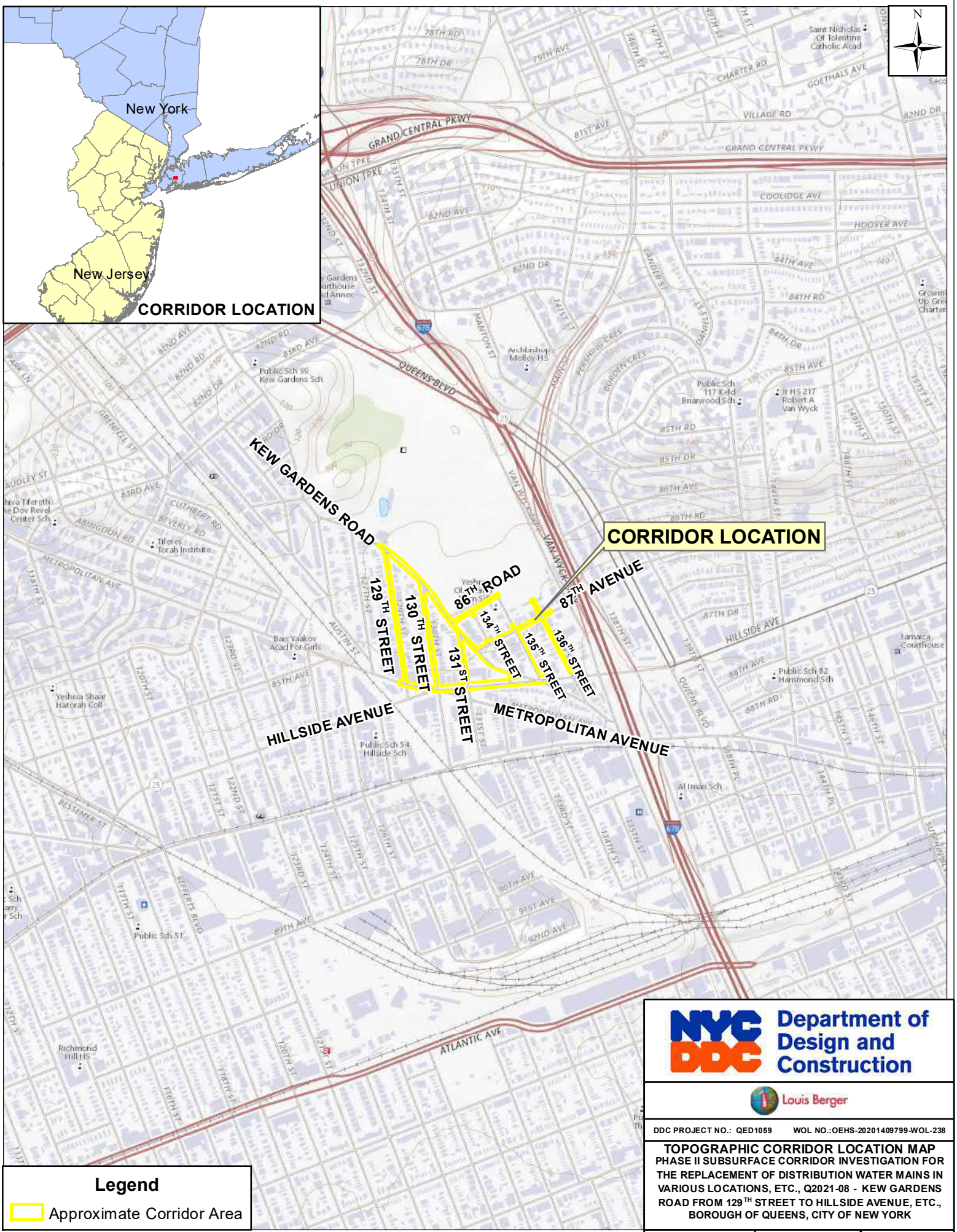
Table 5. Summary of Waste Classification Results in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2021-08 Corridor
Kew Gardens Road from 129th Street to Hillside Avenue, etc., Queens, New York

Analyte	Resource Conservation and Recovery Act (RCRA) Hazardous Waste Levels	Sample ID, Date Collected, and Depth								
		SB01	SB02	SB03	SB04	SB05	SB06	SB07	SB08	SB09
		8/9/2022	8/8/2022	8/8/2022	8/9/2022	8/8/2022	8/9/2022	8/9/2022	8/12/2022	8/9/2022
		0 - 5.0	0 - 5.0	0.3 - 2.0	0 - 4.5	0 - 3.0	0 - 6.0	0 - 5.0	0.3 - 6.0	0 - 5.0
RCRA (Including TCLP Metals)										
pH	2 - 12.5*	6.67	7.16	6.76	7.67	8.25	7.10	7.38	8.77	7.36
Ignitability	>140 °F**	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Paint Filter Test	NS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Reactive Cyanide	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reactive Sulfide	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	100	1.72	1.6	1.21	1.53	1.6	1.42	1.53	1.46	1.56
Cadmium	1	ND	ND	0.00346 J	0.00442 J	ND	0.00439 J	ND	ND	ND
Chromium	5	0.0184 J	0.0351 J	0.0301 J	0.0123 J	0.0161 J	0.0110 J	ND	ND	ND
Lead	5	ND	0.0245 J	0.0651	ND	0.0249 J	0.139	0.0219 J	ND	ND
Mercury	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH DRO/GRO (mg/kg)										
TPH-DRO	NS	14.4	5.9	25.2	37.2	22.1	48.7	10.3	9.08	139
TPH-GRO	NS	0.011 J	0.010 J	0.0230 J	0.868 J	0.0120 J	2.030 J	0.0120 J	0.991 J	0.961 J

Notes:
All concentrations are in parts per million, milligrams per kilogram, or milligrams per liter (ppm, mg/kg, or mg/L), unless otherwise noted
TCLP = Toxicity Characteristic Leaching Procedure
NS = No Standard
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
*A solid waste exhibits the characteristic of corrosivity if it has a pH less than or equal to 2 or greater than or equal to 12.5
**A solid waste exhibits the characteristic of ignitability if it has flash point less than 140 °F
°F = Degrees Fahrenheit
NEG = Negative (flash point was not detected below 140 °F) or Negative (Paint was not detected from Paint Filter Test)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

DDC Project Number: QED1059 Work Order Letter No. OEHS-20201409799-WOL-238

FIGURE 1 – TOPOGRAPHIC CORRIDOR LOCATION MAP



Source: USGS Quadrangle Jamaica, New York (2020)

DDC Project No. QED1059

HAZ - 39

Department of Design and Construction

Louis Berger

DDC PROJECT NO.: QED1059 WOL NO.:OEHS-20201409799-WOL-238

TOPOGRAPHIC CORRIDOR LOCATION MAP

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 1,000' | DATE: May 16, 2022 | SHEET: 1

FIGURE 2 – SOIL BORING LOCATION PLAN

N

KEW GARDENS ROAD

SB01

SB02

SB03

SB04

SB05

SB06

SB07

SB08

SB09

86TH ROAD

87TH AVENUE

129TH STREET

130TH STREET

131ST STREET

134TH STREET

135TH STREET

136TH STREET

HILLSIDE AVENUE

METROPOLITAN AVENUE

Legend

- Soil Boring Location
- Approximate Corridor Area

NYC DDC Department of Design and Construction

Louis Berger

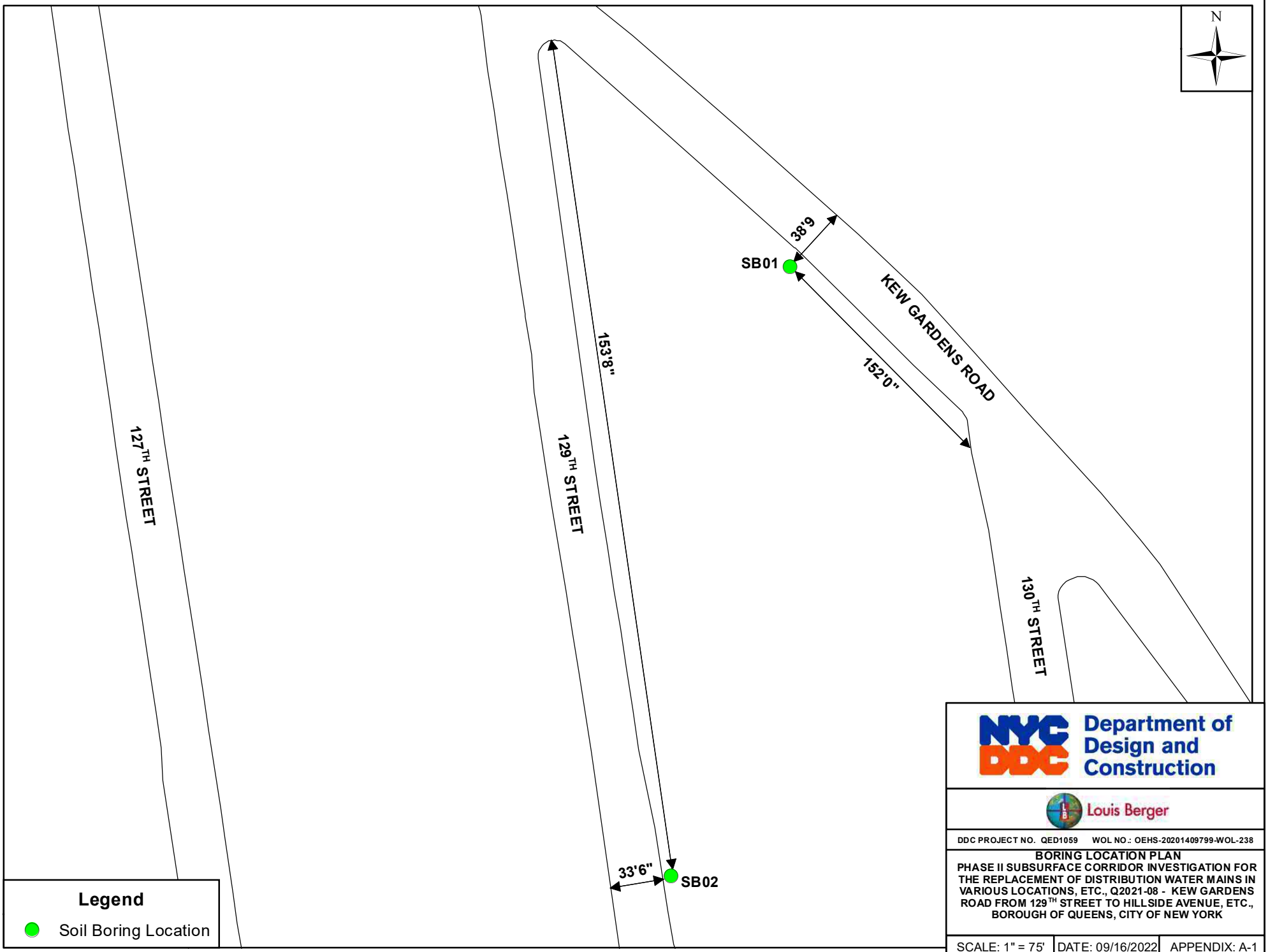
DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

SOIL BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 200'	DATE: 09/16/22	FIGURE: 2

APPENDIX A
BORING LOCATION PLAN



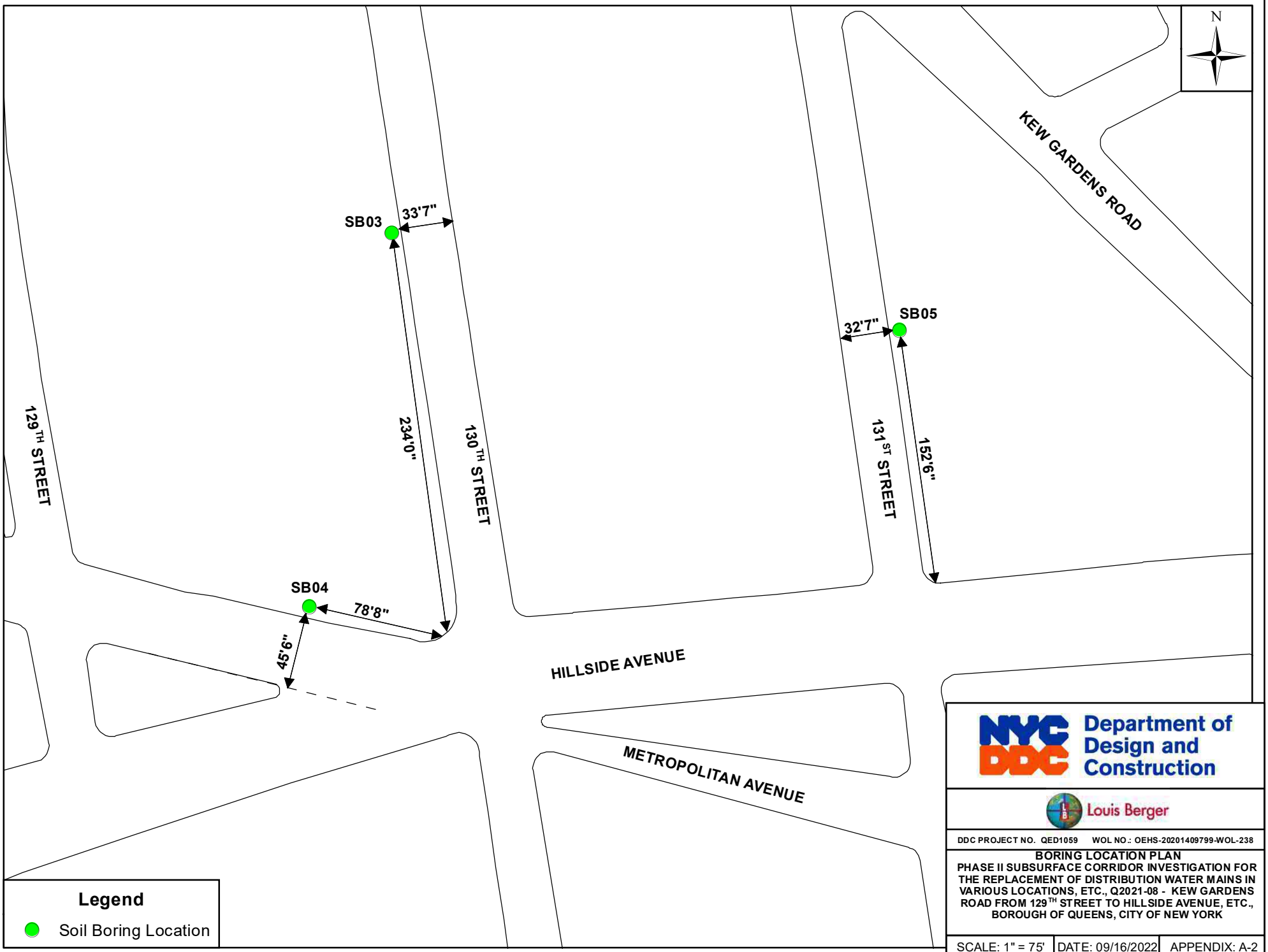
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-1



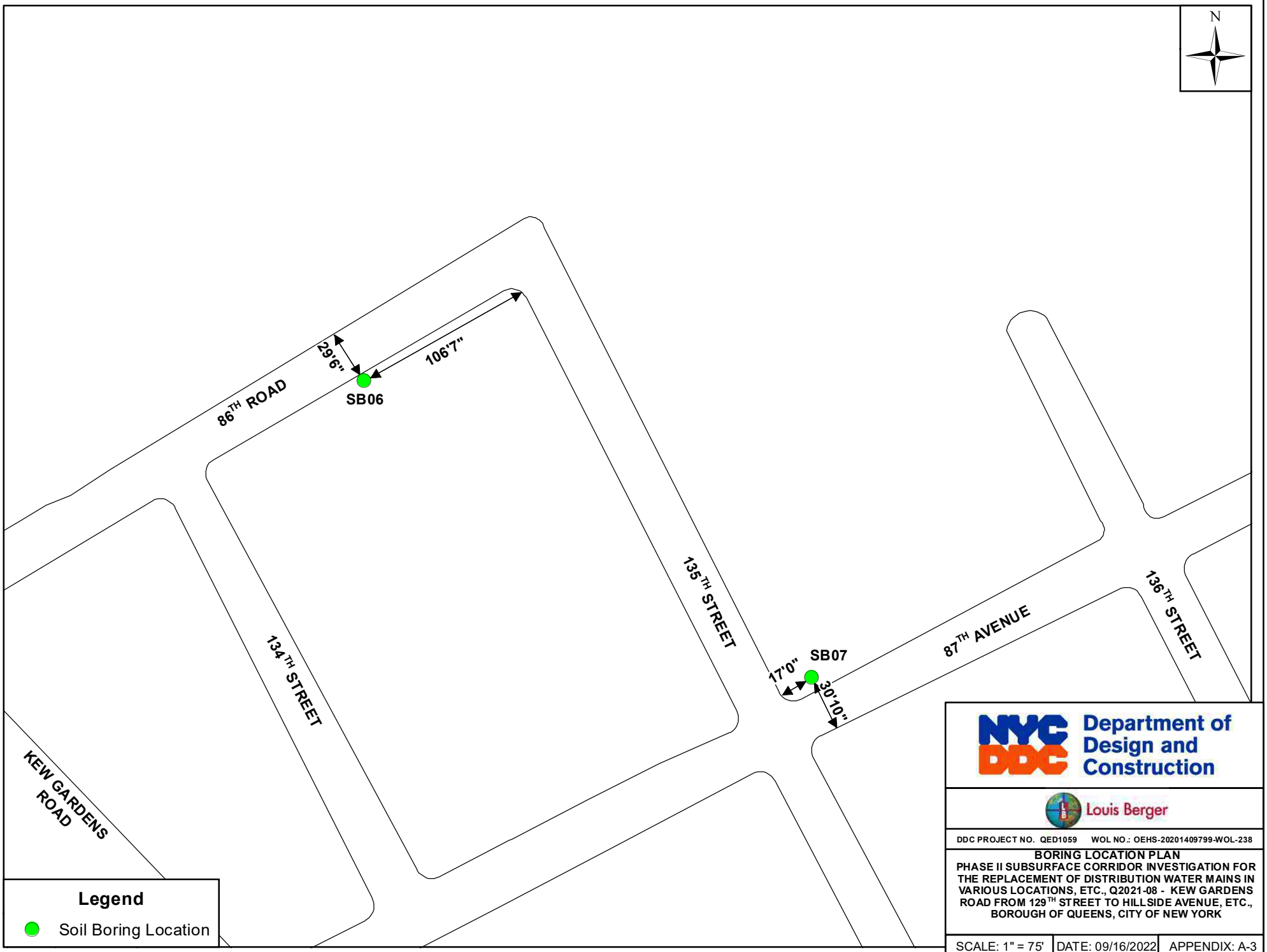
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-2



NYC DDC Department of Design and Construction

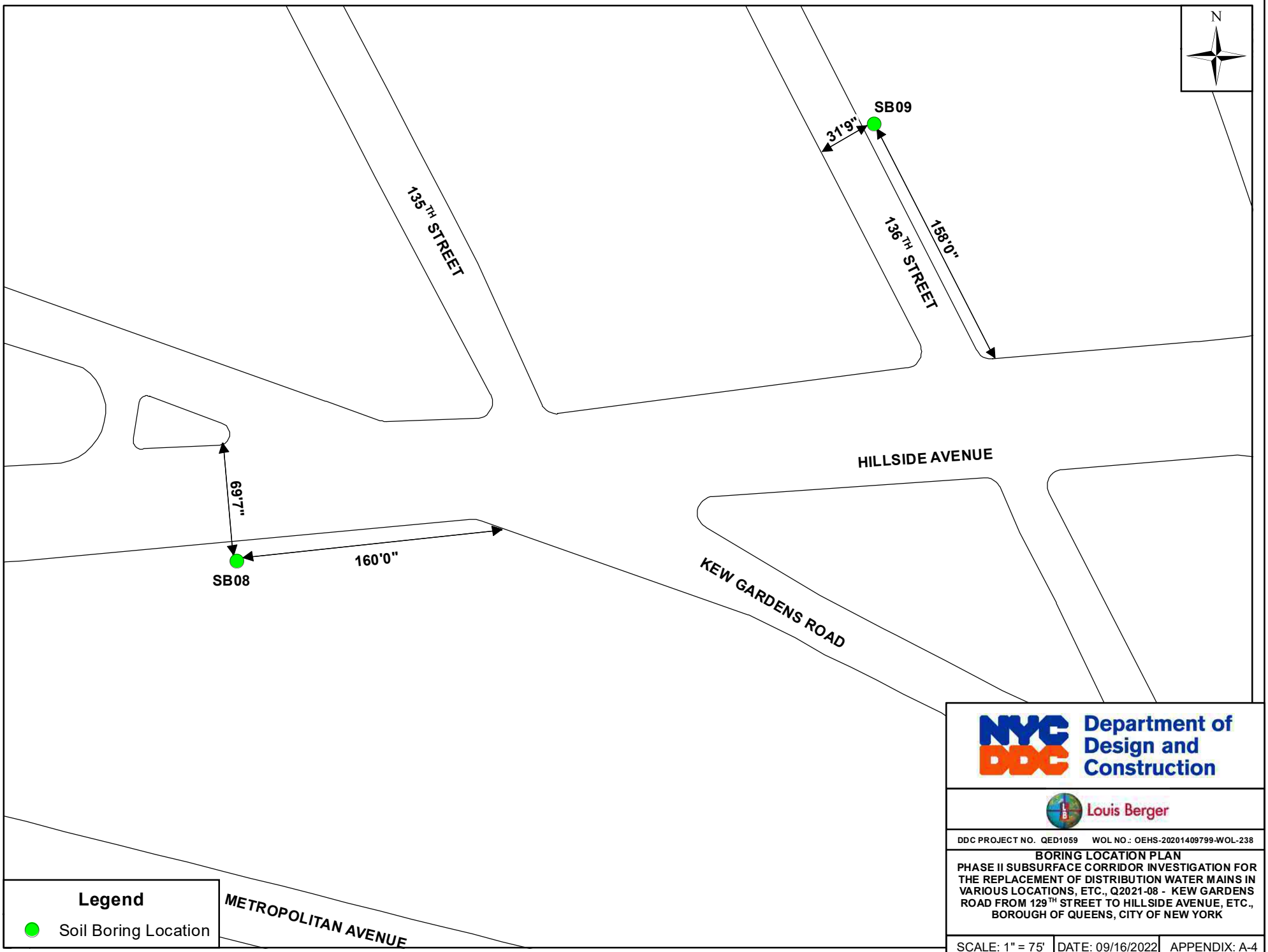
Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-3



Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2021-08 - KEW GARDENS ROAD FROM 129TH STREET TO HILLSIDE AVENUE, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-4

APPENDIX B
GEOLOGIC BORING LOGS

Louis Berger

Drilling Log

BORING NO.: SB01

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Vactron and Air Knife	**DATE STARTED:**	8/9/2022
BOREHOLE DATA		**DATE FINISHED:**	8/9/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	5	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	5	**NORTHING (ft):**	196695.729505
Depth to Water (ft.):	N/A	**EASTING (ft):**	1033207.984640
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 5 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	1		FILL			<1	Dark yellowish brown (10YR 4/2), fine SAND, some coarse to fine Gravel, dry.	**Gravelly Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, some coarse to fine Gravel, dry.	
	3							
	4		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, some coarse to fine Gravel, With Cobbles, dry.	**Collected grab sample SB01 from 4.5 to 5 ftbg and composite sample SB01 from 0 to 5 ftbg.**
	5						Total Depth of Boring 5 feet.	
	6							

Drilling Log

Page 1 of 1

BORING NO.: SB02

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Vactron and Air Knife	**DATE STARTED:**	8/8/2022
BOREHOLE DATA		**DATE FINISHED:**	8/8/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	5	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	5	**NORTHING (ft):**	196322.233334
Depth to Water (ft.):	N/A	**EASTING (ft):**	1033135.071450
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 5 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	1		FILL			<1	Grayish brown (5YR 3/2), SILT, trace Cobbles, dry.	**Silt (Fill)**
	2		FILL			<1	Moderate brown (5YR 3/4), fine SAND, trace Silt, dry.	**Sand (Fill)**
	3		FILL			<1	Moderate brown (5YR 3/4), medium to fine SAND, trace Clayey Silt, With Cobbles, dry.	**Clayey Silty Sand (Fill)**
	4		FILL			<1	Moderate brown (5YR 3/4), Clayey SILT, some medium to fine Sand, dry.	**Sandy Clayey Silt (Fill)**
	5		FILL			<1	Moderate brown (5YR 4/4), Clayey SILT, some medium to fine Sand, With Cobbles, dry. Total Depth of Boring 5 feet.	**Collected grab sample SB02 from 4.5 to 5 ftbg and composite sample SB02 from 0 to 5 ftbg.**
	6							

Drilling Log

Page 1 of 1

BORING NO.: SB03

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/8/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/8/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 2	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): 2	**Screen Length (ft):** N/A		**NORTHING (ft):** 195959.887037
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1033411.844290
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 2 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		CONCRETE			<1	Light gray (N7), CONCRETE, dry.	**Concrete**
			FILL			<1	Moderate brown (5YR 4/4), SILT, With Cobbles, dry.	**Silt (Fill)**
	1		FILL			<1	Moderate brown (5YR 4/4), SILT, some coarse to fine Sand, With Cobbles, dry.	**Sandy Silt (Fill). Collected grab sample SB03 from 1.5 to 2 ftbg and composite sample SB03 from 0.3 to 2 ftbg.**
	2						Total Depth of Boring 2 feet.	
	3							
	4							
	5							
	6							

Drilling Log

Page 1 of 1

BORING NO.: SB04

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/9/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/9/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 4.5	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): 4.5	**Screen Length (ft):** N/A		**NORTHING (ft):** 195730.629318
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1033361.491920
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 4.5 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, some coarse to medium Gravel, With Cobbles, dry.	**Gravelly Sand (Fill)**
	1		FILL			<1	Moderate brown (5YR 4/4), COBBLES, dry.	**Cobbles (Fill)**
	2							
	3							
	4		FILL			<1	Dark yellowish brown (10YR 4/2) to dark greenish gray (5GY 4/1), medium to fine SAND, some coarse to medium Gravel, With Cobbles, dry.	**Gravelly Sand (Fill). Collected grab sample SB04 from 4 to 4.5 ftbg and composite sample SB04 from 0 to 4.5 ftbg.**
							Total Depth of Boring 4.5 feet.	
	5							
	6							

Louis Berger	**Drilling Log** Page 1 of 1	**BORING NO.: SB05** **LOCATION: Queens, NY**

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/8/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/8/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 3	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): 3	**Screen Length (ft):** N/A		**NORTHING (ft):** 195899.925494
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1033722.620440
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 3 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	1		FILL			<1	Moderate brown (5YR 4/4), SILT, some coarse to fine Gravel, some Cobbles, dry.	**Gravelly Silt (Fill)**
	2		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some Silt, trace coarse to fine Gravel, dry.	**Silty Sand (Fill)**
	3		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some Silt, some Cobbles, dry. Total Depth of Boring 3 feet.	**Collected grab sample SB05 from 2.5 to 3 ftbg and composite sample SB05 from 0 to 3 ftbg.**
	4							
	5							
	6							

Drilling Log

Page 1 of 1

BORING NO.: SB06

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/9/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/9/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 6	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING (ft):** 196405.688621
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1033881.150640
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some Silt, trace coarse to fine Gravel and Cobbles, dry.	**Silty Sand (Fill)**
	1		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, trace Silt, trace coarse to fine Gravel, dry.	**Sand (Fill)**
	2		FILL			<1	Grayish brown (5YR 3/2) to olive gray (5Y 4/1), medium to fine SAND (98% fill material: ash, asphalt, coal, glass), dry.	**Sand (Fill-Ash)**
	3							
	4							
	5		FILL			<1	Grayish brown (5YR 3/2), coarse to fine SAND, trace coarse to fine Gravel (95% fill material: ash), dry.	**Sand (Fill-Ash). Collected grab sample SB06 from 5.5 to 6 ftbg and composite sample SB06 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB07

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/9/2022
BOREHOLE DATA		**DATE FINISHED:**	8/9/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	5	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	5	**NORTHING (ft):**	196224.088324
Depth to Water (ft.):	N/A	**EASTING (ft):**	1034155.524160
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 5 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	1		FILL			<1	Moderate brown (5YR 4/4), SILT, some coarse to fine Sand, dry.	**Sandy Silt (Fill)**
	2		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, trace coarse to fine Gravel, dry.	**Sand (Fill)**
	3		FILL			<1	Grayish brown (5YR 3/2), SILT, some coarse to fine Sand, trace coarse Gravel, dry.	**Sandy Silt (Fill)**
	4		FILL			<1	Grayish brown (5YR 3/2), coarse to fine SAND, some Silt, trace coarse Gravel, dry.	**Silty Sand (Fill)**
	5		FILL			<1	Grayish brown (5YR 3/2), coarse to fine SAND, some Silt, trace coarse Gravel, moist. Total Depth of Boring 5 feet.	**Collected grab sample SB07 from 4.5 to 5 ftbg and composite sample SB07 from 0 to 5 ftbg.**
	6							

Louis Berger	**Drilling Log** Page 1 of 1	**BORING NO.: SB08** **LOCATION: Queens, NY**

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/12/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/12/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 6	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING (ft):** 195709.434462
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1034160.594050
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		CONCRETE			<1	Greenish gray (5GY 6/1), CONCRETE, dry.	**Concrete**
			FILL			<1	Moderate brown (5YR 3/4), coarse to fine SAND, some Silt, some coarse to fine Gravel, moist.	**Gravelly Silty Sand (Fill). Collected grab sample SB08 from 5.5 to 6 ftbg and composite sample SB08 from 0.3 to 6 ftbg.**
	1							
	2							
	3							
	4							
	5							
	6						Total Depth of Boring 6 feet.	

Drilling Log

Louis Berger

Page 1 of 1

BORING NO.: SB09

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2021-08 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/9/2022
BOREHOLE DATA		**DATE FINISHED:**	8/9/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	5	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	5	**NORTHING (ft):**	195977.262967
Depth to Water (ft.):	N/A	**EASTING (ft):**	1034551.181600
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encountered at 5 ftbg due to highly compacted soil.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 3/4), coarse to fine SAND, some Silt, trace coarse to fine Gravel, dry.	**Silty Sand (Fill)**
	1		FILL			<1	Moderate brown (5YR 3/4), coarse to fine SAND, some Silt, trace coarse to fine Gravel, dry.	
	2		FILL			<1	Moderate yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/2), coarse to fine SAND, some Silty Clay, trace fine Gravel, dry.	**Silty Clayey Sand (Fill)**
	3							
	4		FILL			<1	Dark yellowish brown (10YR 4/2), coarse to fine SAND, some Silty Clay, dry.	**Collected grab sample SB09 from 4.5 to 5 ftbg and composite sample SB09 from 0 to 5 ftbg.**
	5						Total Depth of Boring 5 feet.	
	6							

APPENDIX C
LABORATORY ANALYTICAL RESULTS

CHEMTECH

ANALYTICAL RESULTS SUMMARY

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4130

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
Client ID:	**SB02**								
N4130-01	SB02	SOIL	Acetone		76.0		14.0	28.8	ug/Kg
			Total Voc :		76.0				
N4130-01	SB02	SOIL	Silanol, trimethyl-	*	21.1	J	0	0	ug/Kg
			Total Tics :		21.1				
			Total Concentration:		97.1				
Client ID:	**SB03**								
N4130-03	SB03	SOIL	Silanol, trimethyl-	*	17.3	J	0	0	ug/Kg
			Total Tics :		17.3				
			Total Concentration:		17.3				
Client ID:	**SB05**								
N4130-05	SB05	SOIL	Acetone		58.2		12.9	26.4	ug/Kg
			Total Voc :		58.2				
N4130-05	SB05	SOIL	Silanol, trimethyl-	*	15.9	J	0	0	ug/Kg
			Total Tics :		15.9				
			Total Concentration:		74.1				
Client ID:	**SB05RE**								
N4130-05RE	SB05RE	SOIL	Acetone		250		12.9	26.4	ug/Kg
N4130-05RE	SB05RE	SOIL	Methylene Chloride		11.5		6.30	10.6	ug/Kg
			Total Voc :		262				
			Total Concentration:		262				
Client ID:	**SB06**								
N4130-07	SB06	SOIL	Acetone		360		15.6	32.1	ug/Kg
N4130-07	SB06	SOIL	Methylene Chloride		11.5	J	7.60	12.8	ug/Kg
			Total Voc :		372				
N4130-07	SB06	SOIL	Silanol, trimethyl-	*	90.4	J	0	0	ug/Kg
			Total Tics :		90.4				
			Total Concentration:		462				
Client ID:	**SB07**								
N4130-09	SB07	SOIL	Acetone		52.9		14.7	30.1	ug/Kg
N4130-09	SB07	SOIL	Methylene Chloride		7.20	J	7.20	12.0	ug/Kg
			Total Voc :		60.1				
N4130-09	SB07	SOIL	Silanol, trimethyl-	*	15.9	J	0	0	ug/Kg
			Total Tics :		15.9				
			Total Concentration:		76.0				
Client ID:	**SB09**								
N4130-11	SB09	SOIL	Acetone		83.7		13.7	28.0	ug/Kg
N4130-11	SB09	SOIL	Methylene Chloride		7.00	J	6.70	11.2	ug/Kg
			Total Voc :		90.7				
N4130-11	SB09	SOIL	Silanol, trimethyl-	*	29.3	J	0	0	ug/Kg
			Total Tics :		29.3				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
			Total Concentration:		120				
Client ID:	**SB09RE**								
N4130-11RE	SB09RE	SOIL	Acetone		470		13.7	28.2	ug/Kg
N4130-11RE	SB09RE	SOIL	Methylene Chloride		14.7		6.70	11.3	ug/Kg
			Total Voc :		485				
			Total Concentration:		485				
Client ID:	**SB04**								
N4130-13	SB04	SOIL	Acetone		110		13.5	27.6	ug/Kg
			Total Voc :		110				
N4130-13	SB04	SOIL	Silanol, trimethyl-	*	51.7	J	0	0	ug/Kg
			Total Tics :		51.7				
			Total Concentration:		162				
Client ID:	**SB04RE**								
N4130-13RE	SB04RE	SOIL	Acetone		130		13.6	27.8	ug/Kg
			Total Voc :		130				
N4130-13RE	SB04RE	SOIL	unknown7.191	*	41.8	J	0	0	ug/Kg
			Total Tics :		41.8				
			Total Concentration:		172				
Client ID:	**SB01**								
N4130-15	SB01	SOIL	Acetone		70.8		13.1	26.8	ug/Kg
N4130-15	SB01	SOIL	Methylene Chloride		7.90	J	6.40	10.7	ug/Kg
			Total Voc :		78.7				
N4130-15	SB01	SOIL	Silanol, trimethyl-	*	23.5	J	0	0	ug/Kg
			Total Tics :		23.5				
			Total Concentration:		102				
Client ID:	**SB01RE**								
N4130-15RE	SB01RE	SOIL	Acetone		330		13.3	27.3	ug/Kg
			Total Voc :		330				
			Total Concentration:		330				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB03								
N4130-03	SB03	SOIL	Fluoranthene	150.000	J	97.9	210	ug/Kg
N4130-03	SB03	SOIL	Pyrene	110.000	J	91	210	ug/Kg
N4130-03	SB03	SOIL	Benzo(b)fluoranthene	110.000	J	84.6	210	ug/Kg
			Total Svoc :	**370.00**				
			Total Concentration:	**370.00**				
Client ID : SB05								
N4130-05	SB05	SOIL	Fluoranthene	100.000	J	84.7	180	ug/Kg
N4130-05	SB05	SOIL	Pyrene	100.000	J	78.7	180	ug/Kg
N4130-05	SB05	SOIL	Benzo(b)fluoranthene	100.000	J	73.2	180	ug/Kg
N4130-05	SB05	SOIL	Benzo(a)pyrene	81.800	J	71.8	180	ug/Kg
			Total Svoc :	**381.80**				
			Total Concentration:	**381.80**				
Client ID : SB06								
N4130-07	SB06	SOIL	Phenanthrene	490.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Anthracene	130.000	J	110	220	ug/Kg
N4130-07	SB06	SOIL	Fluoranthene	1,500.000		100	220	ug/Kg
N4130-07	SB06	SOIL	Pyrene	1,100.000		95.2	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(a)anthracene	870.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Chrysene	940.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(b)fluoranthene	1,700.000		88.5	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(k)fluoranthene	490.000		94.4	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(a)pyrene	1,300.000		86.8	220	ug/Kg
N4130-07	SB06	SOIL	Indeno(1,2,3-cd)pyrene	770.000		130	220	ug/Kg
N4130-07	SB06	SOIL	Dibenzo(a,h)anthracene	230.000		130	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(g,h,i)perylene	1,000.000		120	220	ug/Kg
			Total Svoc :	**10,520.00**				
			Total Concentration:	**10,520.00**				
Client ID : SB07								
N4130-09	SB07	SOIL	Fluoranthene	140.000	J	96	200	ug/Kg
N4130-09	SB07	SOIL	Pyrene	98.400	J	89.3	200	ug/Kg
N4130-09	SB07	SOIL	Benzo(b)fluoranthene	88.000	J	83	200	ug/Kg
			Total Svoc :	**326.40**				
			Total Concentration:	**326.40**				
Client ID : SB09								
N4130-11	SB09	SOIL	Phenanthrene	140.000	J	94.3	190	ug/Kg
N4130-11	SB09	SOIL	Fluoranthene	250.000		90	190	ug/Kg
N4130-11	SB09	SOIL	Pyrene	180.000	J	83.7	190	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4130-11	SB09	SOIL	Benzo(a)anthracene	110.000	J	97.9	190	ug/Kg
N4130-11	SB09	SOIL	Chrysene	110.000	J	96.4	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(b)fluoranthene	150.000	J	77.8	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(a)pyrene	120.000	J	76.3	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(g,h,i)perylene	140.000	J	110	190	ug/Kg
			Total Svoc :	**1,200.00**				
			Total Concentration:	**1,200.00**				
Client ID :	**SB04**							
N4130-13	SB04	SOIL	Fluoranthene	100.000	J	89.1	190	ug/Kg
N4130-13	SB04	SOIL	Pyrene	85.300	J	82.8	190	ug/Kg
N4130-13	SB04	SOIL	Benzo(b)fluoranthene	87.700	J	77	190	ug/Kg
			Total Svoc :	**273.00**				
			Total Concentration:	**273.00**				
Client ID :	**SB01**							
N4130-15	SB01	SOIL	Phenanthrene	120.000	J	90.8	180	ug/Kg
N4130-15	SB01	SOIL	Fluoranthene	180.000		86.7	180	ug/Kg
N4130-15	SB01	SOIL	Pyrene	120.000	J	80.6	180	ug/Kg
N4130-15	SB01	SOIL	Benzo(b)fluoranthene	120.000	J	75	180	ug/Kg
N4130-15	SB01	SOIL	Benzo(a)pyrene	85.300	J	73.6	180	ug/Kg
			Total Svoc :	**625.30**				
			Total Concentration:	**625.30**				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130 **Order ID:** N4130

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB09								
N4130-11	SB09	SOIL	Aroclor-1260	9.00	J	3.60	19.1	ug/kg
			Total Concentration:	**9.000**				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130 **Order ID:** N4130

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB02								
N4130-02	SB02	TCLP	Barium	1,600.000		77.9	500	ug/L
N4130-02	SB02	TCLP	Chromium	35.100	J	10.4	50.0	ug/L
N4130-02	SB02	TCLP	Lead	24.500	J	19.4	60.0	ug/L
Client ID : SB03								
N4130-04	SB03	TCLP	Barium	1,210.000		77.9	500	ug/L
N4130-04	SB03	TCLP	Cadmium	3.460	J	2.60	30.0	ug/L
N4130-04	SB03	TCLP	Chromium	30.100	J	10.4	50.0	ug/L
N4130-04	SB03	TCLP	Lead	65.100		19.4	60.0	ug/L
Client ID : SB05								
N4130-06	SB05	TCLP	Barium	1,600.000		77.9	500	ug/L
N4130-06	SB05	TCLP	Chromium	16.100	J	10.4	50.0	ug/L
N4130-06	SB05	TCLP	Lead	24.900	J	19.4	60.0	ug/L
Client ID : SB06								
N4130-08	SB06	TCLP	Barium	1,420.000		77.9	500	ug/L
N4130-08	SB06	TCLP	Cadmium	4.390	J	2.60	30.0	ug/L
N4130-08	SB06	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4130-08	SB06	TCLP	Lead	139.000		19.4	60.0	ug/L
Client ID : SB07								
N4130-10	SB07	TCLP	Barium	1,530.000		77.9	500	ug/L
N4130-10	SB07	TCLP	Lead	21.900	J	19.4	60.0	ug/L
Client ID : SB09								
N4130-12	SB09	TCLP	Barium	1,560.000		77.9	500	ug/L
Client ID : SB04								
N4130-14	SB04	TCLP	Barium	1,530.000		77.9	500	ug/L
N4130-14	SB04	TCLP	Cadmium	4.420	J	2.60	30.0	ug/L
N4130-14	SB04	TCLP	Chromium	12.300	J	10.4	50.0	ug/L
Client ID : SB01								
N4130-16	SB01	TCLP	Barium	1,720.000		77.9	500	ug/L
N4130-16	SB01	TCLP	Chromium	18.400	J	10.4	50.0	ug/L

CHEMTECH

DATA PACKAGE

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4130

ATTENTION : Jonathan Ganz

NELAP ACCREDITED TNI LABORATORY

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP

Table Of Contents for N4130

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : N4130

Project ID : QED1059 Phase II SCI

Client : Louis Berger U.S., Inc., A WSP Company

Lab Sample Number	Client Sample Number
N4130-01	SB02
N4130-02	SB02
N4130-03	SB03
N4130-04	SB03
N4130-05	SB05
N4130-06	SB05
N4130-07	SB06
N4130-08	SB06
N4130-09	SB07
N4130-10	SB07
N4130-11	SB09
N4130-12	SB09
N4130-13	SB04
N4130-14	SB04
N4130-15	SB01
N4130-16	SB01

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:14 pm, Aug 26, 2022
Date: 8/26/2022

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for SB02 [1,2-Dichloroethane-d4 - 211%], SB06 [1,2-Dichloroethane-d4 - 278%], VIAL A analyzed but surrogate fail as a corrective action VIAL B analyzed but didnot purge therefore lab reported VIAL A as final analysis while SB09 [1,2-Dichloroethane-d4 - 197%],SB09RE [1,2-Dichloroethane-d4 - 298%, Dibromofluoromethane - 155%], SB04 [1,2-Dichloroethane-d4 - 281%], SB04RE [1,2-Dichloroethane-d4 - 278%], SB01 [1,2-Dichloroethane-d4 - 170%], SB01RE [1,2-Dichloroethane-d4 - 316% and Dibromofluoromethane - 149%], SB05RE [1,2-Dichloroethane-d4 - 297%], All the failure samples were reanalyzed to confirm the results as per method and reported in the data

The Internal Standards Areas met the acceptable requirements except for SB03, SB03RE, SB05, SB05RE SB09, SB09RE, SB04, SB04RE ,SB01 and SB01RE All the failure samples in internal standard were reanalyzed to confirm the results as per method and reported in the data.SB02, SB06, SB07 VIAL A analyzed but internal standard fail as a corrective action VIAL B analyzed but didnot purge therefore lab reported VIAL A as final analysis.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

The Retention Times were acceptable for all samples.
The RPD met criteria .

The Blank Spike for {VD0811SBS01} with File ID: VD074037.D met requirements for all samples except for Dichlorodifluoromethane[137%] but no positive hit in associated samples therefore no corrective action taken.

The Blank Spike Duplicate for {VD0811SBSD01} with File ID: VD074039.D met requirements for all samples except for Dichlorodifluoromethane[138%] but no positive hit in associated samples therefore no corrective action taken.

The Blank analysis did not indicate the presence of lab contamination.

The %RSD is greater than 15% in the Initial Calibration method (82D081022S.M) for Dichlorodifluoromethane, Chloromethane, Methyl Acetate, Methylene Chloride,1,2-Dichloroethane-d4,Toluene-d8,1,2-Dibromo-3-Chloropropane, these compounds are passing on Linear Regression.

The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Additional Comments:

sample # SB05 & SB05RE not match for Methylene Chloride due to in-house contamination.

Samples for MS/MSD for VOC analysis were not provided with this set of samples. The Blank Spike Duplicate is reported with the data.

Trip Blank was not provided with this set of samples.

The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:15 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: Gasoline Range Organics

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Gasoline Range Organics.

C. Analytical Techniques:
The analysis performed on instrument FID_B were done using GC column RTX502.2 which is 60 meters, 0.53mm ID, 3.0 um df, cat#10909.The analysis of Gasoline Range Organics was based on method 8015D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
SB02 [Alpha,Alpha,Alpha-Trifluorotoluene - 49%] Vial A analyzed but surrogate fail as a corrective action Vial B analyzed but did not purge and no more vial for analysis therefore reported vial A as final analysis,
SB02MSD [Alpha,Alpha,Alpha-Trifluorotoluene - 41%] due to matrix interference,
SB01 [Alpha,Alpha,Alpha-Trifluorotoluene - 37%],
SB01RE [Alpha,Alpha andAlpha-Trifluorotoluene - 7%]
All the failure samples in surrogates were reanalyzed to confirm the results as per method and reported in the data.

The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

For Samples # SB06, SB09 and SB04 both soil vial did not purge therefore analyzed directly in methanol.

E. Additional Comments:
The soil samples results are based on a dry weight basis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:15 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: SVOC-PAH

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for SVOC-PAH.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column DB-UI 8270D which is 20 meters, 0.18 mm ID, 0.36 um dfThe samples were analyzed on instrument BNA_M using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGAThe analysis of SVOC-PAH was based on method 8270E and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Additional Comments:
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

The soil samples results are based on a dry weight basis.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:16 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: PCB

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_P. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:
The soil samples results are based on a dry weight basis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:16 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: Diesel Range Organics

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Diesel Range Organics.

C. Analytical Techniques:
The analysis were performed on instrument FID_F. The column is RXI-1MS which is 20 meters, 0.18mm ID, 0.18 um df, catalog 13302. The analysis were performed on instrument FID_G. The column is RXI-1MS which is 20 meters, 0.18mm ID, 0.18 um df, catalog 13302.The analysis of Diesel Range Organics was based on method 8015D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

Samples SB06, SB09 and SB04 were diluted due to bad matrices, The above samples original run are reported as screening data in miscellaneous data.

E. Additional Comments:
The soil samples results are based on a dry weight basis.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:16 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: TCLP Mercury,TCLP ICP Metals

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for TCLP Mercury,TCLP ICP Metals.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:
In Analytical Sequence LB121471, CCV12 fail for all Elements but no any samples associated under this CCV.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:17 pm, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4130
Test Name: Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide

A. Number of Samples and Date of Receipt:
16 Solid samples were received on 08/09/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide.

C. Analytical Techniques:
The analysis of Ignitability was based on method 1030, The analysis of Reactive Cyanide was based on method 9012B, The analysis of Reactive Sulfide was based on method 9034, The analysis of Corrosivity was based on method 9045D and The analysis of Paint Filter was based on method 9095B.

D. QA/ QC Samples:
The Holding Times were met for all samples except for SB01 of Corrosivity, for SB02 of Corrosivity.for SB03 of Corrosivity.for SB04 of Corrosivity.for SB05 of Corrosivity.for SB06 of Corrosivity.for SB07 of Corrosivity.for SB09 of Corrosivity as samples are receive out of hold.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:17 pm, Aug 26, 2022

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value**.** This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: N4130

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: SOHIL JODHANI **Date:** 08/26/2022

2nd Level QA Review Signature: N. N. Pandya **Date:**

APPROVED
By Nimisha Pandya QA/QC Supervisor at 12:17 pm, Aug 26, 2022

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-03	**SB03**	**SOIL**			**08/08/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-03RE	**SB03RE**	**SOIL**			**08/08/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-05	**SB05**	**SOIL**			**08/08/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-05RE	**SB05RE**	**SOIL**			**08/08/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-07	**SB06**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-09	**SB07**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-11	**SB09**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-11RE	**SB09RE**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-13	**SB04**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-13RE	**SB04RE**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	
N4130-15	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			VOC-TCLVOA-10	8260D			08/11/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

N4130-15RE	**SB01RE**	**SOIL**			**08/09/22**	**08/09/22**
			VOC-TCLVOA-10	8260D		08/11/22

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
Client ID:	**SB02**								
N4130-01	SB02	SOIL	Acetone		76.0		14.0	28.8	ug/Kg
			Total Voc :		76.0				
N4130-01	SB02	SOIL	Silanol, trimethyl-	*	21.1	J	0	0	ug/Kg
			Total Tics :		21.1				
			Total Concentration:		97.1				
Client ID:	**SB03**								
N4130-03	SB03	SOIL	Silanol, trimethyl-	*	17.3	J	0	0	ug/Kg
			Total Tics :		17.3				
			Total Concentration:		17.3				
Client ID:	**SB05**								
N4130-05	SB05	SOIL	Acetone		58.2		12.9	26.4	ug/Kg
			Total Voc :		58.2				
N4130-05	SB05	SOIL	Silanol, trimethyl-	*	15.9	J	0	0	ug/Kg
			Total Tics :		15.9				
			Total Concentration:		74.1				
Client ID:	**SB05RE**								
N4130-05RE	SB05RE	SOIL	Acetone		250		12.9	26.4	ug/Kg
N4130-05RE	SB05RE	SOIL	Methylene Chloride		11.5		6.30	10.6	ug/Kg
			Total Voc :		262				
			Total Concentration:		262				
Client ID:	**SB06**								
N4130-07	SB06	SOIL	Acetone		360		15.6	32.1	ug/Kg
N4130-07	SB06	SOIL	Methylene Chloride		11.5	J	7.60	12.8	ug/Kg
			Total Voc :		372				
N4130-07	SB06	SOIL	Silanol, trimethyl-	*	90.4	J	0	0	ug/Kg
			Total Tics :		90.4				
			Total Concentration:		462				
Client ID:	**SB07**								
N4130-09	SB07	SOIL	Acetone		52.9		14.7	30.1	ug/Kg
N4130-09	SB07	SOIL	Methylene Chloride		7.20	J	7.20	12.0	ug/Kg
			Total Voc :		60.1				
N4130-09	SB07	SOIL	Silanol, trimethyl-	*	15.9	J	0	0	ug/Kg
			Total Tics :		15.9				
			Total Concentration:		76.0				
Client ID:	**SB09**								
N4130-11	SB09	SOIL	Acetone		83.7		13.7	28.0	ug/Kg
N4130-11	SB09	SOIL	Methylene Chloride		7.00	J	6.70	11.2	ug/Kg
			Total Voc :		90.7				
N4130-11	SB09	SOIL	Silanol, trimethyl-	*	29.3	J	0	0	ug/Kg
			Total Tics :		29.3				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
			Total Concentration:		120				
Client ID:	**SB09RE**								
N4130-11RE	SB09RE	SOIL	Acetone		470		13.7	28.2	ug/Kg
N4130-11RE	SB09RE	SOIL	Methylene Chloride		14.7		6.70	11.3	ug/Kg
			Total Voc :		485				
			Total Concentration:		485				
Client ID:	**SB04**								
N4130-13	SB04	SOIL	Acetone		110		13.5	27.6	ug/Kg
			Total Voc :		110				
N4130-13	SB04	SOIL	Silanol, trimethyl-	*	51.7	J	0	0	ug/Kg
			Total Tics :		51.7				
			Total Concentration:		162				
Client ID:	**SB04RE**								
N4130-13RE	SB04RE	SOIL	Acetone		130		13.6	27.8	ug/Kg
			Total Voc :		130				
N4130-13RE	SB04RE	SOIL	unknown7.191	*	41.8	J	0	0	ug/Kg
			Total Tics :		41.8				
			Total Concentration:		172				
Client ID:	**SB01**								
N4130-15	SB01	SOIL	Acetone		70.8		13.1	26.8	ug/Kg
N4130-15	SB01	SOIL	Methylene Chloride		7.90	J	6.40	10.7	ug/Kg
			Total Voc :		78.7				
N4130-15	SB01	SOIL	Silanol, trimethyl-	*	23.5	J	0	0	ug/Kg
			Total Tics :		23.5				
			Total Concentration:		102				
Client ID:	**SB01RE**								
N4130-15RE	SB01RE	SOIL	Acetone		330		13.3	27.3	ug/Kg
			Total Voc :		330				
			Total Concentration:		330				

SAMPLE DATA

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.8
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074038.D	1		08/11/22 13:29	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.80	UQ	0.99	5.80	ug/Kg
74-87-3	Chloromethane	5.80	U	1.20	5.80	ug/Kg
75-01-4	Vinyl Chloride	5.80	U	1.00	5.80	ug/Kg
74-83-9	Bromomethane	5.80	U	1.30	5.80	ug/Kg
75-00-3	Chloroethane	5.80	U	1.00	5.80	ug/Kg
75-69-4	Trichlorofluoromethane	5.80	U	1.10	5.80	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.80	U	0.83	5.80	ug/Kg
75-35-4	1,1-Dichloroethene	5.80	U	0.99	5.80	ug/Kg
67-64-1	Acetone	76.0		14.0	28.8	ug/Kg
75-15-0	Carbon Disulfide	5.80	U	0.86	5.80	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.80	U	1.10	5.80	ug/Kg
79-20-9	Methyl Acetate	5.80	U	1.50	5.80	ug/Kg
75-09-2	Methylene Chloride	11.5	U	6.90	11.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.80	U	0.78	5.80	ug/Kg
75-34-3	1,1-Dichloroethane	5.80	U	0.81	5.80	ug/Kg
110-82-7	Cyclohexane	5.80	U	0.97	5.80	ug/Kg
78-93-3	2-Butanone	28.8	U	8.40	28.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.80	U	0.91	5.80	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.80	U	0.78	5.80	ug/Kg
74-97-5	Bromochloromethane	5.80	U	0.93	5.80	ug/Kg
67-66-3	Chloroform	5.80	U	0.77	5.80	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.80	U	0.86	5.80	ug/Kg
108-87-2	Methylcyclohexane	5.80	U	0.92	5.80	ug/Kg
71-43-2	Benzene	5.80	U	0.76	5.80	ug/Kg
107-06-2	1,2-Dichloroethane	5.80	U	0.97	5.80	ug/Kg
79-01-6	Trichloroethene	5.80	U	0.84	5.80	ug/Kg
78-87-5	1,2-Dichloropropane	5.80	U	0.75	5.80	ug/Kg
75-27-4	Bromodichloromethane	5.80	U	0.81	5.80	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.8	U	5.30	28.8	ug/Kg
108-88-3	Toluene	5.80	U	0.73	5.80	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.80	U	0.85	5.80	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.80	U	0.82	5.80	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.8
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074038.D	1		08/11/22 13:29	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.80	U	0.99	5.80	ug/Kg
591-78-6	2-Hexanone	28.8	U	5.40	28.8	ug/Kg
124-48-1	Dibromochloromethane	5.80	U	0.86	5.80	ug/Kg
106-93-4	1,2-Dibromoethane	5.80	U	0.86	5.80	ug/Kg
127-18-4	Tetrachloroethene	5.80	U	0.87	5.80	ug/Kg
108-90-7	Chlorobenzene	5.80	U	0.75	5.80	ug/Kg
100-41-4	Ethyl Benzene	5.80	U	0.81	5.80	ug/Kg
179601-23-1	m/p-Xylenes	11.5	U	1.70	11.5	ug/Kg
95-47-6	o-Xylene	5.80	U	0.91	5.80	ug/Kg
100-42-5	Styrene	5.80	U	0.91	5.80	ug/Kg
75-25-2	Bromoform	5.80	U	0.93	5.80	ug/Kg
98-82-8	Isopropylbenzene	5.80	U	0.83	5.80	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.80	U	1.30	5.80	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.80	U	0.77	5.80	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.80	U	0.73	5.80	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.80	U	0.74	5.80	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.80	U	1.40	5.80	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.80	U	1.10	5.80	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.80	U	1.20	5.80	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	110	*	50 - 163	211%	SPK: 50
1868-53-7	Dibromofluoromethane	62.4		54 - 147	125%	SPK: 50
2037-26-5	Toluene-d8	46.6		78 - 125	93%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.8		50 - 146	98%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	46700	7.967			
540-36-3	1,4-Difluorobenzene	86400	8.856			
3114-55-4	Chlorobenzene-d5	84100	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	37200	13.555			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	21.1	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.8
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074038.D	1		08/11/22 13:29	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074040.D	1		08/11/22 14:27	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	6.10	UQ	1.10	6.10	ug/Kg
74-87-3	Chloromethane	6.10	U	1.30	6.10	ug/Kg
75-01-4	Vinyl Chloride	6.10	U	1.10	6.10	ug/Kg
74-83-9	Bromomethane	6.10	U	1.40	6.10	ug/Kg
75-00-3	Chloroethane	6.10	U	1.10	6.10	ug/Kg
75-69-4	Trichlorofluoromethane	6.10	U	1.20	6.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	6.10	U	0.88	6.10	ug/Kg
75-35-4	1,1-Dichloroethene	6.10	U	1.10	6.10	ug/Kg
67-64-1	Acetone	30.6	U	14.9	30.6	ug/Kg
75-15-0	Carbon Disulfide	6.10	U	0.92	6.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	6.10	U	1.10	6.10	ug/Kg
79-20-9	Methyl Acetate	6.10	U	1.50	6.10	ug/Kg
75-09-2	Methylene Chloride	12.3	U	7.30	12.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	6.10	U	0.83	6.10	ug/Kg
75-34-3	1,1-Dichloroethane	6.10	U	0.86	6.10	ug/Kg
110-82-7	Cyclohexane	6.10	U	1.00	6.10	ug/Kg
78-93-3	2-Butanone	30.6	U	8.90	30.6	ug/Kg
56-23-5	Carbon Tetrachloride	6.10	U	0.97	6.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	6.10	U	0.83	6.10	ug/Kg
74-97-5	Bromochloromethane	6.10	U	0.99	6.10	ug/Kg
67-66-3	Chloroform	6.10	U	0.82	6.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	6.10	U	0.92	6.10	ug/Kg
108-87-2	Methylcyclohexane	6.10	U	0.98	6.10	ug/Kg
71-43-2	Benzene	6.10	U	0.81	6.10	ug/Kg
107-06-2	1,2-Dichloroethane	6.10	U	1.00	6.10	ug/Kg
79-01-6	Trichloroethene	6.10	U	0.89	6.10	ug/Kg
78-87-5	1,2-Dichloropropane	6.10	U	0.80	6.10	ug/Kg
75-27-4	Bromodichloromethane	6.10	U	0.86	6.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	30.6	U	5.60	30.6	ug/Kg
108-88-3	Toluene	6.10	U	0.77	6.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	6.10	U	0.91	6.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	6.10	U	0.87	6.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074040.D	1		08/11/22 14:27	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	6.10	U	1.10	6.10	ug/Kg
591-78-6	2-Hexanone	30.6	U	5.70	30.6	ug/Kg
124-48-1	Dibromochloromethane	6.10	U	0.92	6.10	ug/Kg
106-93-4	1,2-Dibromoethane	6.10	U	0.92	6.10	ug/Kg
127-18-4	Tetrachloroethene	6.10	U	0.93	6.10	ug/Kg
108-90-7	Chlorobenzene	6.10	U	0.80	6.10	ug/Kg
100-41-4	Ethyl Benzene	6.10	U	0.86	6.10	ug/Kg
179601-23-1	m/p-Xylenes	12.3	U	1.80	12.3	ug/Kg
95-47-6	o-Xylene	6.10	U	0.97	6.10	ug/Kg
100-42-5	Styrene	6.10	U	0.97	6.10	ug/Kg
75-25-2	Bromoform	6.10	U	0.99	6.10	ug/Kg
98-82-8	Isopropylbenzene	6.10	U	0.88	6.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	6.10	U	1.40	6.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	6.10	U	0.82	6.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	6.10	U	0.77	6.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	6.10	U	0.78	6.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	6.10	U	1.50	6.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	6.10	U	1.20	6.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	6.10	U	1.20	6.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	66.2		50 - 163	132%	SPK: 50
1868-53-7	Dibromofluoromethane	51.1		54 - 147	102%	SPK: 50
2037-26-5	Toluene-d8	43.1		78 - 125	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	35.3		50 - 146	71%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	102000	7.973			
540-36-3	1,4-Difluorobenzene	179000	8.856			
3114-55-4	Chlorobenzene-d5	146000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	47200	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	17.3	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074040.D	1		08/11/22 14:27	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03RE	SDG No.:	N4130
Lab Sample ID:	N4130-03RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074050.D	1		08/11/22 19:18	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	6.10	UQ	1.00	6.10	ug/Kg
74-87-3	Chloromethane	6.10	U	1.30	6.10	ug/Kg
75-01-4	Vinyl Chloride	6.10	U	1.10	6.10	ug/Kg
74-83-9	Bromomethane	6.10	U	1.40	6.10	ug/Kg
75-00-3	Chloroethane	6.10	U	1.10	6.10	ug/Kg
75-69-4	Trichlorofluoromethane	6.10	U	1.20	6.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	6.10	U	0.88	6.10	ug/Kg
75-35-4	1,1-Dichloroethene	6.10	U	1.00	6.10	ug/Kg
67-64-1	Acetone	30.4	U	14.8	30.4	ug/Kg
75-15-0	Carbon Disulfide	6.10	U	0.91	6.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	6.10	U	1.10	6.10	ug/Kg
79-20-9	Methyl Acetate	6.10	U	1.50	6.10	ug/Kg
75-09-2	Methylene Chloride	12.2	U	7.20	12.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	6.10	U	0.83	6.10	ug/Kg
75-34-3	1,1-Dichloroethane	6.10	U	0.85	6.10	ug/Kg
110-82-7	Cyclohexane	6.10	U	1.00	6.10	ug/Kg
78-93-3	2-Butanone	30.4	U	8.80	30.4	ug/Kg
56-23-5	Carbon Tetrachloride	6.10	U	0.96	6.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	6.10	U	0.83	6.10	ug/Kg
74-97-5	Bromochloromethane	6.10	U	0.98	6.10	ug/Kg
67-66-3	Chloroform	6.10	U	0.81	6.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	6.10	U	0.91	6.10	ug/Kg
108-87-2	Methylcyclohexane	6.10	U	0.97	6.10	ug/Kg
71-43-2	Benzene	6.10	U	0.80	6.10	ug/Kg
107-06-2	1,2-Dichloroethane	6.10	U	1.00	6.10	ug/Kg
79-01-6	Trichloroethene	6.10	U	0.89	6.10	ug/Kg
78-87-5	1,2-Dichloropropane	6.10	U	0.79	6.10	ug/Kg
75-27-4	Bromodichloromethane	6.10	U	0.85	6.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	30.4	U	5.60	30.4	ug/Kg
108-88-3	Toluene	6.10	U	0.77	6.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	6.10	U	0.90	6.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	6.10	U	0.86	6.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03RE	SDG No.:	N4130
Lab Sample ID:	N4130-03RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074050.D	1		08/11/22 19:18	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	6.10	U	1.00	6.10	ug/Kg
591-78-6	2-Hexanone	30.4	U	5.70	30.4	ug/Kg
124-48-1	Dibromochloromethane	6.10	U	0.91	6.10	ug/Kg
106-93-4	1,2-Dibromoethane	6.10	U	0.91	6.10	ug/Kg
127-18-4	Tetrachloroethene	6.10	U	0.92	6.10	ug/Kg
108-90-7	Chlorobenzene	6.10	U	0.79	6.10	ug/Kg
100-41-4	Ethyl Benzene	6.10	U	0.85	6.10	ug/Kg
179601-23-1	m/p-Xylenes	12.2	U	1.80	12.2	ug/Kg
95-47-6	o-Xylene	6.10	U	0.96	6.10	ug/Kg
100-42-5	Styrene	6.10	U	0.96	6.10	ug/Kg
75-25-2	Bromoform	6.10	U	0.98	6.10	ug/Kg
98-82-8	Isopropylbenzene	6.10	U	0.88	6.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	6.10	U	1.40	6.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	6.10	U	0.81	6.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	6.10	U	0.77	6.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	6.10	U	0.78	6.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	6.10	U	1.50	6.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	6.10	U	1.10	6.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	6.10	U	1.20	6.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	72.8		50 - 163	146%	SPK: 50
1868-53-7	Dibromofluoromethane	52.8		54 - 147	106%	SPK: 50
2037-26-5	Toluene-d8	39.4		78 - 125	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	27.2		50 - 146	54%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	90900	7.973			
540-36-3	1,4-Difluorobenzene	162000	8.855			
3114-55-4	Chlorobenzene-d5	121000	11.638			
3855-82-1	1,4-Dichlorobenzene-d4	31200	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03RE	SDG No.:	N4130
Lab Sample ID:	N4130-03RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	18.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074050.D	1		08/11/22 19:18	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074041.D	1		08/11/22 14:56	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	UQ	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.96	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	58.2		12.9	26.4	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.79	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.98	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.5	U	6.30	10.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.4	U	7.70	26.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.83	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.85	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.79	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.84	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.4	U	4.80	26.4	ug/Kg
108-88-3	Toluene	5.30	U	0.66	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074041.D	1		08/11/22 14:56	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.4	U	4.90	26.4	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.79	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.79	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.80	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.5	U	1.60	10.5	ug/Kg
95-47-6	o-Xylene	5.30	U	0.83	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.83	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.85	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.66	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	0.99	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	65.9		50 - 163	132%	SPK: 50
1868-53-7	Dibromofluoromethane	51.3		54 - 147	103%	SPK: 50
2037-26-5	Toluene-d8	45.4		78 - 125	91%	SPK: 50
460-00-4	4-Bromofluorobenzene	39.3		50 - 146	79%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	104000	7.967			
540-36-3	1,4-Difluorobenzene	180000	8.855			
3114-55-4	Chlorobenzene-d5	157000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	58300	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	15.9	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074041.D	1		08/11/22 14:56	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05RE	SDG No.:	N4130
Lab Sample ID:	N4130-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074049.D	1		08/11/22 18:49	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	UQ	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.96	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	250		12.9	26.4	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.79	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.98	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	11.5		6.30	10.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.4	U	7.70	26.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.83	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.79	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.4	U	4.80	26.4	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05RE	SDG No.:	N4130
Lab Sample ID:	N4130-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074049.D	1		08/11/22 18:49	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.4	U	4.90	26.4	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.79	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.79	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.80	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.6	U	1.60	10.6	ug/Kg
95-47-6	o-Xylene	5.30	U	0.83	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.83	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	0.99	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	150	*	50 - 163	297%	SPK: 50
1868-53-7	Dibromofluoromethane	71.6		54 - 147	143%	SPK: 50
2037-26-5	Toluene-d8	48.5		78 - 125	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.4		50 - 146	99%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	16800	7.973			
540-36-3	1,4-Difluorobenzene	31700	8.855			
3114-55-4	Chlorobenzene-d5	34000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	13400	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05RE	SDG No.:	N4130
Lab Sample ID:	N4130-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074049.D	1		08/11/22 18:49	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	22.2
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074042.D	1		08/11/22 15:25	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	6.40	UQ	1.10	6.40	ug/Kg
74-87-3	Chloromethane	6.40	U	1.30	6.40	ug/Kg
75-01-4	Vinyl Chloride	6.40	U	1.20	6.40	ug/Kg
74-83-9	Bromomethane	6.40	U	1.50	6.40	ug/Kg
75-00-3	Chloroethane	6.40	U	1.10	6.40	ug/Kg
75-69-4	Trichlorofluoromethane	6.40	U	1.20	6.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	6.40	U	0.92	6.40	ug/Kg
75-35-4	1,1-Dichloroethene	6.40	U	1.10	6.40	ug/Kg
67-64-1	Acetone	360		15.6	32.1	ug/Kg
75-15-0	Carbon Disulfide	6.40	U	0.96	6.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	6.40	U	1.20	6.40	ug/Kg
79-20-9	Methyl Acetate	6.40	U	1.60	6.40	ug/Kg
75-09-2	Methylene Chloride	11.5	J	7.60	12.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	6.40	U	0.87	6.40	ug/Kg
75-34-3	1,1-Dichloroethane	6.40	U	0.90	6.40	ug/Kg
110-82-7	Cyclohexane	6.40	U	1.10	6.40	ug/Kg
78-93-3	2-Butanone	32.1	U	9.30	32.1	ug/Kg
56-23-5	Carbon Tetrachloride	6.40	U	1.00	6.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	6.40	U	0.87	6.40	ug/Kg
74-97-5	Bromochloromethane	6.40	U	1.00	6.40	ug/Kg
67-66-3	Chloroform	6.40	U	0.86	6.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	6.40	U	0.96	6.40	ug/Kg
108-87-2	Methylcyclohexane	6.40	U	1.00	6.40	ug/Kg
71-43-2	Benzene	6.40	U	0.85	6.40	ug/Kg
107-06-2	1,2-Dichloroethane	6.40	U	1.10	6.40	ug/Kg
79-01-6	Trichloroethene	6.40	U	0.94	6.40	ug/Kg
78-87-5	1,2-Dichloropropane	6.40	U	0.83	6.40	ug/Kg
75-27-4	Bromodichloromethane	6.40	U	0.90	6.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	32.1	U	5.90	32.1	ug/Kg
108-88-3	Toluene	6.40	U	0.81	6.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	6.40	U	0.95	6.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	6.40	U	0.91	6.40	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	22.2
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074042.D	1		08/11/22 15:25	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	6.40	U	1.10	6.40	ug/Kg
591-78-6	2-Hexanone	32.1	U	6.00	32.1	ug/Kg
124-48-1	Dibromochloromethane	6.40	U	0.96	6.40	ug/Kg
106-93-4	1,2-Dibromoethane	6.40	U	0.96	6.40	ug/Kg
127-18-4	Tetrachloroethene	6.40	U	0.97	6.40	ug/Kg
108-90-7	Chlorobenzene	6.40	U	0.83	6.40	ug/Kg
100-41-4	Ethyl Benzene	6.40	U	0.90	6.40	ug/Kg
179601-23-1	m/p-Xylenes	12.8	U	1.90	12.8	ug/Kg
95-47-6	o-Xylene	6.40	U	1.00	6.40	ug/Kg
100-42-5	Styrene	6.40	U	1.00	6.40	ug/Kg
75-25-2	Bromoform	6.40	U	1.00	6.40	ug/Kg
98-82-8	Isopropylbenzene	6.40	U	0.92	6.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	6.40	U	1.40	6.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	6.40	U	0.86	6.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	6.40	U	0.81	6.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	6.40	U	0.82	6.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	6.40	U	1.60	6.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	6.40	U	1.20	6.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	6.40	U	1.30	6.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	140	*	50 - 163	278%	SPK: 50
1868-53-7	Dibromofluoromethane	67.0		54 - 147	134%	SPK: 50
2037-26-5	Toluene-d8	44.0		78 - 125	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.9		50 - 146	86%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	18200	7.967			
540-36-3	1,4-Difluorobenzene	34100	8.855			
3114-55-4	Chlorobenzene-d5	32900	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	11800	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	90.4	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	22.2
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074042.D	1		08/11/22 15:25	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	17
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074043.D	1		08/11/22 15:54	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	6.00	UQ	1.00	6.00	ug/Kg
74-87-3	Chloromethane	6.00	U	1.30	6.00	ug/Kg
75-01-4	Vinyl Chloride	6.00	U	1.10	6.00	ug/Kg
74-83-9	Bromomethane	6.00	U	1.40	6.00	ug/Kg
75-00-3	Chloroethane	6.00	U	1.10	6.00	ug/Kg
75-69-4	Trichlorofluoromethane	6.00	U	1.20	6.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	6.00	U	0.87	6.00	ug/Kg
75-35-4	1,1-Dichloroethene	6.00	U	1.00	6.00	ug/Kg
67-64-1	Acetone	52.9		14.7	30.1	ug/Kg
75-15-0	Carbon Disulfide	6.00	U	0.90	6.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	6.00	U	1.10	6.00	ug/Kg
79-20-9	Methyl Acetate	6.00	U	1.50	6.00	ug/Kg
75-09-2	Methylene Chloride	7.20	J	7.20	12.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	6.00	U	0.82	6.00	ug/Kg
75-34-3	1,1-Dichloroethane	6.00	U	0.84	6.00	ug/Kg
110-82-7	Cyclohexane	6.00	U	1.00	6.00	ug/Kg
78-93-3	2-Butanone	30.1	U	8.80	30.1	ug/Kg
56-23-5	Carbon Tetrachloride	6.00	U	0.95	6.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	6.00	U	0.82	6.00	ug/Kg
74-97-5	Bromochloromethane	6.00	U	0.98	6.00	ug/Kg
67-66-3	Chloroform	6.00	U	0.81	6.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	6.00	U	0.90	6.00	ug/Kg
108-87-2	Methylcyclohexane	6.00	U	0.96	6.00	ug/Kg
71-43-2	Benzene	6.00	U	0.80	6.00	ug/Kg
107-06-2	1,2-Dichloroethane	6.00	U	1.00	6.00	ug/Kg
79-01-6	Trichloroethene	6.00	U	0.88	6.00	ug/Kg
78-87-5	1,2-Dichloropropane	6.00	U	0.78	6.00	ug/Kg
75-27-4	Bromodichloromethane	6.00	U	0.84	6.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	30.1	U	5.50	30.1	ug/Kg
108-88-3	Toluene	6.00	U	0.76	6.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	6.00	U	0.89	6.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	6.00	U	0.86	6.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	17
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074043.D	1		08/11/22 15:54	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	6.00	U	1.00	6.00	ug/Kg
591-78-6	2-Hexanone	30.1	U	5.60	30.1	ug/Kg
124-48-1	Dibromochloromethane	6.00	U	0.90	6.00	ug/Kg
106-93-4	1,2-Dibromoethane	6.00	U	0.90	6.00	ug/Kg
127-18-4	Tetrachloroethene	6.00	U	0.92	6.00	ug/Kg
108-90-7	Chlorobenzene	6.00	U	0.78	6.00	ug/Kg
100-41-4	Ethyl Benzene	6.00	U	0.84	6.00	ug/Kg
179601-23-1	m/p-Xylenes	12.0	U	1.80	12.0	ug/Kg
95-47-6	o-Xylene	6.00	U	0.95	6.00	ug/Kg
100-42-5	Styrene	6.00	U	0.95	6.00	ug/Kg
75-25-2	Bromoform	6.00	U	0.98	6.00	ug/Kg
98-82-8	Isopropylbenzene	6.00	U	0.87	6.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	6.00	U	1.40	6.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	6.00	U	0.81	6.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	6.00	U	0.76	6.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	6.00	U	0.77	6.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	6.00	U	1.50	6.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	6.00	U	1.10	6.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	6.00	U	1.20	6.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	75.0		50 - 163	150%	SPK: 50
1868-53-7	Dibromofluoromethane	56.9		54 - 147	114%	SPK: 50
2037-26-5	Toluene-d8	44.2		78 - 125	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.7		50 - 146	81%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	79700	7.973			
540-36-3	1,4-Difluorobenzene	140000	8.855			
3114-55-4	Chlorobenzene-d5	129000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	50700	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	15.9	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	17
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074043.D	1		08/11/22 15:54	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074044.D	1		08/11/22 16:23	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	UQ	0.96	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.96	5.60	ug/Kg
67-64-1	Acetone	83.7		13.7	28.0	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	7.00	J	6.70	11.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.78	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.94	5.60	ug/Kg
78-93-3	2-Butanone	28.0	U	8.20	28.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.88	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.94	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.78	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.0	U	5.10	28.0	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.79	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074044.D	1		08/11/22 16:23	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.96	5.60	ug/Kg
591-78-6	2-Hexanone	28.0	U	5.20	28.0	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.85	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.78	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.2	U	1.70	11.2	ug/Kg
95-47-6	o-Xylene	5.60	U	0.88	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.88	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	98.6	*	50 - 163	197%	SPK: 50
1868-53-7	Dibromofluoromethane	59.6		54 - 147	119%	SPK: 50
2037-26-5	Toluene-d8	44.5		78 - 125	89%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.2		50 - 146	80%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	55400	7.973			
540-36-3	1,4-Difluorobenzene	104000	8.855			
3114-55-4	Chlorobenzene-d5	94900	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	32700	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	29.3	J		7.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074044.D	1		08/11/22 16:23	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09RE	SDG No.:	N4130
Lab Sample ID:	N4130-11RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074052.D	1		08/11/22 20:16	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	UQ	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	470		13.7	28.2	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	14.7		6.70	11.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.95	5.60	ug/Kg
78-93-3	2-Butanone	28.2	U	8.20	28.2	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.95	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.2	U	5.20	28.2	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09RE	SDG No.:	N4130
Lab Sample ID:	N4130-11RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074052.D	1		08/11/22 20:16	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.2	U	5.30	28.2	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.86	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.3	U	1.70	11.3	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	150	*	50 - 163	298%	SPK: 50
1868-53-7	Dibromofluoromethane	77.4	*	54 - 147	155%	SPK: 50
2037-26-5	Toluene-d8	46.4		78 - 125	93%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.4		50 - 146	93%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	13100	7.967			
540-36-3	1,4-Difluorobenzene	23600	8.85			
3114-55-4	Chlorobenzene-d5	23800	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	9210	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09RE	SDG No.:	N4130
Lab Sample ID:	N4130-11RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074052.D	1		08/11/22 20:16	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074045.D	1		08/11/22 16:52	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	UQ	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.98	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.80	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	110		13.5	27.6	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	11.0	U	6.60	11.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.77	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.6	U	8.00	27.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.87	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.89	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.88	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.81	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.77	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.6	U	5.10	27.6	ug/Kg
108-88-3	Toluene	5.50	U	0.70	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074045.D	1		08/11/22 16:52	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.6	U	5.20	27.6	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.77	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.0	U	1.60	11.0	ug/Kg
95-47-6	o-Xylene	5.50	U	0.87	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.87	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.89	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.80	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	140	*	50 - 163	281%	SPK: 50
1868-53-7	Dibromofluoromethane	68.9		54 - 147	138%	SPK: 50
2037-26-5	Toluene-d8	46.4		78 - 125	93%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.9		50 - 146	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	26100	7.973			
540-36-3	1,4-Difluorobenzene	49100	8.855			
3114-55-4	Chlorobenzene-d5	50000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	20200	13.555			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	51.7	J		7.19	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074045.D	1		08/11/22 16:52	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04RE	SDG No.:	N4130
Lab Sample ID:	N4130-13RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074053.D	1		08/11/22 20:45	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	UQ	0.96	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	0.99	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.80	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.96	5.60	ug/Kg
67-64-1	Acetone	130		13.6	27.8	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.83	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.1	U	6.60	11.1	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.78	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.94	5.60	ug/Kg
78-93-3	2-Butanone	27.8	U	8.10	27.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.88	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.90	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.83	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.89	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.73	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.94	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.81	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.72	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.78	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.8	U	5.10	27.8	ug/Kg
108-88-3	Toluene	5.60	U	0.70	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.82	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.79	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04RE	SDG No.:	N4130
Lab Sample ID:	N4130-13RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074053.D	1		08/11/22 20:45	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.96	5.60	ug/Kg
591-78-6	2-Hexanone	27.8	U	5.20	27.8	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.83	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.83	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.85	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.72	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.78	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.1	U	1.60	11.1	ug/Kg
95-47-6	o-Xylene	5.60	U	0.88	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.88	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.90	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.80	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.70	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.00	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	140	*	50 - 163	278%	SPK: 50
1868-53-7	Dibromofluoromethane	68.9		54 - 147	138%	SPK: 50
2037-26-5	Toluene-d8	43.7		78 - 125	87%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		50 - 146	87%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	24300	7.973			
540-36-3	1,4-Difluorobenzene	46300	8.855			
3114-55-4	Chlorobenzene-d5	46900	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	17900	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
	unknown7.191	41.8	J		7.19	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04RE	SDG No.:	N4130
Lab Sample ID:	N4130-13RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.7
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074053.D	1		08/11/22 20:45	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074046.D	1		08/11/22 17:21	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	UQ	0.92	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.98	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.20	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.95	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.00	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.77	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.92	5.40	ug/Kg
67-64-1	Acetone	70.8		13.1	26.8	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.80	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	7.90	J	6.40	10.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.75	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.90	5.40	ug/Kg
78-93-3	2-Butanone	26.8	U	7.80	26.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.85	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.87	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.72	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.80	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.86	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.71	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.90	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.78	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.75	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.8	U	4.90	26.8	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.79	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.76	5.40	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074046.D	1		08/11/22 17:21	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.92	5.40	ug/Kg
591-78-6	2-Hexanone	26.8	U	5.00	26.8	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.80	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.80	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.81	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.75	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.7	U	1.60	10.7	ug/Kg
95-47-6	o-Xylene	5.40	U	0.85	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.85	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.87	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.77	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.72	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	84.9	*	50 - 163	170%	SPK: 50
1868-53-7	Dibromofluoromethane	54.7		54 - 147	109%	SPK: 50
2037-26-5	Toluene-d8	45.0		78 - 125	90%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.7		50 - 146	89%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	69500	7.973			
540-36-3	1,4-Difluorobenzene	126000	8.855			
3114-55-4	Chlorobenzene-d5	121000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	50500	13.555			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	23.5	J		7.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074046.D	1		08/11/22 17:21	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01RE	SDG No.:	N4130
Lab Sample ID:	N4130-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074054.D	1		08/11/22 21:14	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	UQ	0.94	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.10	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	0.99	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.97	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.94	5.50	ug/Kg
67-64-1	Acetone	330		13.3	27.3	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.82	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.76	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.92	5.50	ug/Kg
78-93-3	2-Butanone	27.3	U	7.90	27.3	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.86	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.88	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.73	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.82	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.87	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.72	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.92	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.71	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.76	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.3	U	5.00	27.3	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.81	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.77	5.50	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01RE	SDG No.:	N4130
Lab Sample ID:	N4130-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074054.D	1		08/11/22 21:14	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.94	5.50	ug/Kg
591-78-6	2-Hexanone	27.3	U	5.10	27.3	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.82	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.82	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.83	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.71	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.76	5.50	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.50	U	0.86	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.86	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.88	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.73	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	160	*	50 - 163	316%	SPK: 50
1868-53-7	Dibromofluoromethane	74.4	*	54 - 147	149%	SPK: 50
2037-26-5	Toluene-d8	44.9		78 - 125	90%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.5		50 - 146	101%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	6430	7.967			
540-36-3	1,4-Difluorobenzene	12100	8.856			
3114-55-4	Chlorobenzene-d5	13000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	5460	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01RE	SDG No.:	N4130
Lab Sample ID:	N4130-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.2
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074054.D	1		08/11/22 21:14	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	Recovery	Qual	Limits Low	Limits High
N4130-01	SB02	1,2-Dichloroethane-d4	50	106	211	*	50	163
		Dibromofluoromethane	50	62.4	125		54	147
		Toluene-d8	50	46.6	93		78	125
		4-Bromofluorobenzene	50	48.8	98		50	146
N4130-03	SB03	1,2-Dichloroethane-d4	50	66.2	132		50	163
		Dibromofluoromethane	50	51.1	102		54	147
		Toluene-d8	50	43.1	86		78	125
		4-Bromofluorobenzene	50	35.3	71		50	146
N4130-03RE	SB03RE	1,2-Dichloroethane-d4	50	72.8	146		50	163
		Dibromofluoromethane	50	52.8	106		54	147
		Toluene-d8	50	39.4	79		78	125
		4-Bromofluorobenzene	50	27.2	54		50	146
N4130-05	SB05	1,2-Dichloroethane-d4	50	65.9	132		50	163
		Dibromofluoromethane	50	51.3	103		54	147
		Toluene-d8	50	45.4	91		78	125
		4-Bromofluorobenzene	50	39.3	79		50	146
N4130-05RE	SB05RE	1,2-Dichloroethane-d4	50	149	297	*	50	163
		Dibromofluoromethane	50	71.6	143		54	147
		Toluene-d8	50	48.5	97		78	125
		4-Bromofluorobenzene	50	49.4	99		50	146
N4130-07	SB06	1,2-Dichloroethane-d4	50	139	278	*	50	163
		Dibromofluoromethane	50	67.0	134		54	147
		Toluene-d8	50	44.0	88		78	125
		4-Bromofluorobenzene	50	42.9	86		50	146
N4130-09	SB07	1,2-Dichloroethane-d4	50	75.0	150		50	163
		Dibromofluoromethane	50	56.9	114		54	147
		Toluene-d8	50	44.2	88		78	125
		4-Bromofluorobenzene	50	40.7	81		50	146
N4130-11	SB09	1,2-Dichloroethane-d4	50	98.5	197	*	50	163
		Dibromofluoromethane	50	59.6	119		54	147
		Toluene-d8	50	44.5	89		78	125
		4-Bromofluorobenzene	50	40.2	80		50	146
N4130-11RE	SB09RE	1,2-Dichloroethane-d4	50	149	298	*	50	163
		Dibromofluoromethane	50	77.4	155	*	54	147
		Toluene-d8	50	46.4	93		78	125
		4-Bromofluorobenzene	50	46.4	93		50	146
N4130-13	SB04	1,2-Dichloroethane-d4	50	140	281	*	50	163
		Dibromofluoromethane	50	68.9	138		54	147
		Toluene-d8	50	46.4	93		78	125
		4-Bromofluorobenzene	50	46.9	94		50	146
N4130-13RE	SB04RE	1,2-Dichloroethane-d4	50	139	278	*	50	163
		Dibromofluoromethane	50	68.9	138		54	147
		Toluene-d8	50	43.7	87		78	125
		4-Bromofluorobenzene	50	43.6	87		50	146
N4130-15	SB01	1,2-Dichloroethane-d4	50	84.9	170	*	50	163
		Dibromofluoromethane	50	54.7	109		54	147
		Toluene-d8	50	45.0	90		78	125
		4-Bromofluorobenzene	50	44.7	89		50	146
N4130-15RE	SB01RE	1,2-Dichloroethane-d4	50	158	316	*	50	163
		Dibromofluoromethane	50	74.4	149	*	54	147
		Toluene-d8	50	44.9	90		78	125
		4-Bromofluorobenzene	50	50.5	101		50	146

Surrogate Summary

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
VD0811SBL01	VD0811SBL01	1,2-Dichloroethane-d4	50	60.2	120	50	163
		Dibromofluoromethane	50	46.4	93	54	147
		Toluene-d8	50	45.0	90	78	125
		4-Bromofluorobenzene	50	44.2	88	50	146
VD0811SBS01	VD0811SBS01	1,2-Dichloroethane-d4	50	53.1	106	50	163
		Dibromofluoromethane	50	46.1	92	54	147
		Toluene-d8	50	46.6	93	78	125
		4-Bromofluorobenzene	50	47.6	95	50	146
VD0811SBSD01	VD0811SBSD01	1,2-Dichloroethane-d4	50	54.0	108	50	163
		Dibromofluoromethane	50	46.1	92	54	147
		Toluene-d8	50	47.0	94	78	125
		4-Bromofluorobenzene	50	48.6	97	50	146

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4130
Client: Louis Berger U.S., Inc., A WSP Company
Analytical Method: SW8260D **Datafile :** VD074037.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0811SBS01	Dichlorodifluoromethane	20	27.4	ug/Kg	137		*	64	136	
	Chloromethane	20	21.1	ug/Kg	106			70	130	
	Vinyl chloride	20	20.7	ug/Kg	104			72	129	
	Bromomethane	20	20.9	ug/Kg	104			58	141	
	Chloroethane	20	20.1	ug/Kg	101			69	130	
	Trichlorofluoromethane	20	21.0	ug/Kg	105			69	134	
	1,1,2-Trichlorotrifluoroethane	20	21.2	ug/Kg	106			81	123	
	1,1-Dichloroethene	20	20.4	ug/Kg	102			79	121	
	Acetone	100	120	ug/Kg	120			60	131	
	Carbon disulfide	20	20.7	ug/Kg	104			60	128	
	Methyl tert-butyl Ether	20	20.7	ug/Kg	104			77	129	
	Methyl Acetate	20	21.0	ug/Kg	105			69	149	
	Methylene Chloride	20	25.2	ug/Kg	126			49	160	
	trans-1,2-Dichloroethene	20	20.4	ug/Kg	102			80	123	
	1,1-Dichloroethane	20	20.6	ug/Kg	103			82	123	
	Cyclohexane	20	19.5	ug/Kg	98			76	122	
	2-Butanone	100	110	ug/Kg	110			69	131	
	Carbon Tetrachloride	20	20.0	ug/Kg	100			76	129	
	cis-1,2-Dichloroethene	20	20.9	ug/Kg	104			82	123	
	Bromochloromethane	20	19.3	ug/Kg	97			62	134	
	Chloroform	20	20.1	ug/Kg	101			82	125	
	1,1,1-Trichloroethane	20	20.6	ug/Kg	103			80	126	
	Methylcyclohexane	20	19.0	ug/Kg	95			77	123	
	Benzene	20	20.9	ug/Kg	104			84	121	
	1,2-Dichloroethane	20	20.6	ug/Kg	103			81	126	
	Trichloroethene	20	20.0	ug/Kg	100			83	122	
	1,2-Dichloropropane	20	21.1	ug/Kg	106			83	122	
	Bromodichloromethane	20	20.4	ug/Kg	102			82	123	
	4-Methyl-2-Pentanone	100	100	ug/Kg	100			70	135	
	Toluene	20	19.7	ug/Kg	99			83	122	
	t-1,3-Dichloropropene	20	20.0	ug/Kg	100			78	124	
	cis-1,3-Dichloropropene	20	20.3	ug/Kg	102			81	122	
	1,1,2-Trichloroethane	20	20.5	ug/Kg	103			82	125	
	2-Hexanone	100	100	ug/Kg	100			66	138	
	Dibromochloromethane	20	19.5	ug/Kg	98			79	125	
	1,2-Dibromoethane	20	20.6	ug/Kg	103			80	125	
	Tetrachloroethene	20	20.5	ug/Kg	103			83	125	
	Chlorobenzene	20	20.8	ug/Kg	104			84	122	
	Ethyl Benzene	20	20.1	ug/Kg	101			82	124	
	m/p-Xylenes	40	40.9	ug/Kg	102			83	124	
	o-Xylene	20	19.3	ug/Kg	97			83	123	
	Styrene	20	20.6	ug/Kg	103			82	124	
	Bromoform	20	20.7	ug/Kg	104			75	127	
	Isopropylbenzene	20	20.2	ug/Kg	101			82	124	
	1,1,2,2-Tetrachloroethane	20	20.8	ug/Kg	104			77	127	
	1,3-Dichlorobenzene	20	20.5	ug/Kg	103			83	122	
	1,4-Dichlorobenzene	20	20.1	ug/Kg	101			84	121	
	1,2-Dichlorobenzene	20	20.4	ug/Kg	102			83	124	
	1,2-Dibromo-3-Chloropropane	20	22.1	ug/Kg	111			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074037.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0811SBS01	1,2,4-Trichlorobenzene	20	20.2	ug/Kg	101			78	127	
	1,2,3-Trichlorobenzene	20	21.2	ug/Kg	106			70	137	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074039.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0811SBSD01	Dichlorodifluoromethane	20	27.5	ug/Kg	138	1	*	64	136	20
	Chloromethane	20	21.1	ug/Kg	106	0		70	130	20
	Vinyl chloride	20	21.0	ug/Kg	105	1		72	129	20
	Bromomethane	20	20.9	ug/Kg	104	0		58	141	20
	Chloroethane	20	21.7	ug/Kg	109	8		69	130	20
	Trichlorofluoromethane	20	21.0	ug/Kg	105	0		69	134	20
	1,1,2-Trichlorotrifluoroethane	20	21.1	ug/Kg	106	0		81	123	20
	1,1-Dichloroethene	20	21.1	ug/Kg	106	4		79	121	20
	Acetone	100	110	ug/Kg	110	9		60	131	20
	Carbon disulfide	20	20.9	ug/Kg	104	0		60	128	20
	Methyl tert-butyl Ether	20	21.2	ug/Kg	106	2		77	129	20
	Methyl Acetate	20	22.4	ug/Kg	112	6		69	149	20
	Methylene Chloride	20	30.3	ug/Kg	152	19		49	160	20
	trans-1,2-Dichloroethene	20	20.0	ug/Kg	100	2		80	123	20
	1,1-Dichloroethane	20	20.2	ug/Kg	101	2		82	123	20
	Cyclohexane	20	19.2	ug/Kg	96	2		76	122	20
	2-Butanone	100	110	ug/Kg	110	0		69	131	20
	Carbon Tetrachloride	20	20.1	ug/Kg	101	1		76	129	20
	cis-1,2-Dichloroethene	20	20.6	ug/Kg	103	1		82	123	20
	Bromochloromethane	20	19.7	ug/Kg	99	2		62	134	20
	Chloroform	20	20.9	ug/Kg	104	3		82	125	20
	1,1,1-Trichloroethane	20	20.2	ug/Kg	101	2		80	126	20
	Methylcyclohexane	20	19.4	ug/Kg	97	2		77	123	20
	Benzene	20	20.8	ug/Kg	104	0		84	121	20
	1,2-Dichloroethane	20	20.7	ug/Kg	104	1		81	126	20
	Trichloroethene	20	20.6	ug/Kg	103	3		83	122	20
	1,2-Dichloropropane	20	20.5	ug/Kg	103	3		83	122	20
	Bromodichloromethane	20	20.5	ug/Kg	103	1		82	123	20
	4-Methyl-2-Pentanone	100	110	ug/Kg	110	10		70	135	20
	Toluene	20	20.4	ug/Kg	102	3		83	122	20
	t-1,3-Dichloropropene	20	20.6	ug/Kg	103	3		78	124	20
	cis-1,3-Dichloropropene	20	21.0	ug/Kg	105	3		81	122	20
	1,1,2-Trichloroethane	20	20.7	ug/Kg	104	1		82	125	20
	2-Hexanone	100	110	ug/Kg	110	10		66	138	20
	Dibromochloromethane	20	20.4	ug/Kg	102	4		79	125	20
	1,2-Dibromoethane	20	21.2	ug/Kg	106	3		80	125	20
	Tetrachloroethene	20	19.5	ug/Kg	98	5		83	125	20
	Chlorobenzene	20	19.9	ug/Kg	100	4		84	122	20
	Ethyl Benzene	20	19.0	ug/Kg	95	6		82	124	20
	m/p-Xylenes	40	38.6	ug/Kg	97	5		83	124	20
	o-Xylene	20	19.2	ug/Kg	96	1		83	123	20
	Styrene	20	20.1	ug/Kg	101	2		82	124	20
	Bromoform	20	20.3	ug/Kg	102	2		75	127	20
	Isopropylbenzene	20	19.7	ug/Kg	99	2		82	124	20
	1,1,2,2-Tetrachloroethane	20	21.3	ug/Kg	106	2		77	127	20
	1,3-Dichlorobenzene	20	20.7	ug/Kg	104	1		83	122	20
	1,4-Dichlorobenzene	20	20.3	ug/Kg	102	1		84	121	20
	1,2-Dichlorobenzene	20	21.4	ug/Kg	107	5		83	124	20
	1,2-Dibromo-3-Chloropropane	20	20.2	ug/Kg	101	9		66	134	20

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074039.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0811SBSD01	1,2,4-Trichlorobenzene	20	20.3	ug/Kg	102	1		78	127	20
	1,2,3-Trichlorobenzene	20	20.4	ug/Kg	102	4		70	137	20

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0811SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: VD074036.D Lab Sample ID: VD0811SBL01

Date Analyzed: 08/11/2022 Time Analyzed: 12:32

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0811SBS01	VD0811SBS01	VD074037.D	08/11/2022
SB02	N4130-01	VD074038.D	08/11/2022
VD0811SBSD01	VD0811SBSD01	VD074039.D	08/11/2022
SB03	N4130-03	VD074040.D	08/11/2022
SB05	N4130-05	VD074041.D	08/11/2022
SB06	N4130-07	VD074042.D	08/11/2022
SB07	N4130-09	VD074043.D	08/11/2022
SB09	N4130-11	VD074044.D	08/11/2022
SB04	N4130-13	VD074045.D	08/11/2022
SB01	N4130-15	VD074046.D	08/11/2022
SB05RE	N4130-05RE	VD074049.D	08/11/2022
SB03RE	N4130-03RE	VD074050.D	08/11/2022
SB09RE	N4130-11RE	VD074052.D	08/11/2022
SB04RE	N4130-13RE	VD074053.D	08/11/2022
SB01RE	N4130-15RE	VD074054.D	08/11/2022

COMMENTS:

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: VD074016.D BFB Injection Date: 08/10/2022

Instrument ID: MSVOA_D BFB Injection Time: 09:10

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	57.1
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	1.3 (1.6) 1
174	50.0 - 100.0% of mass 95	82.7
175	5.0 - 9.0% of mass 174	6.8 (8.3) 1
176	95.0 - 101.0% of mass 174	78.8 (95.3) 1
177	5.0 - 9.0% of mass 176	5.1 (6.5) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VD074017.D	08/10/2022	10:27
VSTDICC010	VSTDICC010	VD074018.D	08/10/2022	11:08
VSTDICC020	VSTDICC020	VD074019.D	08/10/2022	11:37
VSTDICCC050	VSTDICCC050	VD074020.D	08/10/2022	12:06
VSTDICC075	VSTDICC075	VD074021.D	08/10/2022	12:35
VSTDICC100	VSTDICC100	VD074022.D	08/10/2022	13:04

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: VD074034.D BFB Injection Date: 08/11/2022

Instrument ID: MSVOA_D BFB Injection Time: 09:41

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.4
75	30.0 - 60.0% of mass 95	54.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	1.4 (1.8) 1
174	50.0 - 100.0% of mass 95	79.3
175	5.0 - 9.0% of mass 174	6.6 (8.4) 1
176	95.0 - 101.0% of mass 174	78.6 (99.1) 1
177	5.0 - 9.0% of mass 176	5.3 (6.7) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VD074035.D	08/11/2022	10:55
VD0811SBL01	VD0811SBL01	VD074036.D	08/11/2022	12:32
VD0811SBS01	VD0811SBS01	VD074037.D	08/11/2022	13:01
SB02	N4130-01	VD074038.D	08/11/2022	13:29
VD0811SBSD01	VD0811SBSD01	VD074039.D	08/11/2022	13:58
SB03	N4130-03	VD074040.D	08/11/2022	14:27
SB05	N4130-05	VD074041.D	08/11/2022	14:56
SB06	N4130-07	VD074042.D	08/11/2022	15:25
SB07	N4130-09	VD074043.D	08/11/2022	15:54
SB09	N4130-11	VD074044.D	08/11/2022	16:23
SB04	N4130-13	VD074045.D	08/11/2022	16:52
SB01	N4130-15	VD074046.D	08/11/2022	17:21
SB05RE	N4130-05RE	VD074049.D	08/11/2022	18:49
SB03RE	N4130-03RE	VD074050.D	08/11/2022	19:18
SB09RE	N4130-11RE	VD074052.D	08/11/2022	20:16
SB04RE	N4130-13RE	VD074053.D	08/11/2022	20:45
SB01RE	N4130-15RE	VD074054.D	08/11/2022	21:14

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: VD074035.D Date Analyzed: 08/11/2022

Instrument ID: MSVOA_D Time Analyzed: 10:55

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #		RT #	IS2 AREA #		RT #	IS3 AREA #		RT #
12 HOUR STD	166074		7.97	264022		8.86	246658		11.63
UPPER LIMIT	332148		8.467	528044		9.355	493316		12.132
LOWER LIMIT	83037		7.467	132011		8.355	123329		11.132
EPA SAMPLE NO.									
SB02	46733	*	7.97	86397	*	8.86	84057	*	11.63
SB03	101804		7.97	178700		8.86	145969		11.63
SB03RE	90878		7.97	162454		8.86	121029	*	11.64
SB05	104309		7.97	179767		8.86	156999		11.63
SB05RE	16787	*	7.97	31726	*	8.86	33974	*	11.63
SB06	18245	*	7.97	34131	*	8.86	32900	*	11.63
SB07	79711	*	7.97	140268		8.86	128777		11.63
SB09	55440	*	7.97	103741	*	8.86	94915	*	11.63
SB09RE	13092	*	7.97	23637	*	8.85	23833	*	11.63
SB04	26118	*	7.97	49067	*	8.86	50009	*	11.63
SB04RE	24254	*	7.97	46286	*	8.86	46869	*	11.63
SB01	69504	*	7.97	125505	*	8.86	121049	*	11.63
SB01RE	6431	*	7.97	12062	*	8.86	13040	*	11.63
VD0811SBL01	136142		7.97	236884		8.86	213748		11.63
VD0811SBS01	142814		7.97	233694		8.86	213696		11.63
VD0811SBSD01	140400		7.97	228606		8.86	218275		11.63

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: VD074035.D Date Analyzed: 08/11/2022

Instrument ID: MSVOA_D Time Analyzed: 10:55

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #		RT #				
12 HOUR STD	129407		13.555				
UPPER LIMIT	258814		14.055				
LOWER LIMIT	64703.5		13.055				
EPA SAMPLE NO.							
SB02	37153	*	13.56				
SB03	47167	*	13.56				
SB03RE	31243	*	13.56				
SB05	58317	*	13.56				
SB05RE	13389	*	13.56				
SB06	11761	*	13.56				
SB07	50666	*	13.56				
SB09	32744	*	13.56				
SB09RE	9206	*	13.56				
SB04	20232	*	13.56				
SB04RE	17884	*	13.56				
SB01	50514	*	13.56				
SB01RE	5461	*	13.56				
VD0811SBL01	94869		13.56				
VD0811SBS01	110099		13.56				
VD0811SBSD01	107898		13.56				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBL01	SDG No.:	N4130
Lab Sample ID:	VD0811SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074036.D	1		08/11/22 12:32	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBL01	SDG No.:	N4130
Lab Sample ID:	VD0811SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074036.D	1		08/11/22 12:32	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	60.2		50 - 163	120%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		54 - 147	93%	SPK: 50
2037-26-5	Toluene-d8	45.0		78 - 125	90%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.2		50 - 146	88%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	136000	7.973			
540-36-3	1,4-Difluorobenzene	237000	8.855			
3114-55-4	Chlorobenzene-d5	214000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	94900	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
002916-68-9	Ethanol, 2-(trimethylsilyl)-	10.3	J		7.19	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBL01	SDG No.:	N4130
Lab Sample ID:	VD0811SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074036.D	1		08/11/22 12:32	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBS01	SDG No.:	N4130
Lab Sample ID:	VD0811SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074037.D	1		08/11/22 13:01	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	27.4		0.86	5.00	ug/Kg
74-87-3	Chloromethane	21.1		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	20.7		0.91	5.00	ug/Kg
74-83-9	Bromomethane	20.9		1.20	5.00	ug/Kg
75-00-3	Chloroethane	20.1		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	21.0		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	21.2		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	20.4		0.86	5.00	ug/Kg
67-64-1	Acetone	120		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	20.7		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	20.7		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	21.0		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	25.2		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	20.4		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	20.6		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	19.5		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.0		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	20.9		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	19.3		0.81	5.00	ug/Kg
67-66-3	Chloroform	20.1		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	20.6		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	19.0		0.80	5.00	ug/Kg
71-43-2	Benzene	20.9		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	20.6		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	20.0		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	21.1		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	20.4		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	100		4.60	25.0	ug/Kg
108-88-3	Toluene	19.7		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.0		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.3		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBS01	SDG No.:	N4130
Lab Sample ID:	VD0811SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074037.D	1		08/11/22 13:01	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	20.5		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	100		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	19.5		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	20.6		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	20.5		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	20.8		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.1		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	40.9		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.3		0.79	5.00	ug/Kg
100-42-5	Styrene	20.6		0.79	5.00	ug/Kg
75-25-2	Bromoform	20.7		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.2		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	20.8		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.5		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.1		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.4		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	22.1		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	20.2		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	21.2		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	53.1		50 - 163	106%	SPK: 50
1868-53-7	Dibromofluoromethane	46.1		54 - 147	92%	SPK: 50
2037-26-5	Toluene-d8	46.6		78 - 125	93%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.6		50 - 146	95%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	143000	7.967			
540-36-3	1,4-Difluorobenzene	234000	8.855			
3114-55-4	Chlorobenzene-d5	214000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	110000	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBS01	SDG No.:	N4130
Lab Sample ID:	VD0811SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074037.D	1		08/11/22 13:01	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBSD01	SDG No.:	N4130
Lab Sample ID:	VD0811SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074039.D	1		08/11/22 13:58	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	27.5		0.86	5.00	ug/Kg
74-87-3	Chloromethane	21.1		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	21.0		0.91	5.00	ug/Kg
74-83-9	Bromomethane	20.9		1.20	5.00	ug/Kg
75-00-3	Chloroethane	21.7		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	21.0		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	21.1		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.1		0.86	5.00	ug/Kg
67-64-1	Acetone	110		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	20.9		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	21.2		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	22.4		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	30.3		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	20.0		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	20.2		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	19.2		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.1		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	20.6		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	19.7		0.81	5.00	ug/Kg
67-66-3	Chloroform	20.9		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	20.2		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	19.4		0.80	5.00	ug/Kg
71-43-2	Benzene	20.8		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	20.7		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	20.6		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	20.5		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	20.5		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		4.60	25.0	ug/Kg
108-88-3	Toluene	20.4		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.6		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	21.0		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBSD01	SDG No.:	N4130
Lab Sample ID:	VD0811SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074039.D	1		08/11/22 13:58	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	20.7		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	110		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	20.4		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	21.2		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	19.5		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	19.9		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	19.0		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	38.6		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.2		0.79	5.00	ug/Kg
100-42-5	Styrene	20.1		0.79	5.00	ug/Kg
75-25-2	Bromoform	20.3		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	19.7		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	21.3		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.7		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.3		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	21.4		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	20.2		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	20.3		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	20.4		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	53.9		50 - 163	108%	SPK: 50
1868-53-7	Dibromofluoromethane	46.1		54 - 147	92%	SPK: 50
2037-26-5	Toluene-d8	47.1		78 - 125	94%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.7		50 - 146	97%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	140000	7.967			
540-36-3	1,4-Difluorobenzene	229000	8.855			
3114-55-4	Chlorobenzene-d5	218000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	108000	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0811SBSD01	SDG No.:	N4130
Lab Sample ID:	VD0811SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074039.D	1		08/11/22 13:58	VD081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: MSVOA_D Calibration Date(s): 08/10/2022 08/10/2022

Heated Purge: (Y/N) Y Calibration Time(s): 10:27 13:04

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074017.D RRF010 = VD074018.D RRF020 = VD074019.D
RRF050 = VD074020.D RRF075 = VD074021.D RRF100 = VD074022.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.570	0.595	0.581	0.440	0.417	0.418	0.503	17.3
Chloromethane	0.935	0.924	0.837	0.693	0.660	0.635	0.781	17.3
Vinyl Chloride	1.164	1.218	1.114	1.018	0.938	0.932	1.064	11.2
Bromomethane	0.806	0.761	0.753	0.702	0.680	0.697	0.733	6.6
Chloroethane	0.884	0.839	0.824	0.710	0.672	0.640	0.762	13.2
Trichlorofluoromethane	1.159	1.157	1.049	0.952	0.886	0.875	1.013	12.7
1,1,2-Trichlorotrifluoroethane	0.692	0.645	0.584	0.547	0.508	0.500	0.580	13.2
1,1-Dichloroethene	0.542	0.508	0.515	0.493	0.465	0.477	0.500	5.5
Acetone	0.094	0.094	0.079	0.071	0.076	0.066	0.080	14.9
Carbon Disulfide	1.789	1.779	1.666	1.558	1.468	1.468	1.621	9
Methyl tert-butyl Ether	1.061	1.114	1.143	1.121	1.113	1.134	1.114	2.6
Methyl Acetate	0.347	0.266	0.254	0.226	0.219	0.221	0.256	19.1
Methylene Chloride	0.766	0.622	0.608	0.546	0.513	0.518	0.596	15.9
trans-1,2-Dichloroethene	0.669	0.643	0.580	0.587	0.558	0.565	0.600	7.5
1,1-Dichloroethane	1.107	1.059	1.011	0.944	0.905	0.916	0.990	8.3
Cyclohexane	1.074	0.935	0.847	0.823	0.794	0.793	0.878	12.5
2-Butanone	0.139	0.133	0.125	0.115	0.122	0.117	0.125	7.6
Carbon Tetrachloride	0.569	0.582	0.569	0.590	0.550	0.558	0.570	2.5
cis-1,2-Dichloroethene	0.683	0.657	0.632	0.638	0.615	0.626	0.642	3.8
Bromochloromethane	0.397	0.424	0.384	0.369	0.356	0.363	0.382	6.6
Chloroform	1.251	1.184	1.119	1.101	1.048	1.032	1.123	7.4
1,1,1-Trichloroethane	1.205	1.130	1.059	1.030	0.985	0.998	1.068	8
Methylcyclohexane	0.537	0.548	0.559	0.609	0.586	0.601	0.573	5.2
Benzene	1.373	1.377	1.354	1.392	1.340	1.383	1.370	1.4
1,2-Dichloroethane	0.455	0.436	0.414	0.428	0.399	0.401	0.422	5.1
Trichloroethene	0.431	0.425	0.387	0.401	0.384	0.390	0.403	5
1,2-Dichloropropane	0.327	0.356	0.325	0.333	0.312	0.326	0.330	4.5
Bromodichloromethane	0.564	0.526	0.519	0.533	0.509	0.518	0.528	3.6
4-Methyl-2-Pentanone	0.160	0.172	0.179	0.182	0.180	0.184	0.176	5
Toluene	0.862	0.878	0.886	0.962	0.926	0.973	0.914	5.1
t-1,3-Dichloropropene	0.399	0.472	0.431	0.478	0.468	0.484	0.455	7.3
cis-1,3-Dichloropropene	0.485	0.510	0.521	0.558	0.541	0.543	0.526	5
1,1,2-Trichloroethane	0.289	0.268	0.264	0.273	0.257	0.269	0.270	4

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: MSVOA_D Calibration Date(s): 08/10/2022 08/10/2022

Heated Purge: (Y/N) Y Calibration Time(s): 10:27 13:04

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074017.D RRF010 = VD074018.D RRF020 = VD074019.D
RRF050 = VD074020.D RRF075 = VD074021.D RRF100 = VD074022.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
2-Hexanone	0.104	0.110	0.121	0.123	0.125	0.126	0.118	7.6
Dibromochloromethane	0.359	0.362	0.366	0.370	0.359	0.377	0.365	2
1,2-Dibromoethane	0.282	0.270	0.266	0.277	0.267	0.273	0.273	2.3
Tetrachloroethene	0.423	0.386	0.375	0.365	0.346	0.353	0.375	7.4
Chlorobenzene	1.110	1.086	1.040	1.053	1.041	1.072	1.067	2.6
Ethyl Benzene	1.705	1.757	1.804	1.943	1.935	2.008	1.859	6.5
m/p-Xylenes	0.634	0.705	0.717	0.787	0.791	0.821	0.742	9.4
o-Xylene	0.589	0.640	0.652	0.721	0.716	0.761	0.680	9.3
Styrene	0.947	1.023	1.118	1.246	1.266	1.309	1.151	12.7
Bromoform	0.211	0.222	0.224	0.224	0.223	0.235	0.223	3.5
Isopropylbenzene	3.254	3.367	3.363	3.656	3.591	3.625	3.476	4.8
1,1,2,2-Tetrachloroethane	0.711	0.675	0.619	0.603	0.591	0.588	0.631	8
1,3-Dichlorobenzene	1.744	1.733	1.704	1.790	1.743	1.742	1.743	1.6
1,4-Dichlorobenzene	1.866	1.847	1.675	1.758	1.673	1.698	1.753	4.9
1,2-Dichlorobenzene	1.496	1.530	1.510	1.519	1.468	1.458	1.497	1.9
1,2-Dibromo-3-Chloropropane	0.136	0.125	0.099	0.094	0.102	0.096	0.109	15.9
1,2,4-Trichlorobenzene	0.868	0.902	0.838	0.885	0.874	0.891	0.876	2.5
1,2,3-Trichlorobenzene	0.740	0.795	0.769	0.780	0.759	0.780	0.771	2.5
1,2-Dichloroethane-d4	0.666	0.626	0.563	0.397	0.367	0.366	0.497	27.5
Dibromofluoromethane	0.397	0.369	0.361	0.299	0.284	0.282	0.332	14.9
Toluene-d8	1.198	1.227	1.260	0.841	0.823	0.826	1.029	21.3
4-Bromofluorobenzene	0.415	0.399	0.418	0.413	0.401	0.404	0.408	2

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: MSVOA_D Calibration Date/Time: 08/11/2022 10:55

Lab File ID: VD074035.D Init. Calib. Date(s): 08/10/2022 08/10/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 10:27 13:04

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.503	0.424		-15.71	20
Chloromethane	0.781	0.646	0.1	-17.29	20
Vinyl Chloride	1.064	0.898		-15.6	20
Bromomethane	0.733	0.609		-16.92	20
Chloroethane	0.762	0.650		-14.7	20
Trichlorofluoromethane	1.013	0.945		-6.71	20
1,1,2-Trichlorotrifluoroethane	0.580	0.535		-7.76	20
1,1-Dichloroethene	0.500	0.483		-3.4	20
Acetone	0.080	0.094		17.5	20
Carbon Disulfide	1.621	1.487		-8.27	20
Methyl tert-butyl Ether	1.114	1.160		4.13	20
Methyl Acetate	0.256	0.235		-8.2	20
Methylene Chloride	0.596	0.624		4.7	20
trans-1,2-Dichloroethene	0.600	0.584		-2.67	20
1,1-Dichloroethane	0.990	0.949	0.1	-4.14	20
Cyclohexane	0.878	0.804		-8.43	20
2-Butanone	0.125	0.130		4	20
Carbon Tetrachloride	0.570	0.578		1.4	20
cis-1,2-Dichloroethene	0.642	0.631		-1.71	20
Bromochloromethane	0.382	0.368		-3.66	20
Chloroform	1.123	1.073		-4.45	20
1,1,1-Trichloroethane	1.068	1.018		-4.68	20
Methylcyclohexane	0.573	0.585		2.09	20
Benzene	1.370	1.370		0	20
1,2-Dichloroethane	0.422	0.414		-1.9	20
Trichloroethene	0.403	0.400		-0.74	20
1,2-Dichloropropane	0.330	0.326		-1.21	20
Bromodichloromethane	0.528	0.524		-0.76	20
4-Methyl-2-Pentanone	0.176	0.183		3.98	20
Toluene	0.914	0.923		0.99	20
t-1,3-Dichloropropene	0.455	0.472		3.74	20
cis-1,3-Dichloropropene	0.526	0.542		3.04	20
1,1,2-Trichloroethane	0.270	0.269		-0.37	20
2-Hexanone	0.118	0.131		11.02	20
Dibromochloromethane	0.365	0.368		0.82	20
1,2-Dibromoethane	0.273	0.269		-1.47	20
Tetrachloroethene	0.375	0.363		-3.2	20
Chlorobenzene	1.067	1.057	0.3	-0.94	20
Ethyl Benzene	1.859	1.914		2.96	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: MSVOA_D Calibration Date/Time: 08/11/2022 10:55

Lab File ID: VD074035.D Init. Calib. Date(s): 08/10/2022 08/10/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 10:27 13:04

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.742	0.779		4.99	20
o-Xylene	0.680	0.718		5.59	20
Styrene	1.151	1.248		8.43	20
Bromoform	0.223	0.234	0.1	4.93	20
Isopropylbenzene	3.476	3.631		4.46	20
1,1,2,2-Tetrachloroethane	0.631	0.617	0.3	-2.22	20
1,3-Dichlorobenzene	1.743	1.807		3.67	20
1,4-Dichlorobenzene	1.753	1.762		0.51	20
1,2-Dichlorobenzene	1.497	1.542		3.01	20
1,2-Dibromo-3-Chloropropane	0.109	0.104		-4.59	20
1,2,4-Trichlorobenzene	0.876	0.925		5.59	20
1,2,3-Trichlorobenzene	0.771	0.812		5.32	20
1,2-Dichloroethane-d4	0.497	0.382		-23.14	20
Dibromofluoromethane	0.332	0.299		-9.94	20
Toluene-d8	1.029	0.827		-19.63	20
4-Bromofluorobenzene	0.408	0.401		-1.72	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-03	**SB03**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-05	**SB05**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-07	**SB06**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-09	**SB07**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-11	**SB09**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/12/22	
N4130-13	**SB04**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/11/22	08/12/22	
N4130-15	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-15RE	**SB01RE**	**SOIL**			**08/09/22**			**08/09/22**
			Gasoline Range Organics	8015D			08/12/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027892.D	1	08/11/22 11:14	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	10.0	J	4.00	52.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	9.77	*	50 - 150	49%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	18.7 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027904.D	1	08/11/22 19:51	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	23.0	J	4.00	54.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	14.9		50 - 150	75%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027897.D	1	08/11/22 14:27	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	12.0	J	4.00	48.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.3		50 - 150	66%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	22.2 Decanted:
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027912.D	50	08/12/22 2:01	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	2030	J	229	2850	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	21.3		50 - 150	107%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	17 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027900.D	1	08/11/22 17:23	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	12.0	J	4.00	54.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	16.9		50 - 150	84%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	11.4 Decanted:
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027914.D	50	08/12/22 8:30	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	961	J	202	2510	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.6		50 - 150	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	10.7 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027916.D	50	08/12/22 9:45	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	868	J	201	2510	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.5		50 - 150	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.2 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027903.D	1	08/11/22 19:14	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	9.00	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	7.33	*	50 - 150	37%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01RE	SDG No.:	N4130
Lab Sample ID:	N4130-15RE	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.2 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027910.D	1	08/12/22 0:47	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	11.0	J	4.00	48.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	1.34	*	50 - 150	7%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

EPA SAMPLE NO.	S1 AAA-TFT	S2	S3	S4	TOT OUT
VBF0811S1	91				0
VBF0811S2	113				0
BSF0811S1	106				0
SB02	49 *				1
SB02MS	59				0
SB02MSD	41 *				1
SB05	66				0
SB07	84				0
SB01	37 *				1
SB03	75				0
SB01RE	7 *				1
SB06	107				0
SB09	93				0
SB04	97				0

	QC LIMITS
AAA-TFT	For Water : 50-150 For Soil : 50-150

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Client SampleID : SB02MS **Datafile:** FB027894.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	208	10.0	185	84%		50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Client SampleID : SB02MSD **Datafile:** FB027895.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	206	10.0	201	93%		50-150

MS/MSD % Recovery RPD : 9.7

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATI

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Matrix Spike - EPA Sample No : BSF0810S1 **Datafile:** FB027891.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
GRO	180	0	162	90	50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0811S2

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: FB027890.D Lab Sample ID: VBF0811S2

Date Analyzed: 08/11/22 Time Analyzed: 10:00

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB06	N4130-07	FB027912.D	08/12/22
SB09	N4130-11	FB027914.D	08/12/22
SB04	N4130-13	FB027916.D	08/12/22

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0811S1

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: FB027889.D Lab Sample ID: VBF0811S1

Date Analyzed: 08/11/22 Time Analyzed: 9:24

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
BSF0811S1	BSF0811S1	FB027891.D	08/11/22
SB02	N4130-01	FB027892.D	08/11/22
SB02MS	N4130-01MS	FB027894.D	08/11/22
SB02MSD	N4130-01MSD	FB027895.D	08/11/22
SB05	N4130-05	FB027897.D	08/11/22
SB07	N4130-09	FB027900.D	08/11/22
SB01	N4130-15	FB027903.D	08/11/22
SB03	N4130-03	FB027904.D	08/11/22
SB01RE	N4130-15RE	FB027910.D	08/12/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0811S1	SDG No.:	N4130
Lab Sample ID:	VBF0811S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027889.D	1	08/11/22 9:24	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	45.0	U	4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.1		50 - 150	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0811S2	SDG No.:	N4130
Lab Sample ID:	VBF0811S2	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027890.D	50	08/11/22 10:00	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	2250	U	181	2250	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	22.6		50 - 150	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	BSF0811S1	SDG No.:	N4130
Lab Sample ID:	BSF0811S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027891.D	1	08/11/22 10:37	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	162		4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	21.3		50 - 150	106%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02MS	SDG No.:	N4130
Lab Sample ID:	N4130-01MS	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027894.D	1	08/11/22 12:34	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	185		4.00	52.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	11.9		50 - 150	59%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02MSD	SDG No.:	N4130
Lab Sample ID:	N4130-01MSD	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027895.D	1	08/11/22 13:11	FB081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	201		4.00	51.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	8.27	*	50 - 150	41%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Calibration Sequence : FB080922		Test : Gasoline Range Organics	
Concentration (PPB)	**Area Count**	**Reference Factor**	**File ID**
45	797213	17716	FB027882.D
90	1841782	20464	FB027883.D
180	3821591	21231	FB027884.D
450	8535867	18969	FB027885.D
900	19847181	22052	FB027886.D

AVG RF : 20086 **% RSD : 8.689** **AVG RT : 8.7968**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FB027888.D Analyst Name: AJ/MA Analyst Date: 08-11-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3529108	19606	20086	2.39

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FB027899.D Analyst Name: AJ/MA Analyst Date: 08-11-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3391104	18839	20086	6.208

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FB027909.D Analyst Name: AJ/MA Analyst Date: 08-11-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3773937	20966	20086	4.381

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FB027915.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3342647	18570	20086	7.548

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FB027918.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3253396	18074	20086	10.017

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI **Instrument ID:** FID_B

GC Column: RTX-502.2 **ID:** 0.53 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **8.7968**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
20 PPB GRO STD	20 PPB GRO STD	11 Aug 2022 8:46	FB027888.D	8.789	
VBF0811S1	VBF0811S1	11 Aug 2022 9:24	FB027889.D	8.792	
VBF0811S2	VBF0811S2	11 Aug 2022 10:00	FB027890.D	8.793	
BSF0811S1	BSF0811S1	11 Aug 2022 10:37	FB027891.D	8.794	
SB02	N4130-01	11 Aug 2022 11:14	FB027892.D	8.796	
SB02MS	N4130-01MS	11 Aug 2022 12:34	FB027894.D	8.794	
SB02MSD	N4130-01MSD	11 Aug 2022 13:11	FB027895.D	8.795	
SB05	N4130-05	11 Aug 2022 14:27	FB027897.D	8.797	
20 PPB GRO STD	20 PPB GRO STD	11 Aug 2022 16:09	FB027899.D	8.795	
SB07	N4130-09	11 Aug 2022 17:23	FB027900.D	8.798	
SB01	N4130-15	11 Aug 2022 19:14	FB027903.D	8.798	
SB03	N4130-03	11 Aug 2022 19:51	FB027904.D	8.798	
20 PPB GRO STD	20 PPB GRO STD	11 Aug 2022 22:56	FB027909.D	8.796	
SB01RE	N4130-15RE	12 Aug 2022 00:47	FB027910.D	8.796	
SB06	N4130-07	12 Aug 2022 2:01	FB027912.D	8.794	
SB09	N4130-11	12 Aug 2022 8:30	FB027914.D	8.791	
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 9:06	FB027915.D	8.791	
SB04	N4130-13	12 Aug 2022 9:45	FB027916.D	8.790	
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 11:51	FB027918.D	8.793	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	8.6968	8.8968

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/11/22	
N4130-03	**SB03**	**SOIL**			**08/08/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/11/22	
N4130-05	**SB05**	**SOIL**			**08/08/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/11/22	
N4130-07	**SB06**	**SOIL**			**08/09/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/12/22	
N4130-09	**SB07**	**SOIL**			**08/09/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/12/22	
N4130-11	**SB09**	**SOIL**			**08/09/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/12/22	
N4130-13	**SB04**	**SOIL**			**08/09/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/12/22	
N4130-15	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			SVOC-PAH	8270E		08/11/22	08/11/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB03								
N4130-03	SB03	SOIL	Fluoranthene	150.000	J	97.9	210	ug/Kg
N4130-03	SB03	SOIL	Pyrene	110.000	J	91	210	ug/Kg
N4130-03	SB03	SOIL	Benzo(b)fluoranthene	110.000	J	84.6	210	ug/Kg
			Total Svoc :	**370.00**				
			Total Concentration:	**370.00**				
Client ID : SB05								
N4130-05	SB05	SOIL	Fluoranthene	100.000	J	84.7	180	ug/Kg
N4130-05	SB05	SOIL	Pyrene	100.000	J	78.7	180	ug/Kg
N4130-05	SB05	SOIL	Benzo(b)fluoranthene	100.000	J	73.2	180	ug/Kg
N4130-05	SB05	SOIL	Benzo(a)pyrene	81.800	J	71.8	180	ug/Kg
			Total Svoc :	**381.80**				
			Total Concentration:	**381.80**				
Client ID : SB06								
N4130-07	SB06	SOIL	Phenanthrene	490.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Anthracene	130.000	J	110	220	ug/Kg
N4130-07	SB06	SOIL	Fluoranthene	1,500.000		100	220	ug/Kg
N4130-07	SB06	SOIL	Pyrene	1,100.000		95.2	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(a)anthracene	870.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Chrysene	940.000		110	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(b)fluoranthene	1,700.000		88.5	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(k)fluoranthene	490.000		94.4	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(a)pyrene	1,300.000		86.8	220	ug/Kg
N4130-07	SB06	SOIL	Indeno(1,2,3-cd)pyrene	770.000		130	220	ug/Kg
N4130-07	SB06	SOIL	Dibenzo(a,h)anthracene	230.000		130	220	ug/Kg
N4130-07	SB06	SOIL	Benzo(g,h,i)perylene	1,000.000		120	220	ug/Kg
			Total Svoc :	**10,520.00**				
			Total Concentration:	**10,520.00**				
Client ID : SB07								
N4130-09	SB07	SOIL	Fluoranthene	140.000	J	96	200	ug/Kg
N4130-09	SB07	SOIL	Pyrene	98.400	J	89.3	200	ug/Kg
N4130-09	SB07	SOIL	Benzo(b)fluoranthene	88.000	J	83	200	ug/Kg
			Total Svoc :	**326.40**				
			Total Concentration:	**326.40**				
Client ID : SB09								
N4130-11	SB09	SOIL	Phenanthrene	140.000	J	94.3	190	ug/Kg
N4130-11	SB09	SOIL	Fluoranthene	250.000		90	190	ug/Kg
N4130-11	SB09	SOIL	Pyrene	180.000	J	83.7	190	ug/Kg

Hit Summary Sheet
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4130-11	SB09	SOIL	Benzo(a)anthracene	110.000	J	97.9	190	ug/Kg
N4130-11	SB09	SOIL	Chrysene	110.000	J	96.4	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(b)fluoranthene	150.000	J	77.8	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(a)pyrene	120.000	J	76.3	190	ug/Kg
N4130-11	SB09	SOIL	Benzo(g,h,i)perylene	140.000	J	110	190	ug/Kg
			Total Svoc :	**1,200.00**				
			Total Concentration:	**1,200.00**				
Client ID :	**SB04**							
N4130-13	SB04	SOIL	Fluoranthene	100.000	J	89.1	190	ug/Kg
N4130-13	SB04	SOIL	Pyrene	85.300	J	82.8	190	ug/Kg
N4130-13	SB04	SOIL	Benzo(b)fluoranthene	87.700	J	77	190	ug/Kg
			Total Svoc :	**273.00**				
			Total Concentration:	**273.00**				
Client ID :	**SB01**							
N4130-15	SB01	SOIL	Phenanthrene	120.000	J	90.8	180	ug/Kg
N4130-15	SB01	SOIL	Fluoranthene	180.000		86.7	180	ug/Kg
N4130-15	SB01	SOIL	Pyrene	120.000	J	80.6	180	ug/Kg
N4130-15	SB01	SOIL	Benzo(b)fluoranthene	120.000	J	75	180	ug/Kg
N4130-15	SB01	SOIL	Benzo(a)pyrene	85.300	J	73.6	180	ug/Kg
			Total Svoc :	**625.30**				
			Total Concentration:	**625.30**				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.8
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129723.D	1	08/11/22 09:05	08/11/22 19:29	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	200	U	85.7	200	ug/Kg
208-96-8	Acenaphthylene	200	U	79.7	200	ug/Kg
83-32-9	Acenaphthene	200	U	91.5	200	ug/Kg
86-73-7	Fluorene	200	U	91.4	200	ug/Kg
85-01-8	Phenanthrene	200	U	97.0	200	ug/Kg
120-12-7	Anthracene	200	U	97.4	200	ug/Kg
206-44-0	Fluoranthene	200	U	92.5	200	ug/Kg
129-00-0	Pyrene	200	U	86.1	200	ug/Kg
56-55-3	Benzo(a)anthracene	200	U	100	200	ug/Kg
218-01-9	Chrysene	200	U	99.2	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	200	U	80.0	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	200	U	85.4	200	ug/Kg
50-32-8	Benzo(a)pyrene	200	U	78.5	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	200	U	120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	200	U	120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	200	U	110	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	79.0		27 - 109	79%	SPK: 100
321-60-8	2-Fluorobiphenyl	76.8		30 - 103	77%	SPK: 100
1718-51-0	Terphenyl-d14	106		21 - 107	106%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	151000	6.828			
1146-65-2	Naphthalene-d8	618000	8.11			
15067-26-2	Acenaphthene-d10	329000	9.869			
1517-22-2	Phenanthrene-d10	559000	11.357			
1719-03-5	Chrysene-d12	264000	14.004			
1520-96-3	Perylene-d12	292000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.8
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129723.D	1	08/11/22 09:05	08/11/22 19:29	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	18.7
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129731.D	1	08/11/22 09:05	08/11/22 23:51	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	210	U	90.7	210	ug/Kg
208-96-8	Acenaphthylene	210	U	84.3	210	ug/Kg
83-32-9	Acenaphthene	210	U	96.8	210	ug/Kg
86-73-7	Fluorene	210	U	96.7	210	ug/Kg
85-01-8	Phenanthrene	210	U	100	210	ug/Kg
120-12-7	Anthracene	210	U	100	210	ug/Kg
206-44-0	Fluoranthene	150	J	97.9	210	ug/Kg
129-00-0	Pyrene	110	J	91.0	210	ug/Kg
56-55-3	Benzo(a)anthracene	210	U	110	210	ug/Kg
218-01-9	Chrysene	210	U	100	210	ug/Kg
205-99-2	Benzo(b)fluoranthene	110	J	84.6	210	ug/Kg
207-08-9	Benzo(k)fluoranthene	210	U	90.3	210	ug/Kg
50-32-8	Benzo(a)pyrene	210	U	83.1	210	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	210	U	120	210	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	210	U	130	210	ug/Kg
191-24-2	Benzo(g,h,i)perylene	210	U	120	210	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	59.0		27 - 109	59%	SPK: 100
321-60-8	2-Fluorobiphenyl	63.2		30 - 103	63%	SPK: 100
1718-51-0	Terphenyl-d14	52.0		21 - 107	52%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	149000	6.834			
1146-65-2	Naphthalene-d8	557000	8.116			
15067-26-2	Acenaphthene-d10	248000	9.869			
1517-22-2	Phenanthrene-d10	352000	11.357			
1719-03-5	Chrysene-d12	279000	14.01			
1520-96-3	Perylene-d12	234000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	18.7
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129731.D	1	08/11/22 09:05	08/11/22 23:51	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129727.D	1	08/11/22 09:05	08/11/22 21:41	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.4	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.9	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.7	180	ug/Kg
86-73-7	Fluorene	180	U	83.6	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.7	180	ug/Kg
120-12-7	Anthracene	180	U	89.1	180	ug/Kg
206-44-0	Fluoranthene	100	J	84.7	180	ug/Kg
129-00-0	Pyrene	100	J	78.7	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.1	180	ug/Kg
218-01-9	Chrysene	180	U	90.7	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	100	J	73.2	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.1	180	ug/Kg
50-32-8	Benzo(a)pyrene	81.8	J	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	76.3		27 - 109	76%	SPK: 100
321-60-8	2-Fluorobiphenyl	77.5		30 - 103	78%	SPK: 100
1718-51-0	Terphenyl-d14	78.4		21 - 107	78%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	159000	6.834			
1146-65-2	Naphthalene-d8	627000	8.116			
15067-26-2	Acenaphthene-d10	317000	9.869			
1517-22-2	Phenanthrene-d10	455000	11.357			
1719-03-5	Chrysene-d12	291000	14.004			
1520-96-3	Perylene-d12	293000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129727.D	1	08/11/22 09:05	08/11/22 21:41	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	22.2
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129734.D	1	08/11/22 09:05	08/12/22 01:28	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	220	U	94.8	220	ug/Kg
208-96-8	Acenaphthylene	220	U	88.1	220	ug/Kg
83-32-9	Acenaphthene	220	U	100	220	ug/Kg
86-73-7	Fluorene	220	U	100	220	ug/Kg
85-01-8	Phenanthrene	490		110	220	ug/Kg
120-12-7	Anthracene	130	J	110	220	ug/Kg
206-44-0	Fluoranthene	1500		100	220	ug/Kg
129-00-0	Pyrene	1100		95.2	220	ug/Kg
56-55-3	Benzo(a)anthracene	870		110	220	ug/Kg
218-01-9	Chrysene	940		110	220	ug/Kg
205-99-2	Benzo(b)fluoranthene	1700		88.5	220	ug/Kg
207-08-9	Benzo(k)fluoranthene	490		94.4	220	ug/Kg
50-32-8	Benzo(a)pyrene	1300		86.8	220	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	770		130	220	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	230		130	220	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1000		120	220	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	66.7		27 - 109	67%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.1		30 - 103	67%	SPK: 100
1718-51-0	Terphenyl-d14	53.5		21 - 107	54%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	126000	6.834			
1146-65-2	Naphthalene-d8	447000	8.116			
15067-26-2	Acenaphthene-d10	198000	9.869			
1517-22-2	Phenanthrene-d10	315000	11.363			
1719-03-5	Chrysene-d12	271000	14.01			
1520-96-3	Perylene-d12	212000	15.486			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	22.2
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129734.D	1	08/11/22 09:05	08/12/22 01:28	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	17
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129732.D	1	08/11/22 09:05	08/12/22 00:23	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	200	U	88.9	200	ug/Kg
208-96-8	Acenaphthylene	200	U	82.7	200	ug/Kg
83-32-9	Acenaphthene	200	U	94.9	200	ug/Kg
86-73-7	Fluorene	200	U	94.8	200	ug/Kg
85-01-8	Phenanthrene	200	U	100	200	ug/Kg
120-12-7	Anthracene	200	U	100	200	ug/Kg
206-44-0	Fluoranthene	140	J	96.0	200	ug/Kg
129-00-0	Pyrene	98.4	J	89.3	200	ug/Kg
56-55-3	Benzo(a)anthracene	200	U	100	200	ug/Kg
218-01-9	Chrysene	200	U	100	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	88.0	J	83.0	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	200	U	88.6	200	ug/Kg
50-32-8	Benzo(a)pyrene	200	U	81.5	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	200	U	120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	200	U	120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	200	U	120	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	84.8		27 - 109	85%	SPK: 100
321-60-8	2-Fluorobiphenyl	89.8		30 - 103	90%	SPK: 100
1718-51-0	Terphenyl-d14	78.2		21 - 107	78%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	146000	6.834			
1146-65-2	Naphthalene-d8	559000	8.116			
15067-26-2	Acenaphthene-d10	250000	9.869			
1517-22-2	Phenanthrene-d10	355000	11.357			
1719-03-5	Chrysene-d12	289000	14.01			
1520-96-3	Perylene-d12	237000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	17
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129732.D	1	08/11/22 09:05	08/12/22 00:23	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129735.D	1	08/11/22 09:05	08/12/22 02:00	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	83.3	190	ug/Kg
208-96-8	Acenaphthylene	190	U	77.5	190	ug/Kg
83-32-9	Acenaphthene	190	U	89.0	190	ug/Kg
86-73-7	Fluorene	190	U	88.9	190	ug/Kg
85-01-8	Phenanthrene	140	J	94.3	190	ug/Kg
120-12-7	Anthracene	190	U	94.7	190	ug/Kg
206-44-0	Fluoranthene	250		90.0	190	ug/Kg
129-00-0	Pyrene	180	J	83.7	190	ug/Kg
56-55-3	Benzo(a)anthracene	110	J	97.9	190	ug/Kg
218-01-9	Chrysene	110	J	96.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	150	J	77.8	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	83.0	190	ug/Kg
50-32-8	Benzo(a)pyrene	120	J	76.3	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	120	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	140	J	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	71.3		27 - 109	71%	SPK: 100
321-60-8	2-Fluorobiphenyl	76.5		30 - 103	76%	SPK: 100
1718-51-0	Terphenyl-d14	69.9		21 - 107	70%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	128000	6.834			
1146-65-2	Naphthalene-d8	451000	8.116			
15067-26-2	Acenaphthene-d10	201000	9.869			
1517-22-2	Phenanthrene-d10	325000	11.363			
1719-03-5	Chrysene-d12	276000	14.015			
1520-96-3	Perylene-d12	211000	15.498			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129735.D	1	08/11/22 09:05	08/12/22 02:00	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	10.7
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129733.D	1	08/11/22 09:05	08/12/22 00:55	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	82.5	190	ug/Kg
208-96-8	Acenaphthylene	190	U	76.7	190	ug/Kg
83-32-9	Acenaphthene	190	U	88.1	190	ug/Kg
86-73-7	Fluorene	190	U	87.9	190	ug/Kg
85-01-8	Phenanthrene	190	U	93.3	190	ug/Kg
120-12-7	Anthracene	190	U	93.8	190	ug/Kg
206-44-0	Fluoranthene	100	J	89.1	190	ug/Kg
129-00-0	Pyrene	85.3	J	82.8	190	ug/Kg
56-55-3	Benzo(a)anthracene	190	U	96.9	190	ug/Kg
218-01-9	Chrysene	190	U	95.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	87.7	J	77.0	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	82.1	190	ug/Kg
50-32-8	Benzo(a)pyrene	190	U	75.6	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	90.4		27 - 109	90%	SPK: 100
321-60-8	2-Fluorobiphenyl	93.3		30 - 103	93%	SPK: 100
1718-51-0	Terphenyl-d14	91.2		21 - 107	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	148000	6.834			
1146-65-2	Naphthalene-d8	555000	8.116			
15067-26-2	Acenaphthene-d10	259000	9.869			
1517-22-2	Phenanthrene-d10	401000	11.357			
1719-03-5	Chrysene-d12	305000	14.01			
1520-96-3	Perylene-d12	241000	15.486			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	10.7
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129733.D	1	08/11/22 09:05	08/12/22 00:55	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129730.D	1	08/11/22 09:05	08/11/22 23:18	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	80.3	180	ug/Kg
208-96-8	Acenaphthylene	180	U	74.6	180	ug/Kg
83-32-9	Acenaphthene	180	U	85.7	180	ug/Kg
86-73-7	Fluorene	180	U	85.6	180	ug/Kg
85-01-8	Phenanthrene	120	J	90.8	180	ug/Kg
120-12-7	Anthracene	180	U	91.3	180	ug/Kg
206-44-0	Fluoranthene	180		86.7	180	ug/Kg
129-00-0	Pyrene	120	J	80.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	94.3	180	ug/Kg
218-01-9	Chrysene	180	U	92.9	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	120	J	75.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	80.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	85.3	J	73.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	110	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	59.6		27 - 109	60%	SPK: 100
321-60-8	2-Fluorobiphenyl	65.0		30 - 103	65%	SPK: 100
1718-51-0	Terphenyl-d14	56.4		21 - 107	56%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	145000	6.834			
1146-65-2	Naphthalene-d8	555000	8.116			
15067-26-2	Acenaphthene-d10	254000	9.869			
1517-22-2	Phenanthrene-d10	358000	11.357			
1719-03-5	Chrysene-d12	294000	14.01			
1520-96-3	Perylene-d12	235000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129730.D	1	08/11/22 09:05	08/11/22 23:18	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%) Low	High
N4130-01	SB02	Nitrobenzene-d5	100	79.0	79		27	109
		2-Fluorobiphenyl	100	76.8	77		30	103
		Terphenyl-d14	100	106	106		21	107
N4130-03	SB03	Nitrobenzene-d5	100	59.0	59		27	109
		2-Fluorobiphenyl	100	63.2	63		30	103
		Terphenyl-d14	100	52.0	52		21	107
N4130-05	SB05	Nitrobenzene-d5	100	76.3	76		27	109
		2-Fluorobiphenyl	100	77.5	78		30	103
		Terphenyl-d14	100	78.4	78		21	107
N4130-07	SB06	Nitrobenzene-d5	100	66.7	67		27	109
		2-Fluorobiphenyl	100	67.1	67		30	103
		Terphenyl-d14	100	53.5	54		21	107
N4130-09	SB07	Nitrobenzene-d5	100	84.8	85		27	109
		2-Fluorobiphenyl	100	89.8	90		30	103
		Terphenyl-d14	100	78.2	78		21	107
N4130-11	SB09	Nitrobenzene-d5	100	71.3	71		27	109
		2-Fluorobiphenyl	100	76.5	76		30	103
		Terphenyl-d14	100	69.9	70		21	107
N4130-13	SB04	Nitrobenzene-d5	100	90.4	90		27	109
		2-Fluorobiphenyl	100	93.3	93		30	103
		Terphenyl-d14	100	91.2	91		21	107
N4130-15	SB01	Nitrobenzene-d5	100	59.6	60		27	109
		2-Fluorobiphenyl	100	65.0	65		30	103
		Terphenyl-d14	100	56.4	56		21	107
N4142-01MS	UST-NORTHMS	Nitrobenzene-d5	100	73.9	74		27	109
		2-Fluorobiphenyl	100	72.9	73		30	103
		Terphenyl-d14	100	75.9	76		21	107
N4142-01MSD	UST-NORTHMSD	Nitrobenzene-d5	100	73.9	74		27	109
		2-Fluorobiphenyl	100	72.9	73		30	103
		Terphenyl-d14	100	75.3	75		21	107
PB146929BL	PB146929BL	Nitrobenzene-d5	100	80.2	80		27	109
		2-Fluorobiphenyl	100	80.6	81		30	103
		Terphenyl-d14	100	73.1	73		21	107
PB146929BS	PB146929BS	Nitrobenzene-d5	100	77.7	78		27	109
		2-Fluorobiphenyl	100	76.1	76		30	103
		Terphenyl-d14	100	84.7	85		21	107

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4142-01MS		**Client Sample ID: UST-NORTHMS**						**DataFile: BF129941.D**			
Naphthalene	1800	0	1500	ug/Kg	83				72	110	
Acenaphthylene	1800	0	1500	ug/Kg	83				79	118	
Acenaphthene	1800	0	1600	ug/Kg	89				70	121	
Fluorene	1800	0	1500	ug/Kg	83				68	116	
Phenanthrene	1800	0	1600	ug/Kg	89				72	113	
Anthracene	1800	0	1600	ug/Kg	89				62	124	
Fluoranthene	1800	0	1500	ug/Kg	83				59	125	
Pyrene	1800	0	1500	ug/Kg	83				52	128	
Benzo(a)anthracene	1800	0	1500	ug/Kg	83				71	114	
Chrysene	1800	0	1500	ug/Kg	83				57	121	
Benzo(b)fluoranthene	1800	0	1600	ug/Kg	89				67	121	
Benzo(k)fluoranthene	1800	0	1500	ug/Kg	83				74	114	
Benzo(a)pyrene	1800	0	1700	ug/Kg	94				70	142	
Indeno(1,2,3-cd)pyrene	1800	0	1600	ug/Kg	89				61	125	
Dibenz(a,h)anthracene	1800	0	1600	ug/Kg	89				67	130	
Benzo(g,h,i)perylene	1800	0	1600	ug/Kg	89				53	140	

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4142-01MSD		**Client Sample ID:** UST-NORTHMSD						**DataFile:** BF129942.D			
Naphthalene	1800	0	1500	ug/Kg	83		0		72	110	20
Acenaphthylene	1800	0	1600	ug/Kg	89		7		79	118	20
Acenaphthene	1800	0	1600	ug/Kg	89		0		70	121	20
Fluorene	1800	0	1500	ug/Kg	83		0		68	116	20
Phenanthrene	1800	0	1600	ug/Kg	89		0		72	113	20
Anthracene	1800	0	1600	ug/Kg	89		0		62	124	20
Fluoranthene	1800	0	1600	ug/Kg	89		7		59	125	20
Pyrene	1800	0	1500	ug/Kg	83		0		52	128	20
Benzo(a)anthracene	1800	0	1500	ug/Kg	83		0		71	114	20
Chrysene	1800	0	1500	ug/Kg	83		0		57	121	20
Benzo(b)fluoranthene	1800	0	1600	ug/Kg	89		0		67	121	20
Benzo(k)fluoranthene	1800	0	1600	ug/Kg	89		7		74	114	20
Benzo(a)pyrene	1800	0	1700	ug/Kg	94		0		70	142	20
Indeno(1,2,3-cd)pyrene	1800	0	1500	ug/Kg	83		7		61	125	20
Dibenz(a,h)anthracene	1800	0	1600	ug/Kg	89		0		67	130	20
Benzo(g,h,i)perylene	1800	0	1600	ug/Kg	89		0		53	140	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E **DataFile:** BF129903.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB146929BS	Naphthalene	1700	1300	ug/Kg	76				62	100	
	Acenaphthylene	1700	1300	ug/Kg	76				63	101	
	Acenaphthene	1700	1300	ug/Kg	76				57	104	
	Fluorene	1700	1300	ug/Kg	76				61	101	
	Phenanthrene	1700	1300	ug/Kg	76				59	103	
	Anthracene	1700	1400	ug/Kg	82				61	105	
	Fluoranthene	1700	1400	ug/Kg	82				57	107	
	Pyrene	1700	1400	ug/Kg	82				59	103	
	Benzo(a)anthracene	1700	1300	ug/Kg	76				60	102	
	Chrysene	1700	1300	ug/Kg	76				59	101	
	Benzo(b)fluoranthene	1700	1300	ug/Kg	76				62	109	
	Benzo(k)fluoranthene	1700	1400	ug/Kg	82				62	109	
	Benzo(a)pyrene	1700	1500	ug/Kg	88				63	103	
	Indeno(1,2,3-cd)pyrene	1700	1600	ug/Kg	94				63	101	
	Dibenz(a,h)anthracene	1700	1700	ug/Kg	100				61	112	
	Benzo(g,h,i)perylene	1700	1800	ug/Kg	106				57	116	

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146929BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129902.D Lab Sample ID: PB146929BL

Instrument ID: BNA_F Date Extracted: 08/11/2022

Matrix: (soil/water) SOIL Date Analyzed: 08/19/2022

Level: (low/med) LOW Time Analyzed: 09:43

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB146929BS	PB146929BS	BF129903.D	08/19/2022
UST-NORTHMS	N4142-01MS	BF129941.D	08/22/2022
UST-NORTHMSD	N4142-01MSD	BF129942.D	08/22/2022
SB02	N4130-01	BF129723.D	08/11/2022
SB03	N4130-03	BF129731.D	08/11/2022
SB05	N4130-05	BF129727.D	08/11/2022
SB07	N4130-09	BF129732.D	08/12/2022
SB06	N4130-07	BF129734.D	08/12/2022
SB09	N4130-11	BF129735.D	08/12/2022
SB01	N4130-15	BF129730.D	08/11/2022
SB04	N4130-13	BF129733.D	08/12/2022

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129328.D DFTPP Injection Date: 07/25/2022

Instrument ID: BNA_F DFTPP Injection Time: 09:17

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	41.4
68	Less than 2.0% of mass 69	0.7 (1.7) 1
69	Mass 69 relative abundance	39.8
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	53.7
197	Less than 2.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	28
365	Greater than 1% of mass 198	4.2
441	Present, but less than mass 443	13.4
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	15.7 (18.6) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDICC005	SSTDICC005	BF129330.D	07/25/2022	13:23
SSTDICC010	SSTDICC010	BF129331.D	07/25/2022	13:56
SSTDICC020	SSTDICC020	BF129332.D	07/25/2022	14:28
SSTDICCC040	SSTDICCC040	BF129333.D	07/25/2022	15:01
SSTDICC050	SSTDICC050	BF129334.D	07/25/2022	15:34
SSTDICC060	SSTDICC060	BF129335.D	07/25/2022	16:08
SSTDICC080	SSTDICC080	BF129336.D	07/25/2022	16:42

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129716.D DFTPP Injection Date: 08/11/2022

Instrument ID: BNA_F DFTPP Injection Time: 15:37

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	36.5
68	Less than 2.0% of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	37.6
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	52.2
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	29.4
365	Greater than 1% of mass 198	3.6
441	Present, but less than mass 443	15
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	17.9 (18.5) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129717.D	08/11/2022	16:09
SB02	N4130-01	BF129723.D	08/11/2022	19:29
SB05	N4130-05	BF129727.D	08/11/2022	21:41
SB01	N4130-15	BF129730.D	08/11/2022	23:18
SB03	N4130-03	BF129731.D	08/11/2022	23:51
SB07	N4130-09	BF129732.D	08/12/2022	00:23
SB04	N4130-13	BF129733.D	08/12/2022	00:55
SB06	N4130-07	BF129734.D	08/12/2022	01:28
SB09	N4130-11	BF129735.D	08/12/2022	02:00

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129760.D DFTPP Injection Date: 08/14/2022

Instrument ID: BNA_F DFTPP Injection Time: 13:35

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	35.6
68	Less than 2.0% of mass 69	0.6 (1.7) 1
69	Mass 69 relative abundance	36.3
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	50.7
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 60.0% of mass 198	30.4
365	Greater than 1% of mass 198	4.0
441	Present, but less than mass 443	16.1
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.9 (18.9) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDICC005	SSTDICC005	BF129761.D	08/14/2022	14:06
SSTDICC010	SSTDICC010	BF129762.D	08/14/2022	14:37
SSTDICC020	SSTDICC020	BF129763.D	08/14/2022	15:08
SSTDICCC040	SSTDICCC040	BF129764.D	08/14/2022	15:41
SSTDICC050	SSTDICC050	BF129765.D	08/14/2022	16:12
SSTDICC060	SSTDICC060	BF129766.D	08/14/2022	16:43
SSTDICC080	SSTDICC080	BF129767.D	08/14/2022	17:15

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129900.D DFTPP Injection Date: 08/19/2022

Instrument ID: BNA_F DFTPP Injection Time: 08:41

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	37.9
68	Less than 2.0% of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	38
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	51.9
197	Less than 2.0% of mass 198	0.9
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	28.8
365	Greater than 1% of mass 198	3.4
441	Present, but less than mass 443	14.1
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	16.3 (18.9) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129901.D	08/19/2022	09:12
PB146929BL	PB146929BL	BF129902.D	08/19/2022	09:43
PB146929BS	PB146929BS	BF129903.D	08/19/2022	10:14

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4130 SDG NO.: N4130

Lab File ID: BF129935.D DFTPP Injection Date: 08/22/2022

Instrument ID: BNA_F DFTPP Injection Time: 11:47

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	41.5
68	Less than 2.0% of mass 69	0.8 (1.9) 1
69	Mass 69 relative abundance	40.6
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	53.7
197	Less than 2.0% of mass 198	0.4
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	28.8
365	Greater than 1% of mass 198	4
441	Present, but less than mass 443	14.2
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	16.9 (18.3) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129936.D	08/22/2022	12:20
UST-NORTHMS	N4142-01MS	BF129941.D	08/22/2022	15:31
UST-NORTHMSD	N4142-01MSD	BF129942.D	08/22/2022	16:04

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/11/2022

Lab File ID: BF129717.D Time Analyzed: 16:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	180925	6.833	705650	8.12	373650	9.87
	UPPER LIMIT	361850	7.333	1411300	8.616	747300	10.374
	LOWER LIMIT	90462.5	6.333	352825	7.616	186825	9.374
	EPA SAMPLE NO.						
01	SB02	151188	6.83	618471	8.11	328781	9.87
02	SB03	148810	6.83	556761	8.12	247571	9.87
03	SB05	159347	6.83	626802	8.12	317074	9.87
04	SB06	125633	6.83	447396	8.12	198209	9.87
05	SB07	146499	6.83	559340	8.12	249682	9.87
06	SB09	128455	6.83	450709	8.12	200878	9.87
07	SB04	147793	6.83	554783	8.12	258872	9.87
08	SB01	145198	6.83	554837	8.12	254107	9.87

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/11/2022

Lab File ID: BF129717.D Time Analyzed: 16:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	620286	11.363	395275	14.015	315837	15.486
	UPPER LIMIT	1240570	11.863	790550	14.515	631674	15.986
	LOWER LIMIT	310143	10.863	197638	13.515	157919	14.986
	EPA SAMPLE NO.						
01	SB02	559071	11.36	263665	14.00	292138	15.48
02	SB03	351826	11.36	278794	14.01	233650	15.48
03	SB05	454788	11.36	290589	14.00	292707	15.48
04	SB06	315071	11.36	271242	14.01	211551	15.49
05	SB07	354808	11.36	288865	14.01	237024	15.48
06	SB09	325328	11.36	275912	14.02	210716	15.50
07	SB04	400601	11.36	305135	14.01	240660	15.49
08	SB01	358423	11.36	293841	14.01	235177	15.48

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/19/2022

Lab File ID: BF129901.D Time Analyzed: 09:12

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	124625	6.792	471634	8.08	249020	9.83
	UPPER LIMIT	249250	7.292	943268	8.581	498040	10.333
	LOWER LIMIT	62312.5	6.292	235817	7.581	124510	9.333
	EPA SAMPLE NO.						
01	PB146929BL	135864	6.79	542907	8.08	285163	9.83
02	PB146929BS	144649	6.79	580360	8.08	301802	9.84

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/19/2022

Lab File ID: BF129901.D Time Analyzed: 09:12

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	416532	11.327	276766	13.98	213259	15.439
	UPPER LIMIT	833064	11.827	553532	14.48	426518	15.939
	LOWER LIMIT	208266	10.827	138383	13.48	106630	14.939
	EPA SAMPLE NO.						
01	PB146929BL	498421	11.32	383943	13.97	297838	15.43
02	PB146929BS	513194	11.33	320682	13.98	257917	15.44

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/22/2022

Lab File ID: BF129936.D Time Analyzed: 12:20

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	125722	6.775	491661	8.06	263230	9.82
	UPPER LIMIT	251444	7.275	983322	8.557	526460	10.316
	LOWER LIMIT	62861	6.275	245831	7.557	131615	9.316
	EPA SAMPLE NO.						
01	UST-NORTHMS	143664	6.78	594380	8.06	311040	9.82
02	UST-NORTHMSD	146250	6.78	608741	8.06	316644	9.82

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/22/2022

Lab File ID: BF129936.D Time Analyzed: 12:20

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	449327	11.304	297923	13.951	241132	15.398
	UPPER LIMIT	898654	11.804	595846	14.451	482264	15.898
	LOWER LIMIT	224664	10.804	148962	13.451	120566	14.898
	EPA SAMPLE NO.						
01	UST-NORTHMS	504859	11.30	335900	13.95	275110	15.40
02	UST-NORTHMSD	527253	11.30	357312	13.95	293219	15.40

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146929BL	SDG No.:	N4130
Lab Sample ID:	PB146929BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129902.D	1	08/11/22 09:05	08/19/22 09:43	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	170	U	73.9	170	ug/Kg
208-96-8	Acenaphthylene	170	U	68.7	170	ug/Kg
83-32-9	Acenaphthene	170	U	78.9	170	ug/Kg
86-73-7	Fluorene	170	U	78.8	170	ug/Kg
85-01-8	Phenanthrene	170	U	83.6	170	ug/Kg
120-12-7	Anthracene	170	U	84.0	170	ug/Kg
206-44-0	Fluoranthene	170	U	79.8	170	ug/Kg
129-00-0	Pyrene	170	U	74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	170	U	86.8	170	ug/Kg
218-01-9	Chrysene	170	U	85.5	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	170	U	69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	170	U	73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	170	U	67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	170	U	100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	170	U	100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	170	U	96.9	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.2		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	80.6		30 - 103	81%	SPK: 100
1718-51-0	Terphenyl-d14	73.1		21 - 107	73%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	136000	6.793			
1146-65-2	Naphthalene-d8	543000	8.075			
15067-26-2	Acenaphthene-d10	285000	9.834			
1517-22-2	Phenanthrene-d10	498000	11.322			
1719-03-5	Chrysene-d12	384000	13.974			
1520-96-3	Perylene-d12	298000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146929BL	SDG No.:	N4130
Lab Sample ID:	PB146929BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129902.D	1	08/11/22 09:05	08/19/22 09:43	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146929BS	SDG No.:	N4130
Lab Sample ID:	PB146929BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129903.D	1	08/11/22 09:05	08/19/22 10:14	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1300		73.8	170	ug/Kg
208-96-8	Acenaphthylene	1300		68.6	170	ug/Kg
83-32-9	Acenaphthene	1300		78.8	170	ug/Kg
86-73-7	Fluorene	1300		78.7	170	ug/Kg
85-01-8	Phenanthrene	1300		83.5	170	ug/Kg
120-12-7	Anthracene	1400		83.9	170	ug/Kg
206-44-0	Fluoranthene	1400		79.7	170	ug/Kg
129-00-0	Pyrene	1400		74.1	170	ug/Kg
56-55-3	Benzo(a)anthracene	1300		86.7	170	ug/Kg
218-01-9	Chrysene	1300		85.4	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	1300		68.9	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	1400		73.5	170	ug/Kg
50-32-8	Benzo(a)pyrene	1500		67.6	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1600		100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1700		100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1800		96.8	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	77.7		27 - 109	78%	SPK: 100
321-60-8	2-Fluorobiphenyl	76.1		30 - 103	76%	SPK: 100
1718-51-0	Terphenyl-d14	84.7		21 - 107	85%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	145000	6.793			
1146-65-2	Naphthalene-d8	580000	8.075			
15067-26-2	Acenaphthene-d10	302000	9.839			
1517-22-2	Phenanthrene-d10	513000	11.328			
1719-03-5	Chrysene-d12	321000	13.98			
1520-96-3	Perylene-d12	258000	15.439			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146929BS	SDG No.:	N4130
Lab Sample ID:	PB146929BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129903.D	1	08/11/22 09:05	08/19/22 10:14	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	UST-NORTHMS	SDG No.:	N4130
Lab Sample ID:	N4142-01MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	9.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129941.D	1	08/11/22 09:05	08/22/22 15:31	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1500		81.2	190	ug/Kg
208-96-8	Acenaphthylene	1500		75.5	190	ug/Kg
83-32-9	Acenaphthene	1600		86.7	190	ug/Kg
86-73-7	Fluorene	1500		86.6	190	ug/Kg
85-01-8	Phenanthrene	1600		91.8	190	ug/Kg
120-12-7	Anthracene	1600		92.3	190	ug/Kg
206-44-0	Fluoranthene	1500		87.7	190	ug/Kg
129-00-0	Pyrene	1500		81.5	190	ug/Kg
56-55-3	Benzo(a)anthracene	1500		95.3	190	ug/Kg
218-01-9	Chrysene	1500		93.9	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	1600		75.8	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	1500		80.8	190	ug/Kg
50-32-8	Benzo(a)pyrene	1700		74.4	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1600		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1600		110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1600		110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	73.9		27 - 109	74%	SPK: 100
321-60-8	2-Fluorobiphenyl	72.9		30 - 103	73%	SPK: 100
1718-51-0	Terphenyl-d14	75.9		21 - 107	76%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	144000	6.775			
1146-65-2	Naphthalene-d8	594000	8.057			
15067-26-2	Acenaphthene-d10	311000	9.816			
1517-22-2	Phenanthrene-d10	505000	11.304			
1719-03-5	Chrysene-d12	336000	13.951			
1520-96-3	Perylene-d12	275000	15.404			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	UST-NORTHMS	SDG No.:	N4130
Lab Sample ID:	N4142-01MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	9.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129941.D	1	08/11/22 09:05	08/22/22 15:31	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	UST-NORTHMSD	SDG No.:	N4130
Lab Sample ID:	N4142-01MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	9.2
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129942.D	1	08/11/22 09:05	08/22/22 16:04	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1500		81.2	190	ug/Kg
208-96-8	Acenaphthylene	1600		75.5	190	ug/Kg
83-32-9	Acenaphthene	1600		86.7	190	ug/Kg
86-73-7	Fluorene	1500		86.6	190	ug/Kg
85-01-8	Phenanthrene	1600		91.9	190	ug/Kg
120-12-7	Anthracene	1600		92.3	190	ug/Kg
206-44-0	Fluoranthene	1600		87.7	190	ug/Kg
129-00-0	Pyrene	1500		81.6	190	ug/Kg
56-55-3	Benzo(a)anthracene	1500		95.4	190	ug/Kg
218-01-9	Chrysene	1500		94.0	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	1600		75.8	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	1600		80.9	190	ug/Kg
50-32-8	Benzo(a)pyrene	1700		74.4	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1500		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1600		110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1600		110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	73.9		27 - 109	74%	SPK: 100
321-60-8	2-Fluorobiphenyl	72.9		30 - 103	73%	SPK: 100
1718-51-0	Terphenyl-d14	75.3		21 - 107	75%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	146000	6.775			
1146-65-2	Naphthalene-d8	609000	8.057			
15067-26-2	Acenaphthene-d10	317000	9.816			
1517-22-2	Phenanthrene-d10	527000	11.304			
1719-03-5	Chrysene-d12	357000	13.951			
1520-96-3	Perylene-d12	293000	15.404			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	UST-NORTHMSD	SDG No.:	N4130
Lab Sample ID:	N4142-01MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	9.2
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129942.D	1	08/11/22 09:05	08/22/22 16:04	PB146929

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF072522.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Mon Jul 25 17:24:17 2022
Response Via : Initial Calibration

Calibration Files
5 =BF129330.D 10 =BF129331.D 20 =BF129332.D 40 =BF129333.D 50 =BF129334.D 60 =BF129335.D 80 =BF129336.D

		Compound	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------	ISTD	----------						
2)		1,4-Dioxane	0.580	0.576	0.587	0.552	0.536	0.530	0.516	0.554	5.03
3)		Pyridine	1.490	1.617	1.615	1.568	1.477	1.526	1.476	1.538	4.02
4)		n-Nitrosodimet...	0.702	0.696	0.705	0.678	0.651	0.656	0.642	0.676	3.87
5)	S	2-Fluorophenol	1.402	1.401	1.336	1.198	1.130	1.099	1.029	1.228	12.38
6)		Aniline	2.033	2.105	2.052	1.901	1.826	1.790	1.722	1.918	7.66
7)	S	Phenol-d6	1.739	1.744	1.663	1.506	1.435	1.387	1.328	1.543	11.12
8)		2-Chlorophenol	1.485	1.519	1.460	1.331	1.241	1.208	1.145	1.341	11.09
9)		Benzaldehyde	1.196	1.194	1.132	0.979	0.911	0.876		1.048	13.73
10)	C	Phenol	1.817	1.849	1.806	1.603	1.559	1.480	1.390	1.643	11.06
11)		bis(2-Chloroet...	1.413	1.434	1.393	1.281	1.247	1.201	1.153	1.303	8.50
12)		1,3-Dichlorobe...	1.586	1.630	1.571	1.411	1.345	1.299	1.229	1.439	10.96
13)	C	1,4-Dichlorobe...	1.612	1.685	1.594	1.435	1.366	1.311	1.239	1.463	11.57
14)		1,2-Dichlorobe...	1.535	1.561	1.481	1.335	1.229	1.177	1.095	1.345	13.77
15)		Benzyl Alcohol	1.171	1.249	1.222	1.123	1.077	1.026	0.967	1.119	9.21
16)		2,2'-oxybis(1-...	2.117	2.227	2.090	1.939	1.847	1.803	1.691	1.959	9.83
17)		2-Methylphenol	1.229	1.233	1.190	1.086	1.045	1.029	0.977	1.113	9.33
18)		Hexachloroethane	0.593	0.602	0.598	0.543	0.525	0.509	0.487	0.551	8.53
19)	P	n-Nitroso-di-n...	1.076	1.063	1.006	0.900	0.847	0.841	0.807	0.934	12.00
20)		3+4-Methylphenols	1.590	1.619	1.520	1.330	1.242	1.188		1.415	13.11
21)	I	Naphthalene-d8	----------	ISTD	----------						
22)		Acetophenone	0.535	0.540	0.506	0.442	0.424	0.417	0.395	0.466	12.89
23)	S	Nitrobenzene-d5	0.383	0.400	0.384	0.359	0.350	0.350	0.337	0.366	6.28
24)		Nitrobenzene	0.394	0.408	0.400	0.374	0.358	0.364	0.342	0.377	6.39
25)		Isophorone	0.677	0.699	0.679	0.634	0.632	0.644	0.633	0.657	4.19
26)	C	2-Nitrophenol	0.177	0.195	0.192	0.186	0.185	0.187	0.181	0.186	3.39
27)		2,4-Dimethylph...	0.286	0.298	0.293	0.272	0.268	0.273	0.264	0.279	4.74
28)		bis(2-Chloroet...	0.403	0.417	0.397	0.369	0.364	0.364	0.352	0.381	6.46
29)	C	2,4-Dichloroph...	0.296	0.309	0.304	0.286	0.277	0.279	0.267	0.288	5.26
30)		1,2,4-Trichlor...	0.322	0.328	0.316	0.291	0.284	0.279	0.268	0.298	7.88
31)		Naphthalene	1.147	1.161	1.096	0.983	0.948	0.919	0.858	1.016	11.69
32)		Benzoic acid		0.160	0.184	0.208	0.211	0.222	0.226	0.202	12.54
33)		4-Chloroaniline	0.446	0.465	0.445	0.404	0.394	0.394	0.372	0.417	8.26
34)	C	Hexachlorobuta...	0.180	0.186	0.181	0.165	0.161	0.161	0.154	0.170	7.29
35)		Caprolactam	0.094	0.098	0.093	0.092	0.091	0.095	0.093	0.094	2.43
36)	C	4-Chloro-3-met...	0.318	0.327	0.318	0.299	0.294	0.297	0.288	0.306	4.88
37)		2-Methylnaphth...	0.744	0.747	0.712	0.639	0.609	0.605	0.568	0.660	11.03
38)		1-Methylnaphth...	0.714	0.731	0.687	0.609	0.590	0.581	0.549	0.637	11.30

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF072522.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.573	0.584	0.565	0.511	0.502	0.478	0.463	0.525	9.21
41)	P	Hexachlorocycl...	0.171	0.213	0.238	0.252	0.255	0.255	0.253	0.234	13.57
42)	S	2,4,6-Tribromo...	0.212	0.205	0.205	0.189	0.181	0.182	0.173	0.192	7.64
43)	C	2,4,6-Trichlor...	0.394	0.409	0.397	0.381	0.371	0.366	0.351	0.381	5.24
44)		2,4,5-Trichlor...	0.434	0.444	0.443	0.408	0.397	0.394	0.383	0.415	6.11
45)	S	2-Fluorobiphenyl	1.479	1.447	1.336	1.138	1.064			1.293	14.28
46)		1,1'-Biphenyl	1.633	1.684	1.586	1.430	1.356	1.297	1.231	1.460	12.07
47)		2-Chloronaphth...	1.315	1.344	1.252	1.151	1.110	1.079	1.009	1.180	10.68
48)		2-Nitroaniline	0.386	0.413	0.412	0.395	0.383	0.385	0.372	0.392	3.94
49)		Acenaphthylene	2.003	2.063	1.947	1.740	1.677	1.619	1.501	1.793	11.88
50)		Dimethylphthalate	1.512	1.514	1.462	1.345	1.301	1.285	1.245	1.381	8.20
51)		2,6-Dinitrotol...	0.313	0.332	0.324	0.307	0.302	0.299	0.285	0.309	5.08
52)	C	Acenaphthene	1.300	1.289	1.258	1.159	1.104	1.071	1.017	1.171	9.65
53)		3-Nitroaniline	0.367	0.391	0.382	0.368	0.360	0.348	0.339	0.365	4.96
54)	P	2,4-Dinitrophenol		0.124	0.153	0.166	0.164	0.172	0.167	0.158	11.22
55)		Dibenzofuran	1.851	1.858	1.760	1.578	1.499	1.427	1.326	1.614	13.13
56)	P	4-Nitrophenol	0.256	0.279	0.279	0.273	0.270	0.269	0.259	0.269	3.33
57)		2,4-Dinitrotol...	0.409	0.431	0.429	0.413	0.396	0.388	0.360	0.404	6.14
58)		Fluorene	1.514	1.508	1.415	1.234	1.173	1.135	1.062	1.292	14.35
59)		2,3,4,6-Tetrac...	0.340	0.340	0.333	0.323	0.308	0.307	0.293	0.321	5.68
60)		Diethylphthalate	1.469	1.497	1.432	1.307	1.252	1.233	1.153	1.335	9.89
61)		4-Chlorophenyl...	0.659	0.661	0.618	0.548	0.520	0.506	0.474	0.569	13.40
62)		4-Nitroaniline	0.373	0.377	0.376	0.359	0.351	0.356	0.342	0.362	3.80
63)		Azobenzene	1.498	1.515	1.452	1.339	1.279	1.265	1.182	1.361	9.45
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...	0.101	0.124	0.132	0.134	0.131	0.132	0.130	0.126	9.04
66)	c	n-Nitrosodiphe...	0.746	0.749	0.716	0.650	0.613	0.610	0.578	0.666	10.54
67)		4-Bromophenyl-...	0.231	0.243	0.234	0.215	0.205	0.205	0.200	0.219	7.70
68)		Hexachlorobenzene	0.256	0.261	0.249	0.233	0.225	0.222	0.215	0.237	7.54
69)		Atrazine	0.221	0.220	0.216	0.199	0.189	0.191	0.181	0.202	8.05
70)	C	Pentachlorophenol	0.115	0.125	0.133	0.135	0.130	0.133	0.131	0.129	5.45
71)		Phenanthrene	1.253	1.269	1.192	1.057	0.990	0.971	0.910	1.092	13.30
72)		Anthracene	1.226	1.245	1.173	1.029	0.983	0.963	0.891	1.073	13.07
73)		Carbazole	1.134	1.163	1.088	0.980	0.932	0.915	0.858	1.010	11.72
74)		Di-n-butylphth...	1.353	1.366	1.323	1.165	1.109	1.082	1.022	1.203	11.81
75)	C	Fluoranthene	1.286	1.287	1.207	1.071	1.001	0.983	0.908	1.106	13.92
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine	0.735	0.725	0.755	0.741	0.693	0.692	0.605	0.707	7.18
78)		Pyrene	1.648	1.704	1.693	1.672	1.621	1.676	1.693	1.672	1.75
79)	S	Terphenyl-d14	1.136	1.123	1.083	1.034	1.005	1.026	1.013	1.060	5.07
80)		Butylbenzylpht...	0.682	0.714	0.731	0.743	0.726	0.743	0.739	0.725	3.00
81)		Benzo(a)anthra...	1.459	1.463	1.417	1.346	1.285	1.316	1.278	1.366	5.82
82)		3,3'-Dichlorob...	0.487	0.495	0.487	0.452	0.418	0.416	0.402	0.451	8.74
83)		Chrysene	1.417	1.412	1.355	1.252	1.181	1.212	1.183	1.288	8.14
84)		Bis(2-ethylhex...	0.958	0.991	0.990	0.952	0.931	0.944	0.920	0.955	2.85
85)	c	Di-n-octyl pht...	1.411	1.452	1.460	1.353	1.298	1.329	1.317	1.374	4.82

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF072522.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.185	1.171	1.227	1.456	1.438	1.475	1.476	1.347	10.69
88)		Benzo(b)fluora...	1.388	1.389	1.510	1.274	1.246	1.229	1.251	1.327	7.90
89)		Benzo(k)fluora...	1.354	1.447	1.370	1.313	1.256	1.244	1.118	1.300	8.19
90)	C	Benzo(a)pyrene	1.099	1.120	1.117	1.072	1.053	1.058	1.020	1.077	3.41
91)		Dibenzo(a,h)an...	0.973	0.966	1.012	1.191	1.165	1.187	1.178	1.096	9.70
92)		Benzo(g,h,i)pe...	0.938	0.938	1.002	1.241	1.212	1.247	1.262	1.120	13.62

(#) = Out of Range

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Mon Aug 15 02:28:31 2022
Response Via : Initial Calibration

Calibration Files
5 =BF129761.D 10 =BF129762.D 20 =BF129763.D 40 =BF129764.D 50 =BF129765.D 60 =BF129766.D 80 =BF129767.D

		Compound	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------								
2)		1,4-Dioxane	0.530	0.525	0.524	0.468	0.482	0.491	0.469	0.498	5.48
3)		Pyridine	1.196	1.381	1.402	1.227	1.278	1.366	1.279	1.304	6.15
4)		n-Nitrosodimet...	0.611	0.611	0.607	0.583	0.602	0.609	0.585	0.601	2.06
5)	S	2-Fluorophenol	1.334	1.333	1.292	1.114	1.163	1.155	1.064	1.208	9.14
6)		Aniline	1.899	1.948	1.843	1.584	1.652	1.638	1.505	1.724	9.91
7)	S	Phenol-d6	1.699	1.697	1.609	1.387	1.439	1.433	1.326	1.513	10.11
8)		2-Chlorophenol	1.479	1.476	1.429	1.250	1.293	1.289	1.196	1.345	8.55
9)		Benzaldehyde		1.103	0.999	0.809	0.812	0.742		0.893	16.95
10)	C	Phenol	1.804	1.876	1.782	1.526	1.601	1.572	1.455	1.659	9.64
11)		bis(2-Chloroet...	1.322	1.388	1.323	1.177	1.229	1.221	1.161	1.260	6.75
12)		1,3-Dichlorobe...	1.583	1.583	1.529	1.346	1.408	1.399	1.313	1.452	7.73
13)	C	1,4-Dichlorobe...	1.623	1.661	1.572	1.361	1.428	1.418	1.321	1.483	9.03
14)		1,2-Dichlorobe...	1.528	1.563	1.460	1.269	1.319	1.299	1.207	1.378	10.03
15)		Benzyl Alcohol	1.228	1.289	1.231	1.051	1.100	1.098	0.997	1.142	9.46
16)		2,2'-oxybis(1-...	1.856	1.936	1.807	1.568	1.614	1.584	1.453	1.688	10.53
17)		2-Methylphenol	1.183	1.198	1.140	0.992	1.042	1.039	0.965	1.080	8.64
18)		Hexachloroethane	0.601	0.596	0.583	0.515	0.541	0.550	0.513	0.557	6.60
19)	P	n-Nitroso-di-n...	1.021	1.072	1.019	0.897	0.930	0.917	0.837	0.956	8.69
20)		3+4-Methylphenols	1.606	1.652	1.565	1.342	1.397	1.353	1.232	1.449	10.91
21)	I	Naphthalene-d8	----------ISTD----------								
22)		Acetophenone	0.520	0.522	0.511	0.445	0.474	0.470	0.469	0.487	6.21
23)	S	Nitrobenzene-d5	0.384	0.393	0.390	0.344	0.367	0.369	0.368	0.374	4.54
24)		Nitrobenzene	0.397	0.399	0.389	0.348	0.366	0.370	0.368	0.377	4.98
25)		Isophorone	0.659	0.674	0.664	0.595	0.634	0.636	0.639	0.643	4.05
26)	C	2-Nitrophenol	0.178	0.192	0.193	0.174	0.187	0.187	0.186	0.185	3.75
27)		2,4-Dimethylph...	0.275	0.284	0.275	0.248	0.262	0.259	0.259	0.266	4.66
28)		bis(2-Chloroet...	0.389	0.393	0.391	0.354	0.362	0.373	0.367	0.375	4.16
29)	C	2,4-Dichloroph...	0.294	0.304	0.306	0.273	0.285	0.290	0.283	0.291	4.09
30)		1,2,4-Trichlor...	0.323	0.326	0.321	0.282	0.297	0.298	0.298	0.307	5.50
31)		Naphthalene	1.123	1.131	1.117	0.955	1.007	1.000	0.987	1.046	7.17
32)		Benzoic acid		0.078	0.093	0.109	0.121	0.132	0.145	0.113	22.06
33)		4-Chloroaniline	0.429	0.441	0.435	0.381	0.406	0.397	0.390	0.411	5.70
34)	C	Hexachlorobuta...	0.193	0.193	0.195	0.174	0.185	0.185	0.182	0.187	3.98
35)		Caprolactam	0.092	0.093	0.095	0.084	0.089	0.090	0.090	0.090	3.74
36)	C	4-Chloro-3-met...	0.322	0.332	0.327	0.289	0.307	0.311	0.307	0.313	4.66
37)		2-Methylnaphth...	0.721	0.741	0.722	0.634	0.676	0.662	0.650	0.686	6.00
38)		1-Methylnaphth...	0.717	0.728	0.704	0.610	0.644	0.639	0.628	0.667	7.15

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.579	0.596	0.585	0.512	0.536	0.551	0.535	0.556	5.55
41)	P	Hexachlorocycl...		0.040	0.079	0.119	0.129	0.158	0.179	0.117	43.53
42)	S	2,4,6-Tribromo...	0.208	0.209	0.211	0.188	0.195	0.197	0.198	0.201	4.33
43)	C	2,4,6-Trichlor...	0.357	0.373	0.377	0.339	0.357	0.368	0.358	0.361	3.55
44)		2,4,5-Trichlor...	0.380	0.395	0.408	0.370	0.385	0.398	0.385	0.389	3.25
45)	S	2-Fluorobiphenyl	1.453	1.485	1.424	1.198	1.243	1.234	1.181	1.317	9.98
46)		1,1'-Biphenyl	1.639	1.655	1.622	1.398	1.445	1.456	1.421	1.519	7.46
47)		2-Chloronaphth...	1.274	1.305	1.280	1.101	1.163	1.156	1.137	1.202	6.78
48)		2-Nitroaniline	0.378	0.398	0.403	0.357	0.375	0.376	0.372	0.380	4.12
49)		Acenaphthylene	1.961	1.996	1.976	1.680	1.743	1.735	1.669	1.823	8.09
50)		Dimethylphthalate	1.525	1.551	1.508	1.319	1.372	1.392	1.368	1.434	6.40
51)		2,6-Dinitrotol...	0.314	0.330	0.333	0.293	0.309	0.302	0.296	0.311	5.08
52)	C	Acenaphthene	1.182	1.212	1.173	1.019	1.059	1.063	1.034	1.106	7.20
53)		3-Nitroaniline	0.355	0.368	0.364	0.321	0.336	0.334	0.328	0.344	5.34
54)	P	2,4-Dinitrophenol		0.084	0.111	0.122	0.130	0.143		0.118	18.98
55)		Dibenzofuran	1.831	1.851	1.800	1.501	1.580	1.568	1.500	1.662	9.54
56)	P	4-Nitrophenol	0.110	0.140	0.160	0.152	0.162	0.176	0.172	0.153	14.73
57)		2,4-Dinitrotol...	0.428	0.439	0.442	0.365	0.395	0.388	0.369	0.404	8.00
58)		Fluorene	1.530	1.540	1.492	1.256	1.315	1.317	1.263	1.387	9.20
59)		2,3,4,6-Tetrac...	0.264	0.281	0.297	0.276	0.286	0.295	0.298	0.285	4.41
60)		Diethylphthalate	1.543	1.570	1.546	1.305	1.374	1.365	1.304	1.430	8.30
61)		4-Chlorophenyl...	0.664	0.687	0.661	0.570	0.595	0.600	0.582	0.623	7.48
62)		4-Nitroaniline	0.358	0.372	0.374	0.319	0.345	0.337	0.324	0.347	6.31
63)		Azobenzene	1.435	1.493	1.461	1.255	1.323	1.317	1.282	1.366	6.93
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...	0.088	0.109	0.122	0.119	0.123	0.132	0.130	0.117	12.80
66)	c	n-Nitrosodiphe...	0.694	0.726	0.712	0.619	0.648	0.673	0.652	0.675	5.67
67)		4-Bromophenyl-...	0.237	0.248	0.243	0.217	0.228	0.238	0.231	0.234	4.40
68)		Hexachlorobenzene	0.258	0.265	0.269	0.234	0.246	0.255	0.248	0.254	4.73
69)		Atrazine	0.222	0.225	0.221	0.188	0.200	0.202	0.192	0.207	7.36
70)	C	Pentachlorophenol		0.049	0.060	0.066	0.070	0.078		0.065	16.99
71)		Phenanthrene	1.196	1.220	1.182	1.020	1.078	1.086	1.036	1.117	7.26
72)		Anthracene	1.194	1.211	1.185	1.018	1.065	1.088	1.015	1.111	7.59
73)		Carbazole	1.104	1.105	1.086	0.910	0.977	0.965	0.911	1.008	8.73
74)		Di-n-butylphth...	1.397	1.424	1.403	1.179	1.257	1.252	1.173	1.298	8.35
75)	C	Fluoranthene	1.273	1.281	1.246	1.026	1.105	1.066	1.004	1.143	10.55
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine		0.653	0.567	0.483	0.483	0.461		0.529	15.18
78)		Pyrene	1.622	1.724	1.747	1.706	1.702	1.855	1.810	1.738	4.40
79)	S	Terphenyl-d14	1.168	1.235	1.218	1.161	1.154	1.266	1.211	1.202	3.52
80)		Butylbenzylpht...	0.715	0.741	0.757	0.700	0.739	0.757	0.739	0.735	2.87
81)		Benzo(a)anthra...	1.431	1.456	1.429	1.267	1.338	1.362	1.347	1.376	4.85
82)		3,3'-Dichlorob...	0.481	0.489	0.465	0.382	0.399	0.396	0.371	0.426	11.79
83)		Chrysene	1.360	1.374	1.330	1.179	1.261	1.262	1.249	1.288	5.41
84)		Bis(2-ethylhex...	0.888	0.925	0.897	0.797	0.864	0.875	0.862	0.873	4.53
85)	c	Di-n-octyl pht...	1.213	1.213	1.170	1.087	1.161	1.268	1.319	1.204	6.29

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.118	1.230	1.342	1.389	1.401	1.555	1.577	1.373	11.98
88)		Benzo(b)fluora...	1.444	1.486	1.451	1.285	1.372	1.315	1.234	1.370	6.95
89)		Benzo(k)fluora...	1.393	1.437	1.440	1.141	1.261	1.266	1.257	1.313	8.53
90)	C	Benzo(a)pyrene	1.116	1.135	1.122	0.993	1.047	1.082	1.054	1.078	4.70
91)		Dibenzo(a,h)an...	0.908	0.997	1.124	1.161	1.163	1.278	1.300	1.133	12.48
92)		Benzo(g,h,i)pe...	0.856	0.985	1.105	1.163	1.175	1.303	1.325	1.130	14.78

(#) = Out of Range

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: BNA_F Calibration Date/Time: 08/11/2022 16:09

Lab File ID: BF129717.D Init. Calib. Date(s): 07/25/2022 07/25/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 13:23 16:42

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.228	1.208		-1.6	
Phenol-d6	1.543	1.504		-2.5	
Nitrobenzene-d5	0.366	0.376		2.7	
Naphthalene	1.016	1.033		1.7	
2-Fluorobiphenyl	1.293	1.288		-0.4	
Acenaphthylene	1.793	1.807		0.8	
Acenaphthene	1.171	1.194		2.0	20.0
Fluorene	1.292	1.345		4.1	
2,4,6-Tribromophenol	0.192	0.201		4.7	
Phenanthrene	1.092	1.108		1.5	
Anthracene	1.073	1.096		2.1	
Fluoranthene	1.106	1.124		1.6	20.0
Pyrene	1.672	1.767		5.7	
Terphenyl-d14	1.060	1.223		15.4	
Benzo(a)anthracene	1.366	1.385		1.4	
Chrysene	1.288	1.282		-0.5	
Benzo(b)fluoranthene	1.327	1.335		0.5	
Benzo(k)fluoranthene	1.300	1.303		0.2	
Benzo(a)pyrene	1.077	1.066		-1.0	20.0
Indeno(1,2,3-cd)pyrene	1.347	1.408		4.5	
Dibenzo(a,h)anthracene	1.096	1.147		4.7	
Benzo(g,h,i)perylene	1.120	1.151		2.8	

All other compounds must meet a minimum RRF of 0.010.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: BNA_F Calibration Date/Time: 08/19/2022 09:12

Lab File ID: BF129901.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.243		2.9	
Phenol-d6	1.513	1.537		1.6	
Nitrobenzene-d5	0.374	0.377		0.8	
Naphthalene	1.046	1.044		-0.2	
2-Fluorobiphenyl	1.317	1.276		-3.1	
Acenaphthylene	1.823	1.785		-2.1	
Acenaphthene	1.106	1.086		-1.8	20.0
Fluorene	1.387	1.331		-4.0	
2,4,6-Tribromophenol	0.201	0.186		-7.5	
Phenanthrene	1.117	1.117		0.0	
Anthracene	1.111	1.100		-1.0	
Fluoranthene	1.143	1.129		-1.2	20.0
Pyrene	1.738	1.762		1.4	
Terphenyl-d14	1.202	1.144		-4.8	
Benzo(a)anthracene	1.376	1.335		-3.0	
Chrysene	1.288	1.243		-3.5	
Benzo(b)fluoranthene	1.370	1.257		-8.2	
Benzo(k)fluoranthene	1.313	1.254		-4.5	
Benzo(a)pyrene	1.078	1.043		-3.2	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.518		10.6	
Dibenzo(a,h)anthracene	1.133	1.227		8.3	
Benzo(g,h,i)perylene	1.130	1.278		13.1	

All other compounds must meet a minimum RRF of 0.010.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Instrument ID: BNA_F Calibration Date/Time: 08/22/2022 12:20

Lab File ID: BF129936.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.223		1.2	
Phenol-d6	1.513	1.544		2.0	
Nitrobenzene-d5	0.374	0.391		4.5	
Naphthalene	1.046	1.048		0.2	
2-Fluorobiphenyl	1.317	1.323		0.5	
Acenaphthylene	1.823	1.813		-0.5	
Acenaphthene	1.106	1.101		-0.5	20.0
Fluorene	1.387	1.370		-1.2	
2,4,6-Tribromophenol	0.201	0.199		-1.0	
Phenanthrene	1.117	1.130		1.2	
Anthracene	1.111	1.114		0.3	
Fluoranthene	1.143	1.154		1.0	20.0
Pyrene	1.738	1.726		-0.7	
Terphenyl-d14	1.202	1.227		2.1	
Benzo(a)anthracene	1.376	1.316		-4.4	
Chrysene	1.288	1.266		-1.7	
Benzo(b)fluoranthene	1.370	1.242		-9.3	
Benzo(k)fluoranthene	1.313	1.299		-1.1	
Benzo(a)pyrene	1.078	1.032		-4.3	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.482		7.9	
Dibenzo(a,h)anthracene	1.133	1.222		7.9	
Benzo(g,h,i)perylene	1.130	1.233		9.1	

All other compounds must meet a minimum RRF of 0.010.

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-03	**SB03**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-05	**SB05**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-07	**SB06**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-09	**SB07**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-11	**SB09**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/12/22	
N4130-13	**SB04**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/11/22	08/12/22	
N4130-15	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-15RE	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			Gasoline Range Organics	8015D			08/12/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130 **Order ID:** N4130

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB09								
N4130-11	SB09	SOIL	Aroclor-1260	9.00	J	3.60	19.1	ug/kg
			Total Concentration:	**9.000**				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050476.D	1	08/11/22 08:26	08/11/22 16:57	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.7	U	3.50	19.7	ug/kg
11104-28-2	Aroclor-1221	19.7	U	5.40	19.7	ug/kg
11141-16-5	Aroclor-1232	19.7	U	4.50	19.7	ug/kg
53469-21-9	Aroclor-1242	19.7	U	2.80	19.7	ug/kg
12672-29-6	Aroclor-1248	19.7	U	3.40	19.7	ug/kg
11097-69-1	Aroclor-1254	19.7	U	4.90	19.7	ug/kg
37324-23-5	Aroclor-1262	19.7	U	3.90	19.7	ug/kg
11100-14-4	Aroclor-1268	19.7	U	6.60	19.7	ug/kg
11096-82-5	Aroclor-1260	19.7	U	3.70	19.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.5		40 - 162	103%	SPK: 20
2051-24-3	Decachlorobiphenyl	16.7		32 - 176	84%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	18.7 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050477.D	1	08/11/22 08:26	08/11/22 17:13	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	20.9	U	3.80	20.9	ug/kg
11104-28-2	Aroclor-1221	20.9	U	5.80	20.9	ug/kg
11141-16-5	Aroclor-1232	20.9	U	4.80	20.9	ug/kg
53469-21-9	Aroclor-1242	20.9	U	3.00	20.9	ug/kg
12672-29-6	Aroclor-1248	20.9	U	3.70	20.9	ug/kg
11097-69-1	Aroclor-1254	20.9	U	5.20	20.9	ug/kg
37324-23-5	Aroclor-1262	20.9	U	4.10	20.9	ug/kg
11100-14-4	Aroclor-1268	20.9	U	7.00	20.9	ug/kg
11096-82-5	Aroclor-1260	20.9	U	4.00	20.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.8		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.2		32 - 176	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050478.D	1	08/11/22 08:26	08/11/22 17:30	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.0	U	3.20	18.0	ug/kg
11104-28-2	Aroclor-1221	18.0	U	5.00	18.0	ug/kg
11141-16-5	Aroclor-1232	18.0	U	4.20	18.0	ug/kg
53469-21-9	Aroclor-1242	18.0	U	2.60	18.0	ug/kg
12672-29-6	Aroclor-1248	18.0	U	3.20	18.0	ug/kg
11097-69-1	Aroclor-1254	18.0	U	4.50	18.0	ug/kg
37324-23-5	Aroclor-1262	18.0	U	3.50	18.0	ug/kg
11100-14-4	Aroclor-1268	18.0	U	6.10	18.0	ug/kg
11096-82-5	Aroclor-1260	18.0	U	3.40	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.6		40 - 162	108%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.6		32 - 176	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	22.2 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050484.D	1	08/11/22 08:26	08/11/22 20:08	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	21.8	U	3.90	21.8	ug/kg
11104-28-2	Aroclor-1221	21.8	U	6.00	21.8	ug/kg
11141-16-5	Aroclor-1232	21.8	U	5.00	21.8	ug/kg
53469-21-9	Aroclor-1242	21.8	U	3.10	21.8	ug/kg
12672-29-6	Aroclor-1248	21.8	U	3.80	21.8	ug/kg
11097-69-1	Aroclor-1254	21.8	U	5.40	21.8	ug/kg
37324-23-5	Aroclor-1262	21.8	U	4.30	21.8	ug/kg
11100-14-4	Aroclor-1268	21.8	U	7.30	21.8	ug/kg
11096-82-5	Aroclor-1260	21.8	U	4.20	21.8	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	15.3		40 - 162	77%	SPK: 20
2051-24-3	Decachlorobiphenyl	11.0		32 - 176	55%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	17 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050485.D	1	08/11/22 08:26	08/11/22 20:24	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	20.5	U	3.70	20.5	ug/kg
11104-28-2	Aroclor-1221	20.5	U	5.70	20.5	ug/kg
11141-16-5	Aroclor-1232	20.5	U	4.70	20.5	ug/kg
53469-21-9	Aroclor-1242	20.5	U	2.90	20.5	ug/kg
12672-29-6	Aroclor-1248	20.5	U	3.60	20.5	ug/kg
11097-69-1	Aroclor-1254	20.5	U	5.10	20.5	ug/kg
37324-23-5	Aroclor-1262	20.5	U	4.00	20.5	ug/kg
11100-14-4	Aroclor-1268	20.5	U	6.90	20.5	ug/kg
11096-82-5	Aroclor-1260	20.5	U	3.90	20.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.2		40 - 162	101%	SPK: 20
2051-24-3	Decachlorobiphenyl	16.3		32 - 176	81%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050501.D	1	08/11/22 08:26	08/12/22 01:48	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.1	U	3.40	19.1	ug/kg
11104-28-2	Aroclor-1221	19.1	U	5.30	19.1	ug/kg
11141-16-5	Aroclor-1232	19.1	U	4.40	19.1	ug/kg
53469-21-9	Aroclor-1242	19.1	U	2.70	19.1	ug/kg
12672-29-6	Aroclor-1248	19.1	U	3.40	19.1	ug/kg
11097-69-1	Aroclor-1254	19.1	U	4.70	19.1	ug/kg
37324-23-5	Aroclor-1262	19.1	U	3.80	19.1	ug/kg
11100-14-4	Aroclor-1268	19.1	U	6.50	19.1	ug/kg
11096-82-5	Aroclor-1260	9.00	J	3.60	19.1	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.1		40 - 162	90%	SPK: 20
2051-24-3	Decachlorobiphenyl	15.0		32 - 176	75%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	10.7 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050502.D	1	08/11/22 08:26	08/12/22 02:05	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.0	U	3.40	19.0	ug/kg
11104-28-2	Aroclor-1221	19.0	U	5.20	19.0	ug/kg
11141-16-5	Aroclor-1232	19.0	U	4.40	19.0	ug/kg
53469-21-9	Aroclor-1242	19.0	U	2.70	19.0	ug/kg
12672-29-6	Aroclor-1248	19.0	U	3.30	19.0	ug/kg
11097-69-1	Aroclor-1254	19.0	U	4.70	19.0	ug/kg
37324-23-5	Aroclor-1262	19.0	U	3.70	19.0	ug/kg
11100-14-4	Aroclor-1268	19.0	U	6.40	19.0	ug/kg
11096-82-5	Aroclor-1260	19.0	U	3.60	19.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.8		40 - 162	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	14.0		32 - 176	70%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	8.2 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050487.D	1	08/11/22 08:26	08/11/22 20:58	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.5	U	3.30	18.5	ug/kg
11104-28-2	Aroclor-1221	18.5	U	5.10	18.5	ug/kg
11141-16-5	Aroclor-1232	18.5	U	4.30	18.5	ug/kg
53469-21-9	Aroclor-1242	18.5	U	2.60	18.5	ug/kg
12672-29-6	Aroclor-1248	18.5	U	3.20	18.5	ug/kg
11097-69-1	Aroclor-1254	18.5	U	4.60	18.5	ug/kg
37324-23-5	Aroclor-1262	18.5	U	3.60	18.5	ug/kg
11100-14-4	Aroclor-1268	18.5	U	6.20	18.5	ug/kg
11096-82-5	Aroclor-1260	18.5	U	3.50	18.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.5		40 - 162	107%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.8		32 - 176	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

Surrogate Summary

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
I.BLK-PP050198.D	PIBLK-PP050198.D	Tetrachloro-m-xylene	1	20	19.3	96		60	140
		Decachlorobiphenyl	1	20	19.4	97		60	140
		Tetrachloro-m-xylene	2	20	19.8	99		60	140
		Decachlorobiphenyl	2	20	19.5	98		60	140
I.BLK-PP050468.D	PIBLK-PP050468.D	Tetrachloro-m-xylene	1	20	19.4	97		60	140
		Decachlorobiphenyl	1	20	18.7	94		60	140
		Tetrachloro-m-xylene	2	20	19.3	97		60	140
		Decachlorobiphenyl	2	20	19.4	97		60	140
PB146927BL	PB146927BL	Tetrachloro-m-xylene	1	20	20.7	104		40	162
		Decachlorobiphenyl	1	20	20.2	101		32	176
		Tetrachloro-m-xylene	2	20	20.6	103		40	162
		Decachlorobiphenyl	2	20	20.9	105		32	176
PB146927BS	PB146927BS	Tetrachloro-m-xylene	1	20	21.8	109		40	162
		Decachlorobiphenyl	1	20	21.0	105		32	176
		Tetrachloro-m-xylene	2	20	20.5	103		40	162
		Decachlorobiphenyl	2	20	21.4	107		32	176
N4130-01	SB02	Tetrachloro-m-xylene	1	20	20.5	103		40	162
		Decachlorobiphenyl	1	20	16.7	84		32	176
		Tetrachloro-m-xylene	2	20	19.9	100		40	162
		Decachlorobiphenyl	2	20	16.4	82		32	176
N4130-03	SB03	Tetrachloro-m-xylene	1	20	19.7	98		40	162
		Decachlorobiphenyl	1	20	15.5	78		32	176
		Tetrachloro-m-xylene	2	20	20.8	104		40	162
		Decachlorobiphenyl	2	20	18.2	91		32	176
N4130-05	SB05	Tetrachloro-m-xylene	1	20	21.4	107		40	162
		Decachlorobiphenyl	1	20	18.4	92		32	176
		Tetrachloro-m-xylene	2	20	21.6	108		40	162
		Decachlorobiphenyl	2	20	18.6	93		32	176
I.BLK-PP050483.D	PIBLK-PP050483.D	Tetrachloro-m-xylene	1	20	20.1	100		60	140
		Decachlorobiphenyl	1	20	19.0	95		60	140
		Tetrachloro-m-xylene	2	20	20.1	101		60	140
		Decachlorobiphenyl	2	20	19.8	99		60	140
N4130-07	SB06	Tetrachloro-m-xylene	1	20	14.6	73		40	162
		Decachlorobiphenyl	1	20	10.5	53		32	176
		Tetrachloro-m-xylene	2	20	15.3	77		40	162
		Decachlorobiphenyl	2	20	11.0	55		32	176
N4130-09	SB07	Tetrachloro-m-xylene	1	20	19.9	99		40	162
		Decachlorobiphenyl	1	20	15.2	76		32	176
		Tetrachloro-m-xylene	2	20	20.2	101		40	162
		Decachlorobiphenyl	2	20	16.3	81		32	176
N4130-15	SB01	Tetrachloro-m-xylene	1	20	21.5	107		40	162
		Decachlorobiphenyl	1	20	17.4	87		32	176
		Tetrachloro-m-xylene	2	20	19.9	99		40	162

Surrogate Summary

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
N4130-15	SB01	Decachlorobiphenyl	2	20	18.8	94		32	176
I.BLK-PP050497.D	PIBLK-PP050497.D	Tetrachloro-m-xylene	1	20	19.8	99		60	140
		Decachlorobiphenyl	1	20	17.6	88		60	140
		Tetrachloro-m-xylene	2	20	19.8	99		60	140
		Decachlorobiphenyl	2	20	18.3	92		60	140
N4152-03MS	EO-03-081022MS	Tetrachloro-m-xylene	1	20	16.3	81		40	162
		Decachlorobiphenyl	1	20	15.8	79		32	176
		Tetrachloro-m-xylene	2	20	16.4	82		40	162
		Decachlorobiphenyl	2	20	15.8	79		32	176
N4152-03MSD	EO-03-081022MSD	Tetrachloro-m-xylene	1	20	16.1	80		40	162
		Decachlorobiphenyl	1	20	15.4	77		32	176
		Tetrachloro-m-xylene	2	20	16.0	80		40	162
		Decachlorobiphenyl	2	20	15.4	77		32	176
N4130-11	SB09	Tetrachloro-m-xylene	1	20	18.1	90		40	162
		Decachlorobiphenyl	1	20	14.3	71		32	176
		Tetrachloro-m-xylene	2	20	16.6	83		40	162
		Decachlorobiphenyl	2	20	15.0	75		32	176
N4130-13	SB04	Tetrachloro-m-xylene	1	20	18.7	93		40	162
		Decachlorobiphenyl	1	20	13.4	67		32	176
		Tetrachloro-m-xylene	2	20	18.8	94		40	162
		Decachlorobiphenyl	2	20	14.0	70		32	176
I.BLK-PP050507.D	PIBLK-PP050507.D	Tetrachloro-m-xylene	1	20	19.8	99		60	140
		Decachlorobiphenyl	1	20	17.3	87		60	140
		Tetrachloro-m-xylene	2	20	20.0	100		60	140
		Decachlorobiphenyl	2	20	18.5	92		60	140

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PP050499.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**EO-03-081022MS**											
N4152-03MS	AR1016	178	0	161	ug/kg	90				55	134	
	AR1260	178	0	136	ug/kg	76				40	175	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PP050500.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**EO-03-081022MSD**											
N4152-03MSD	AR1016	178.1	0	156	ug/kg	88		2		55	134	20
	AR1260	178.1	0	134	ug/kg	75		1		40	175	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: N4130

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **Datafile :** PP050470.D

Lab Sample ID	Parameter	Spike	Result	Units	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB146927BS	AR1016	166.5	161	ug/kg	97				71	120	
	AR1260	166.5	154	ug/kg	92				65	130	

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146927BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab Sample ID: PB146927BL Lab File ID: PP050469.D

Matrix: (soil/water) Solid Extraction: (Type) SOXH

Sulfur Cleanup: (Y/N) N Date Extracted: 08/11/2022

Date Analyzed (1): 08/11/2022 Date Analyzed (2): 08/11/2022

Time Analyzed (1): 15:02 Time Analyzed (2): 15:02

Instrument ID (1): ECD_P Instrument ID (2): ECD_P

GC Column (1): ZB-MR1 ID: 0.32 (mm) GC Column (2): ZB-MR2 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED 1	DATE ANALYZED 2
PB146927BS	PB146927BS	PP050470.D	08/11/2022	08/11/2022
SB02	N4130-01	PP050476.D	08/11/2022	08/11/2022
SB03	N4130-03	PP050477.D	08/11/2022	08/11/2022
SB05	N4130-05	PP050478.D	08/11/2022	08/11/2022
SB06	N4130-07	PP050484.D	08/11/2022	08/11/2022
SB07	N4130-09	PP050485.D	08/11/2022	08/11/2022
SB01	N4130-15	PP050487.D	08/11/2022	08/11/2022
EO-03-081022MS	N4152-03MS	PP050499.D	08/12/2022	08/12/2022
EO-03-081022MSD	N4152-03MSD	PP050500.D	08/12/2022	08/12/2022
SB09	N4130-11	PP050501.D	08/12/2022	08/12/2022
SB04	N4130-13	PP050502.D	08/12/2022	08/12/2022

COMMENTS:

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Calibration Date(s):** 08/05/2022 08/06/2022

Calibration Times: 22:17 05:48

GC Column: ZB-MR1 ID: 0.32 (mm)

LAB FILE ID: RT 1000 = PP050199.D RT 750 = PP050200.D

RT 500 = PP050201.D RT 250 = PP050202.D RT 050 = PP050203.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	5.52	5.52	5.52	5.52	5.52	5.52	5.42	5.62
Aroclor-1016-2	(2)	5.55	5.55	5.55	5.55	5.54	5.55	5.45	5.65
Aroclor-1016-3	(3)	5.61	5.61	5.61	5.61	5.61	5.61	5.51	5.71
Aroclor-1016-4	(4)	5.71	5.71	5.71	5.71	5.71	5.71	5.61	5.81
Aroclor-1016-5	(5)	6.00	6.00	6.00	6.00	6.00	6.00	5.90	6.10
Aroclor-1260-1	(1)	7.13	7.13	7.13	7.13	7.13	7.13	7.03	7.23
Aroclor-1260-2	(2)	7.39	7.39	7.39	7.39	7.39	7.39	7.29	7.49
Aroclor-1260-3	(3)	7.75	7.75	7.75	7.75	7.75	7.75	7.65	7.85
Aroclor-1260-4	(4)	7.97	7.97	7.97	7.97	7.97	7.97	7.87	8.07
Aroclor-1260-5	(5)	8.29	8.29	8.29	8.29	8.29	8.29	8.19	8.39
Decachlorobiphenyl		10.09	10.09	10.09	10.09	10.09	10.09	9.99	10.19
Tetrachloro-m-xylene		4.35	4.35	4.35	4.35	4.35	4.35	4.25	4.45
Aroclor-1242-1	(1)	5.52	5.52	5.52	5.52	5.52	5.52	5.42	5.62
Aroclor-1242-2	(2)	5.55	5.55	5.55	5.54	5.54	5.55	5.45	5.65
Aroclor-1242-3	(3)	5.61	5.61	5.61	5.61	5.61	5.61	5.51	5.71
Aroclor-1242-4	(4)	5.71	5.71	5.71	5.71	5.71	5.71	5.61	5.81
Aroclor-1242-5	(5)	6.45	6.45	6.45	6.45	6.45	6.45	6.35	6.55
Decachlorobiphenyl		10.09	10.09	10.09	10.09	10.09	10.09	9.99	10.19
Tetrachloro-m-xylene		4.35	4.35	4.35	4.34	4.34	4.35	4.25	4.45
Aroclor-1248-1	(1)	5.52	5.52	5.52	5.52	5.52	5.52	5.42	5.62
Aroclor-1248-2	(2)	5.79	5.79	5.79	5.79	5.79	5.79	5.69	5.89
Aroclor-1248-3	(3)	6.00	6.00	6.00	6.00	6.00	6.00	5.90	6.10
Aroclor-1248-4	(4)	6.41	6.41	6.41	6.41	6.41	6.41	6.31	6.51
Aroclor-1248-5	(5)	6.45	6.45	6.45	6.45	6.45	6.45	6.35	6.55
Decachlorobiphenyl		10.09	10.09	10.09	10.09	10.09	10.09	9.99	10.19
Tetrachloro-m-xylene		4.35	4.34	4.34	4.35	4.34	4.34	4.24	4.44
Aroclor-1268-1	(1)	8.60	8.60	8.60	8.60	8.60	8.60	8.50	8.70
Aroclor-1268-2	(2)	8.69	8.69	8.69	8.69	8.69	8.69	8.59	8.79
Aroclor-1268-3	(3)	8.92	8.91	8.92	8.91	8.92	8.92	8.82	9.02
Aroclor-1268-4	(4)	9.35	9.35	9.35	9.35	9.35	9.35	9.25	9.45
Aroclor-1268-5	(5)	9.76	9.76	9.76	9.76	9.76	9.76	9.66	9.86
Decachlorobiphenyl		10.09	10.09	10.09	10.09	10.09	10.09	9.99	10.19
Tetrachloro-m-xylene		4.35	4.34	4.35	4.35	4.34	4.35	4.25	4.45

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Calibration Date(s):** 08/05/2022 08/06/2022

Calibration Times: 22:17 05:48

GC Column: ZB-MR2 ID: 0.32 (mm)

LAB FILE ID: RT 1000 = PP050199.D RT 750 = PP050200.D

RT 500 = PP050201.D RT 250 = PP050202.D RT 050 = PP050203.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	4.67	4.67	4.67	4.67	4.67	4.67	4.57	4.77
Aroclor-1016-2	(2)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1016-3	(3)	4.86	4.86	4.86	4.86	4.86	4.86	4.76	4.96
Aroclor-1016-4	(4)	4.90	4.90	4.90	4.90	4.90	4.90	4.80	5.00
Aroclor-1016-5	(5)	5.11	5.11	5.11	5.11	5.11	5.11	5.01	5.21
Aroclor-1260-1	(1)	6.14	6.14	6.14	6.14	6.14	6.14	6.04	6.24
Aroclor-1260-2	(2)	6.33	6.33	6.33	6.32	6.32	6.33	6.23	6.43
Aroclor-1260-3	(3)	6.48	6.48	6.48	6.48	6.48	6.48	6.38	6.58
Aroclor-1260-4	(4)	6.95	6.95	6.95	6.95	6.95	6.95	6.85	7.05
Aroclor-1260-5	(5)	7.19	7.19	7.19	7.19	7.19	7.19	7.09	7.29
Decachlorobiphenyl		8.56	8.56	8.56	8.56	8.56	8.56	8.46	8.66
Tetrachloro-m-xylene		3.59	3.59	3.59	3.59	3.59	3.59	3.49	3.69
Aroclor-1242-1	(1)	4.67	4.67	4.67	4.66	4.66	4.67	4.57	4.77
Aroclor-1242-2	(2)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1242-3	(3)	4.86	4.86	4.86	4.86	4.86	4.86	4.76	4.96
Aroclor-1242-4	(4)	4.94	4.94	4.94	4.94	4.94	4.94	4.84	5.04
Aroclor-1242-5	(5)	5.46	5.46	5.46	5.46	5.46	5.46	5.36	5.56
Decachlorobiphenyl		8.56	8.55	8.56	8.56	8.55	8.56	8.46	8.66
Tetrachloro-m-xylene		3.59	3.59	3.59	3.59	3.59	3.59	3.49	3.69
Aroclor-1248-1	(1)	4.66	4.66	4.66	4.66	4.66	4.66	4.56	4.76
Aroclor-1248-2	(2)	4.90	4.90	4.90	4.90	4.90	4.90	4.80	5.00
Aroclor-1248-3	(3)	4.94	4.94	4.94	4.94	4.94	4.94	4.84	5.04
Aroclor-1248-4	(4)	5.11	5.11	5.11	5.11	5.11	5.11	5.01	5.21
Aroclor-1248-5	(5)	5.50	5.50	5.50	5.50	5.50	5.50	5.40	5.60
Decachlorobiphenyl		8.55	8.55	8.56	8.56	8.56	8.56	8.46	8.66
Tetrachloro-m-xylene		3.59	3.59	3.59	3.59	3.59	3.59	3.49	3.69
Aroclor-1268-1	(1)	7.47	7.47	7.47	7.47	7.47	7.47	7.37	7.57
Aroclor-1268-2	(2)	7.54	7.53	7.53	7.53	7.53	7.53	7.43	7.63
Aroclor-1268-3	(3)	7.74	7.74	7.74	7.74	7.74	7.74	7.64	7.84
Aroclor-1268-4	(4)	8.03	8.03	8.03	8.03	8.03	8.03	7.93	8.13
Aroclor-1268-5	(5)	8.31	8.31	8.31	8.31	8.31	8.31	8.21	8.41
Decachlorobiphenyl		8.55	8.56	8.55	8.55	8.55	8.55	8.45	8.65
Tetrachloro-m-xylene		3.59	3.59	3.59	3.59	3.59	3.59	3.49	3.69

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Calibration Date(s):** 08/05/2022 08/06/2022

Calibration Times: 22:17 05:48

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

LAB FILE ID: **CF 1000 =** PP050199.D **CF 750 =** PP050200.D

CF 500 = PP050201.D **CF 250 =** PP050202.D **CF 050 =** PP050203.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	58008556	62499376	62393546	66659900	63514720	62615220	5
Aroclor-1016-2	(2)	84951368	87887763	91511264	91847992	86570440	88553765	3
Aroclor-1016-3	(3)	51428240	54092551	55490022	58439368	53816480	54653332	5
Aroclor-1016-4	(4)	43602216	45820447	46794080	49167112	45186560	46114083	4
Aroclor-1016-5	(5)	42043273	44402039	45634776	47762720	43557240	44680010	5
Aroclor-1260-1	(1)	84694161	88754715	91454032	97417504	94337480	91331578	5
Aroclor-1260-2	(2)	105465253	110429540	113637838	121008648	120707500	114249756	6
Aroclor-1260-3	(3)	79516959	83127893	85234300	91561180	86343740	85156814	5
Aroclor-1260-4	(4)	89650718	93708640	96901536	105467876	90206440	95187042	7
Aroclor-1260-5	(5)	181415985	188053420	191033530	198283360	175861340	186929527	5
Decachlorobiphenyl		1641645200	1711043387	1779360080	1850380800	1822064000	1760898693	5
Tetrachloro-m-xylene		1538588680	1605169720	1609910020	1689333440	1605302000	1609660772	3
Aroclor-1242-1	(1)	47791759	50044952	49991124	53756304	51825400	50681908	4
Aroclor-1242-2	(2)	68591182	71617988	72805814	76741868	71440960	72239562	4
Aroclor-1242-3	(3)	41781222	43902691	44318988	47396912	43717160	44223395	5
Aroclor-1242-4	(4)	35540061	37132095	37205772	39742356	36700800	37264217	4
Aroclor-1242-5	(5)	40699763	42243528	42566998	45721876	39774880	42201409	5
Decachlorobiphenyl		1672385410	1733926627	1751639720	1877661120	1784719200	1764066415	4
Tetrachloro-m-xylene		1520973170	1569872453	1565889060	1640162800	1568616800	1573102857	3
Aroclor-1248-1	(1)	37812792	39665815	40937092	42939484	40531280	40377293	5
Aroclor-1248-2	(2)	52517094	54976323	57060712	59988448	54788940	55866303	5
Aroclor-1248-3	(3)	60172021	63021648	64892480	67186708	64575080	63969587	4
Aroclor-1248-4	(4)	74411941	77438604	79876992	83237696	80550440	79103135	4
Aroclor-1248-5	(5)	71634703	74795628	77017474	79744560	76378500	75914173	4
Decachlorobiphenyl		1720717310	1801442720	1842516600	1902381640	1791071200	1811625894	4
Tetrachloro-m-xylene		1565654100	1623647787	1637669140	1668409920	1594092800	1617894749	2
Aroclor-1268-1	(1)	249856330	252030611	259606086	265227732	242811840	253906520	3
Aroclor-1268-2	(2)	234017166	239649341	244302890	250872924	250788880	243926240	3
Aroclor-1268-3	(3)	197105938	198367669	205092908	207104852	185291320	198592537	4
Aroclor-1268-4	(4)	85534524	86292363	89331720	90580416	79208320	86189469	5
Aroclor-1268-5	(5)	657811544	662429624	680802954	689193848	644518980	666951390	3
Decachlorobiphenyl		3006706350	3030836347	3155897400	3243859520	2908494400	3069158803	4
Tetrachloro-m-xylene		1585777860	1602492867	1664465700	1673958080	1554544400	1616247781	3

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Calibration Date(s):** 08/05/2022 08/06/2022

Calibration Times: 22:17 05:48

GC Column: ZB-MR2 **ID:** 0.32 (mm)

LAB FILE ID: **CF 1000 =** PP050199.D **CF 750 =** PP050200.D

CF 500 = PP050201.D **CF 250 =** PP050202.D **CF 050 =** PP050203.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	92123599	97367597	100741798	108074044	109918700	101645148	7
Aroclor-1016-2	(2)	134627015	140565039	143223202	152374304	152423320	144642576	5
Aroclor-1016-3	(3)	69184117	73236316	75619042	81379320	79997020	75883163	7
Aroclor-1016-4	(4)	51918517	55542468	57905882	63220640	62742240	58265949	8
Aroclor-1016-5	(5)	68088091	72265836	75212040	81590592	84873160	76405944	9
Aroclor-1260-1	(1)	101913541	107647800	111550296	120966192	124508840	113317334	8
Aroclor-1260-2	(2)	120420902	126676377	131220110	141563208	151820520	134340223	9
Aroclor-1260-3	(3)	108764498	114377140	118138296	127085224	133955520	120464136	8
Aroclor-1260-4	(4)	80254993	84572856	87885864	94638572	95889220	88648301	7
Aroclor-1260-5	(5)	180255730	187734925	192448042	202844408	211418280	194940277	6
Decachlorobiphenyl		1417915050	1479926347	1541667600	1600900920	1655019200	1539085823	6
Tetrachloro-m-xylene		3048027540	3171843093	3176250080	3257121440	3007867200	3132221871	3
Aroclor-1242-1	(1)	76171561	79768605	80542890	88014808	90001020	82899777	7
Aroclor-1242-2	(2)	109184718	112920381	115594750	124083340	122115680	116779774	5
Aroclor-1242-3	(3)	56744568	59459563	61191184	66178304	63029480	61320620	6
Aroclor-1242-4	(4)	53432102	56160489	58287718	63927360	60890140	58539562	7
Aroclor-1242-5	(5)	62587751	65752360	68099060	74477256	76632560	69509797	8
Decachlorobiphenyl		1443584710	1491019027	1511587700	1618239880	1591386400	1531163543	5
Tetrachloro-m-xylene		3035770810	3119758493	3108604700	3213569880	2917264800	3078993737	4
Aroclor-1248-1	(1)	60696160	63799561	66330114	70888348	72457980	66834433	7
Aroclor-1248-2	(2)	78018909	81803065	83345040	93237336	95516820	86384234	9
Aroclor-1248-3	(3)	82147024	86344071	90159168	97010896	97614760	90655184	7
Aroclor-1248-4	(4)	95718618	100528588	105877482	111691328	113177420	105398687	7
Aroclor-1248-5	(5)	88730264	93857175	99185882	103847236	110823180	99288747	9
Decachlorobiphenyl		1492171350	1560626707	1595158200	1650890440	1626441600	1585057659	4
Tetrachloro-m-xylene		3260846680	3378122933	3396447940	3424022240	2954191200	3282726199	6
Aroclor-1268-1	(1)	208578493	214546655	219601112	231285824	224657920	219734001	4
Aroclor-1268-2	(2)	191385548	195112036	200986168	208636216	199746040	199173202	3
Aroclor-1268-3	(3)	165179102	166861715	173054232	177330360	164018980	169288878	3
Aroclor-1268-4	(4)	70114521	71112769	73476400	75154896	65401280	71051973	5
Aroclor-1268-5	(5)	552609680	555818967	570462332	571804672	502285760	550596282	5
Decachlorobiphenyl		2624727810	2652874667	2743622220	2802503400	2620751400	2688895899	3
Tetrachloro-m-xylene		3313370890	3353121093	3471394760	3453125680	2954656600	3309133805	6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Date(s) Analyzed:** 08/05/2022 08/06/2022

GC Column: ZB-MR1 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	4.56	4.46	4.66	19757400
		2	4.65	4.55	4.75	14849500
		3	4.72	4.62	4.82	44991400
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	4.72	4.62	4.82	37381800
		2	5.25	5.15	5.35	18110700
		3	5.55	5.45	5.65	39375600
		4	5.71	5.61	5.81	20232800
		5	5.80	5.70	5.90	15633600
Aroclor-1254	500	1	6.38	6.28	6.48	69325800
		2	6.60	6.50	6.70	105449000
		3	6.97	6.87	7.07	113443000
		4	7.26	7.16	7.36	91128200
		5	7.67	7.57	7.77	94518200
Aroclor-1262	500	1	7.74	7.64	7.84	119757000
		2	8.29	8.19	8.39	216070000
		3	8.60	8.50	8.70	98266000
		4	8.69	8.59	8.79	64288200
		5	9.35	9.25	9.45	78937000

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Instrument ID: ECD_P **Date(s) Analyzed:** 08/05/2022 08/06/2022

GC Column: ZB-MR2 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	3.80	3.70	3.90	38222200
		2	3.89	3.79	3.99	28555600
		3	3.96	3.86	4.06	85610800
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	3.96	3.86	4.06	69809400
		2	4.68	4.58	4.78	64290800
		3	4.86	4.76	4.96	33540200
		4	4.94	4.84	5.04	29459800
		5	5.11	5.01	5.21	32930600
Aroclor-1254	500	1	5.46	5.36	5.56	132144000
		2	5.61	5.51	5.71	108974000
		3	6.01	5.91	6.11	159157000
		4	6.24	6.14	6.34	97225800
		5	6.65	6.55	6.75	123262000
Aroclor-1262	500	1	6.69	6.59	6.79	135142000
		2	6.95	6.85	7.05	108660000
		3	7.47	7.37	7.57	72571400
		4	7.53	7.43	7.63	137872000
		5	8.03	7.93	8.13	64405400

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 13:39 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.52	5.52	5.42	5.62	0.00
Aroclor-1016-2	(2)	5.55	5.55	5.45	5.65	0.00
Aroclor-1016-3	(3)	5.61	5.61	5.51	5.71	0.00
Aroclor-1016-4	(4)	5.71	5.71	5.61	5.81	0.00
Aroclor-1016-5	(5)	6.00	6.00	5.90	6.10	0.00
Aroclor-1260-1	(1)	7.13	7.13	7.03	7.23	0.00
Aroclor-1260-2	(2)	7.39	7.39	7.29	7.49	0.00
Aroclor-1260-3	(3)	7.75	7.75	7.65	7.85	0.00
Aroclor-1260-4	(4)	7.98	7.97	7.87	8.07	-0.01
Aroclor-1260-5	(5)	8.30	8.29	8.19	8.39	-0.01
Tetrachloro-m-xylene		4.35	4.35	4.25	4.45	0.00
Decachlorobiphenyl		10.10	10.09	9.99	10.19	-0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 13:39 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.66	4.67	4.57	4.77	0.01
Aroclor-1016-2	(2)	4.68	4.68	4.58	4.78	0.00
Aroclor-1016-3	(3)	4.86	4.86	4.76	4.96	0.00
Aroclor-1016-4	(4)	4.90	4.90	4.80	5.00	0.00
Aroclor-1016-5	(5)	5.11	5.11	5.01	5.21	0.00
Aroclor-1260-1	(1)	6.14	6.14	6.04	6.24	0.00
Aroclor-1260-2	(2)	6.32	6.33	6.23	6.43	0.01
Aroclor-1260-3	(3)	6.48	6.48	6.38	6.58	0.00
Aroclor-1260-4	(4)	6.95	6.95	6.85	7.05	0.00
Aroclor-1260-5	(5)	7.19	7.19	7.09	7.29	0.00
Tetrachloro-m-xylene		3.59	3.59	3.49	3.69	0.00
Decachlorobiphenyl		8.56	8.56	8.46	8.66	0.00

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050464.D **Time Analyzed:** 13:39

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.523	5.422	5.622	482.630	500.000	-3.5
Aroclor-1016-2	5.546	5.445	5.645	482.650	500.000	-3.5
Aroclor-1016-3	5.607	5.506	5.706	470.960	500.000	-5.8
Aroclor-1016-4	5.707	5.607	5.807	483.950	500.000	-3.2
Aroclor-1016-5	6.002	5.901	6.101	477.390	500.000	-4.5
Aroclor-1260-1	7.130	7.028	7.228	456.810	500.000	-8.6
Aroclor-1260-2	7.388	7.286	7.486	444.270	500.000	-11.1
Aroclor-1260-3	7.747	7.645	7.845	445.650	500.000	-10.9
Aroclor-1260-4	7.976	7.873	8.073	447.290	500.000	-10.5
Aroclor-1260-5	8.296	8.192	8.392	462.100	500.000	-7.6
Decachlorobiphenyl	10.096	9.990	10.190	46.900	50.000	-6.2
Tetrachloro-m-xylene	4.346	4.246	4.446	49.190	50.000	-1.6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050464.D **Time Analyzed:** 13:39

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.663	4.566	4.766	486.930	500.000	-2.6
Aroclor-1016-2	4.682	4.584	4.784	475.870	500.000	-4.8
Aroclor-1016-3	4.857	4.759	4.959	478.710	500.000	-4.3
Aroclor-1016-4	4.898	4.800	5.000	472.110	500.000	-5.6
Aroclor-1016-5	5.110	5.011	5.211	466.300	500.000	-6.7
Aroclor-1260-1	6.137	6.037	6.237	478.940	500.000	-4.2
Aroclor-1260-2	6.324	6.225	6.425	501.360	500.000	0.3
Aroclor-1260-3	6.477	6.378	6.578	481.700	500.000	-3.7
Aroclor-1260-4	6.947	6.847	7.047	485.350	500.000	-2.9
Aroclor-1260-5	7.189	7.088	7.288	503.600	500.000	0.7
Decachlorobiphenyl	8.556	8.455	8.655	48.280	50.000	-3.4
Tetrachloro-m-xylene	3.592	3.493	3.693	49.700	50.000	-0.6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 18:44 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.52	5.52	5.42	5.62	0.00
Aroclor-1016-2	(2)	5.54	5.55	5.45	5.65	0.01
Aroclor-1016-3	(3)	5.61	5.61	5.51	5.71	0.00
Aroclor-1016-4	(4)	5.71	5.71	5.61	5.81	0.00
Aroclor-1016-5	(5)	6.00	6.00	5.90	6.10	0.00
Aroclor-1260-1	(1)	7.13	7.13	7.03	7.23	0.00
Aroclor-1260-2	(2)	7.39	7.39	7.29	7.49	0.00
Aroclor-1260-3	(3)	7.74	7.75	7.65	7.85	0.01
Aroclor-1260-4	(4)	7.97	7.97	7.87	8.07	0.00
Aroclor-1260-5	(5)	8.29	8.29	8.19	8.39	0.00
Tetrachloro-m-xylene		4.34	4.35	4.25	4.45	0.01
Decachlorobiphenyl		10.09	10.09	9.99	10.19	0.00

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 18:44 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.68	4.67	4.57	4.77	-0.01
Aroclor-1016-2	(2)	4.70	4.68	4.58	4.78	-0.02
Aroclor-1016-3	(3)	4.87	4.86	4.76	4.96	-0.01
Aroclor-1016-4	(4)	4.91	4.90	4.80	5.00	-0.01
Aroclor-1016-5	(5)	5.12	5.11	5.01	5.21	-0.01
Aroclor-1260-1	(1)	6.15	6.14	6.04	6.24	-0.01
Aroclor-1260-2	(2)	6.34	6.33	6.23	6.43	-0.01
Aroclor-1260-3	(3)	6.49	6.48	6.38	6.58	-0.01
Aroclor-1260-4	(4)	6.96	6.95	6.85	7.05	-0.01
Aroclor-1260-5	(5)	7.20	7.19	7.09	7.29	-0.01
Tetrachloro-m-xylene		3.61	3.59	3.49	3.69	-0.02
Decachlorobiphenyl		8.57	8.56	8.46	8.66	-0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050479.D **Time Analyzed:** 18:44

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.520	5.422	5.622	499.500	500.000	-0.1
Aroclor-1016-2	5.543	5.445	5.645	487.860	500.000	-2.4
Aroclor-1016-3	5.605	5.506	5.706	480.200	500.000	-4.0
Aroclor-1016-4	5.706	5.607	5.807	497.690	500.000	-0.5
Aroclor-1016-5	5.999	5.901	6.101	490.440	500.000	-1.9
Aroclor-1260-1	7.127	7.028	7.228	462.780	500.000	-7.4
Aroclor-1260-2	7.385	7.286	7.486	448.960	500.000	-10.2
Aroclor-1260-3	7.744	7.645	7.845	446.780	500.000	-10.6
Aroclor-1260-4	7.972	7.873	8.073	449.890	500.000	-10.0
Aroclor-1260-5	8.291	8.192	8.392	463.830	500.000	-7.2
Decachlorobiphenyl	10.090	9.990	10.190	46.980	50.000	-6.0
Tetrachloro-m-xylene	4.344	4.246	4.446	50.640	50.000	1.3

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050479.D **Time Analyzed:** 18:44

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.677	4.566	4.766	482.850	500.000	-3.4
Aroclor-1016-2	4.696	4.584	4.784	488.790	500.000	-2.2
Aroclor-1016-3	4.871	4.759	4.959	495.970	500.000	-0.8
Aroclor-1016-4	4.912	4.800	5.000	488.990	500.000	-2.2
Aroclor-1016-5	5.124	5.011	5.211	486.240	500.000	-2.8
Aroclor-1260-1	6.150	6.037	6.237	489.380	500.000	-2.1
Aroclor-1260-2	6.337	6.225	6.425	512.020	500.000	2.4
Aroclor-1260-3	6.490	6.378	6.578	487.470	500.000	-2.5
Aroclor-1260-4	6.960	6.847	7.047	489.910	500.000	-2.0
Aroclor-1260-5	7.202	7.088	7.288	511.250	500.000	2.3
Decachlorobiphenyl	8.570	8.455	8.655	47.850	50.000	-4.3
Tetrachloro-m-xylene	3.606	3.493	3.693	50.810	50.000	1.6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 23:35 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.52	5.52	5.42	5.62	0.00
Aroclor-1016-2	(2)	5.54	5.55	5.45	5.65	0.01
Aroclor-1016-3	(3)	5.60	5.61	5.51	5.71	0.01
Aroclor-1016-4	(4)	5.71	5.71	5.61	5.81	0.01
Aroclor-1016-5	(5)	6.00	6.00	5.90	6.10	0.00
Aroclor-1260-1	(1)	7.13	7.13	7.03	7.23	0.00
Aroclor-1260-2	(2)	7.39	7.39	7.29	7.49	0.00
Aroclor-1260-3	(3)	7.74	7.75	7.65	7.85	0.01
Aroclor-1260-4	(4)	7.97	7.97	7.87	8.07	0.00
Aroclor-1260-5	(5)	8.29	8.29	8.19	8.39	0.00
Tetrachloro-m-xylene		4.34	4.35	4.25	4.45	0.01
Decachlorobiphenyl		10.09	10.09	9.99	10.19	0.00

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/11/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 23:35 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.66	4.67	4.57	4.77	0.01
Aroclor-1016-2	(2)	4.68	4.68	4.58	4.78	0.00
Aroclor-1016-3	(3)	4.85	4.86	4.76	4.96	0.01
Aroclor-1016-4	(4)	4.90	4.90	4.80	5.00	0.01
Aroclor-1016-5	(5)	5.11	5.11	5.01	5.21	0.00
Aroclor-1260-1	(1)	6.13	6.14	6.04	6.24	0.01
Aroclor-1260-2	(2)	6.32	6.33	6.23	6.43	0.01
Aroclor-1260-3	(3)	6.47	6.48	6.38	6.58	0.01
Aroclor-1260-4	(4)	6.94	6.95	6.85	7.05	0.01
Aroclor-1260-5	(5)	7.19	7.19	7.09	7.29	0.01
Tetrachloro-m-xylene		3.59	3.59	3.49	3.69	0.00
Decachlorobiphenyl		8.55	8.56	8.46	8.66	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050493.D **Time Analyzed:** 23:35

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.520	5.422	5.622	482.700	500.000	-3.5
Aroclor-1016-2	5.543	5.445	5.645	475.190	500.000	-5.0
Aroclor-1016-3	5.604	5.506	5.706	467.770	500.000	-6.4
Aroclor-1016-4	5.705	5.607	5.807	482.850	500.000	-3.4
Aroclor-1016-5	5.998	5.901	6.101	473.940	500.000	-5.2
Aroclor-1260-1	7.126	7.028	7.228	420.720	500.000	-15.9
Aroclor-1260-2	7.385	7.286	7.486	410.870	500.000	-17.8
Aroclor-1260-3	7.743	7.645	7.845	414.750	500.000	-17.1
Aroclor-1260-4	7.971	7.873	8.073	417.420	500.000	-16.5
Aroclor-1260-5	8.291	8.192	8.392	424.320	500.000	-15.1
Decachlorobiphenyl	10.089	9.990	10.190	42.740	50.000	-14.5
Tetrachloro-m-xylene	4.343	4.246	4.446	50.400	50.000	0.8

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/11/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050493.D **Time Analyzed:** 23:35

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.661	4.566	4.766	486.870	500.000	-2.6
Aroclor-1016-2	4.679	4.584	4.784	485.810	500.000	-2.8
Aroclor-1016-3	4.854	4.759	4.959	485.320	500.000	-2.9
Aroclor-1016-4	4.895	4.800	5.000	479.570	500.000	-4.1
Aroclor-1016-5	5.107	5.011	5.211	459.450	500.000	-8.1
Aroclor-1260-1	6.133	6.037	6.237	463.290	500.000	-7.3
Aroclor-1260-2	6.321	6.225	6.425	481.880	500.000	-3.6
Aroclor-1260-3	6.474	6.378	6.578	451.790	500.000	-9.6
Aroclor-1260-4	6.944	6.847	7.047	447.310	500.000	-10.5
Aroclor-1260-5	7.185	7.088	7.288	469.840	500.000	-6.0
Decachlorobiphenyl	8.553	8.455	8.655	43.520	50.000	-13.0
Tetrachloro-m-xylene	3.590	3.493	3.693	51.120	50.000	2.2

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/12/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 05:28 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.52	5.52	5.42	5.62	0.00
Aroclor-1016-2	(2)	5.54	5.55	5.45	5.65	0.01
Aroclor-1016-3	(3)	5.61	5.61	5.51	5.71	0.00
Aroclor-1016-4	(4)	5.71	5.71	5.61	5.81	0.00
Aroclor-1016-5	(5)	6.00	6.00	5.90	6.10	0.00
Aroclor-1260-1	(1)	7.13	7.13	7.03	7.23	0.00
Aroclor-1260-2	(2)	7.39	7.39	7.29	7.49	0.00
Aroclor-1260-3	(3)	7.74	7.75	7.65	7.85	0.01
Aroclor-1260-4	(4)	7.97	7.97	7.87	8.07	0.00
Aroclor-1260-5	(5)	8.29	8.29	8.19	8.39	0.00
Tetrachloro-m-xylene		4.34	4.35	4.25	4.45	0.01
Decachlorobiphenyl		10.09	10.09	9.99	10.19	0.00

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

Continuing Calib Date: 08/12/2022 **Initial Calibration Date(s):** 08/05/2022 08/06/2022

Continuing Calib Time: 05:28 **Initial Calibration Time(s):** 22:17 05:48

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.66	4.67	4.57	4.77	0.01
Aroclor-1016-2	(2)	4.68	4.68	4.58	4.78	0.00
Aroclor-1016-3	(3)	4.85	4.86	4.76	4.96	0.01
Aroclor-1016-4	(4)	4.89	4.90	4.80	5.00	0.01
Aroclor-1016-5	(5)	5.11	5.11	5.01	5.21	0.00
Aroclor-1260-1	(1)	6.13	6.14	6.04	6.24	0.01
Aroclor-1260-2	(2)	6.32	6.33	6.23	6.43	0.01
Aroclor-1260-3	(3)	6.47	6.48	6.38	6.58	0.01
Aroclor-1260-4	(4)	6.94	6.95	6.85	7.05	0.01
Aroclor-1260-5	(5)	7.18	7.19	7.09	7.29	0.01
Tetrachloro-m-xylene		3.59	3.59	3.49	3.69	0.00
Decachlorobiphenyl		8.55	8.56	8.46	8.66	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL04 **Date Analyzed:** 08/12/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050503.D **Time Analyzed:** 05:28

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.520	5.422	5.622	492.700	500.000	-1.5
Aroclor-1016-2	5.543	5.445	5.645	487.240	500.000	-2.6
Aroclor-1016-3	5.605	5.506	5.706	480.880	500.000	-3.8
Aroclor-1016-4	5.706	5.607	5.807	490.220	500.000	-2.0
Aroclor-1016-5	6.000	5.901	6.101	477.860	500.000	-4.4
Aroclor-1260-1	7.128	7.028	7.228	451.230	500.000	-9.8
Aroclor-1260-2	7.386	7.286	7.486	411.620	500.000	-17.7
Aroclor-1260-3	7.744	7.645	7.845	405.700	500.000	-18.9
Aroclor-1260-4	7.973	7.873	8.073	404.030	500.000	-19.2
Aroclor-1260-5	8.293	8.192	8.392	412.030	500.000	-17.6
Decachlorobiphenyl	10.092	9.990	10.190	43.990	50.000	-12.0
Tetrachloro-m-xylene	4.344	4.246	4.446	50.500	50.000	1.0

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4130 **SAS No.:** N4130 **SDG NO.:** N4130

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/05/2022 08/05/2022

Client Sample No.: CCAL04 **Date Analyzed:** 08/12/2022

Lab Sample No.: AR1660CCC500 **Data File :** PP050503.D **Time Analyzed:** 05:28

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.660	4.566	4.766	493.190	500.000	-1.4
Aroclor-1016-2	4.678	4.584	4.784	501.480	500.000	0.3
Aroclor-1016-3	4.853	4.759	4.959	506.390	500.000	1.3
Aroclor-1016-4	4.894	4.800	5.000	501.830	500.000	0.4
Aroclor-1016-5	5.106	5.011	5.211	493.660	500.000	-1.3
Aroclor-1260-1	6.132	6.037	6.237	484.940	500.000	-3.0
Aroclor-1260-2	6.320	6.225	6.425	513.500	500.000	2.7
Aroclor-1260-3	6.472	6.378	6.578	481.990	500.000	-3.6
Aroclor-1260-4	6.943	6.847	7.047	473.980	500.000	-5.2
Aroclor-1260-5	7.183	7.088	7.288	491.630	500.000	-1.7
Decachlorobiphenyl	8.552	8.455	8.655	45.450	50.000	-9.1
Tetrachloro-m-xylene	3.588	3.493	3.693	51.990	50.000	4.0

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI **Instrument ID:** ECD_P

GC Column: ZB-MR1 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/05/2022 08/05/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/05/2022	22:01	PP050198.D	10.09	4.35
AR1660ICC1000	AR1660ICC1000	08/05/2022	22:17	PP050199.D	10.09	4.35
AR1660ICC750	AR1660ICC750	08/05/2022	22:34	PP050200.D	10.09	4.35
AR1660ICC500	AR1660ICC500	08/05/2022	22:51	PP050201.D	10.09	4.35
AR1660ICC250	AR1660ICC250	08/05/2022	23:07	PP050202.D	10.09	4.35
AR1660ICC050	AR1660ICC050	08/05/2022	23:24	PP050203.D	10.09	4.35
AR1221ICC500	AR1221ICC500	08/05/2022	23:41	PP050204.D	10.09	4.35
AR1232ICC500	AR1232ICC500	08/05/2022	23:58	PP050205.D	10.09	4.35
AR1242ICC1000	AR1242ICC1000	08/06/2022	00:14	PP050206.D	10.09	4.35
AR1242ICC750	AR1242ICC750	08/06/2022	00:31	PP050207.D	10.09	4.35
AR1242ICC500	AR1242ICC500	08/06/2022	00:48	PP050208.D	10.09	4.35
AR1242ICC250	AR1242ICC250	08/06/2022	01:04	PP050209.D	10.09	4.34
AR1242ICC050	AR1242ICC050	08/06/2022	01:21	PP050210.D	10.09	4.34
AR1248ICC1000	AR1248ICC1000	08/06/2022	01:38	PP050211.D	10.09	4.35
AR1248ICC750	AR1248ICC750	08/06/2022	01:54	PP050212.D	10.09	4.34
AR1248ICC500	AR1248ICC500	08/06/2022	02:11	PP050213.D	10.09	4.34
AR1248ICC250	AR1248ICC250	08/06/2022	02:28	PP050214.D	10.09	4.35
AR1248ICC050	AR1248ICC050	08/06/2022	02:45	PP050215.D	10.09	4.34
AR1254ICC500	AR1254ICC500	08/06/2022	03:35	PP050218.D	10.09	4.35
AR1262ICC500	AR1262ICC500	08/06/2022	04:25	PP050221.D	10.09	4.35
AR1268ICC1000	AR1268ICC1000	08/06/2022	04:41	PP050222.D	10.09	4.35
AR1268ICC750	AR1268ICC750	08/06/2022	04:58	PP050223.D	10.09	4.34
AR1268ICC500	AR1268ICC500	08/06/2022	05:15	PP050224.D	10.09	4.35
AR1268ICC250	AR1268ICC250	08/06/2022	05:31	PP050225.D	10.09	4.35
AR1268ICC050	AR1268ICC050	08/06/2022	05:48	PP050226.D	10.09	4.34
AR1660CCC500	AR1660CCC500	08/11/2022	13:39	PP050464.D	10.10	4.35
I.BLK	I.BLK	08/11/2022	14:45	PP050468.D	10.10	4.35
PB146927BL	PB146927BL	08/11/2022	15:02	PP050469.D	10.10	4.35
PB146927BS	PB146927BS	08/11/2022	15:18	PP050470.D	10.10	4.35
SB02	N4130-01	08/11/2022	16:57	PP050476.D	10.10	4.35
SB03	N4130-03	08/11/2022	17:13	PP050477.D	10.09	4.35
SB05	N4130-05	08/11/2022	17:30	PP050478.D	10.10	4.35
AR1660CCC500	AR1660CCC500	08/11/2022	18:44	PP050479.D	10.09	4.34
I.BLK	I.BLK	08/11/2022	19:51	PP050483.D	10.09	4.34
SB06	N4130-07	08/11/2022	20:08	PP050484.D	10.09	4.34
SB07	N4130-09	08/11/2022	20:24	PP050485.D	10.09	4.34
SB01	N4130-15	08/11/2022	20:58	PP050487.D	10.09	4.35
AR1660CCC500	AR1660CCC500	08/11/2022	23:35	PP050493.D	10.09	4.34
I.BLK	I.BLK	08/12/2022	00:42	PP050497.D	10.09	4.34
EO-03-081022MS	N4152-03MS	08/12/2022	01:15	PP050499.D	10.09	4.34
EO-03-081022MSD	N4152-03MSD	08/12/2022	01:32	PP050500.D	10.09	4.34
SB09	N4130-11	08/12/2022	01:48	PP050501.D	10.09	4.34
SB04	N4130-13	08/12/2022	02:05	PP050502.D	10.09	4.34
AR1660CCC500	AR1660CCC500	08/12/2022	05:28	PP050503.D	10.09	4.34
I.BLK	I.BLK	08/12/2022	06:51	PP050507.D	10.09	4.34

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI **Instrument ID:** ECD_P

GC Column: ZB-MR2 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/05/2022 08/05/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/05/2022	22:01	PP050198.D	8.56	3.59
AR1660ICC1000	AR1660ICC1000	08/05/2022	22:17	PP050199.D	8.56	3.59
AR1660ICC750	AR1660ICC750	08/05/2022	22:34	PP050200.D	8.56	3.59
AR1660ICC500	AR1660ICC500	08/05/2022	22:51	PP050201.D	8.56	3.59
AR1660ICC250	AR1660ICC250	08/05/2022	23:07	PP050202.D	8.56	3.59
AR1660ICC050	AR1660ICC050	08/05/2022	23:24	PP050203.D	8.56	3.59
AR1221ICC500	AR1221ICC500	08/05/2022	23:41	PP050204.D	8.56	3.59
AR1232ICC500	AR1232ICC500	08/05/2022	23:58	PP050205.D	8.56	3.59
AR1242ICC1000	AR1242ICC1000	08/06/2022	00:14	PP050206.D	8.56	3.59
AR1242ICC750	AR1242ICC750	08/06/2022	00:31	PP050207.D	8.55	3.59
AR1242ICC500	AR1242ICC500	08/06/2022	00:48	PP050208.D	8.56	3.59
AR1242ICC250	AR1242ICC250	08/06/2022	01:04	PP050209.D	8.56	3.59
AR1242ICC050	AR1242ICC050	08/06/2022	01:21	PP050210.D	8.55	3.59
AR1248ICC1000	AR1248ICC1000	08/06/2022	01:38	PP050211.D	8.55	3.59
AR1248ICC750	AR1248ICC750	08/06/2022	01:54	PP050212.D	8.55	3.59
AR1248ICC500	AR1248ICC500	08/06/2022	02:11	PP050213.D	8.56	3.59
AR1248ICC250	AR1248ICC250	08/06/2022	02:28	PP050214.D	8.56	3.59
AR1248ICC050	AR1248ICC050	08/06/2022	02:45	PP050215.D	8.56	3.59
AR1254ICC500	AR1254ICC500	08/06/2022	03:35	PP050218.D	8.56	3.59
AR1262ICC500	AR1262ICC500	08/06/2022	04:25	PP050221.D	8.55	3.59
AR1268ICC1000	AR1268ICC1000	08/06/2022	04:41	PP050222.D	8.55	3.59
AR1268ICC750	AR1268ICC750	08/06/2022	04:58	PP050223.D	8.56	3.59
AR1268ICC500	AR1268ICC500	08/06/2022	05:15	PP050224.D	8.55	3.59
AR1268ICC250	AR1268ICC250	08/06/2022	05:31	PP050225.D	8.55	3.59
AR1268ICC050	AR1268ICC050	08/06/2022	05:48	PP050226.D	8.55	3.59
AR1660CCC500	AR1660CCC500	08/11/2022	13:39	PP050464.D	8.56	3.59
I.BLK	I.BLK	08/11/2022	14:45	PP050468.D	8.56	3.59
PB146927BL	PB146927BL	08/11/2022	15:02	PP050469.D	8.56	3.59
PB146927BS	PB146927BS	08/11/2022	15:18	PP050470.D	8.56	3.59
SB02	N4130-01	08/11/2022	16:57	PP050476.D	8.56	3.59
SB03	N4130-03	08/11/2022	17:13	PP050477.D	8.56	3.59
SB05	N4130-05	08/11/2022	17:30	PP050478.D	8.56	3.59
AR1660CCC500	AR1660CCC500	08/11/2022	18:44	PP050479.D	8.57	3.61
I.BLK	I.BLK	08/11/2022	19:51	PP050483.D	8.55	3.59
SB06	N4130-07	08/11/2022	20:08	PP050484.D	8.55	3.59
SB07	N4130-09	08/11/2022	20:24	PP050485.D	8.55	3.59
SB01	N4130-15	08/11/2022	20:58	PP050487.D	8.55	3.59
AR1660CCC500	AR1660CCC500	08/11/2022	23:35	PP050493.D	8.55	3.59
I.BLK	I.BLK	08/12/2022	00:42	PP050497.D	8.57	3.61
EO-03-081022MS	N4152-03MS	08/12/2022	01:15	PP050499.D	8.55	3.59
EO-03-081022MSD	N4152-03MSD	08/12/2022	01:32	PP050500.D	8.56	3.59
SB09	N4130-11	08/12/2022	01:48	PP050501.D	8.55	3.59
SB04	N4130-13	08/12/2022	02:05	PP050502.D	8.55	3.59
AR1660CCC500	AR1660CCC500	08/12/2022	05:28	PP050503.D	8.55	3.59
I.BLK	I.BLK	08/12/2022	06:51	PP050507.D	8.55	3.59

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146927BL	SDG No.:	N4130
Lab Sample ID:	PB146927BL	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050469.D	1	08/11/22 08:26	08/11/22 15:02	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.0	U	3.00	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	17.0	U	3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.7		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.9		32 - 176	105%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/05/22
Project:	QED1059 Phase II SCI	Date Received:	08/05/22
Client Sample ID:	PIBLK-PP050198.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-PP050198.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050198.D	1		08/05/22	pp080622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.3		60 - 140	96%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.4		60 - 140	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	PIBLK-PP050468.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-PP050468.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050468.D	1		08/11/22	PP081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.3		60 - 140	97%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.7		60 - 140	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	PIBLK-PP050483.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-PP050483.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050483.D	1		08/11/22	PP081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.1		60 - 140	100%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.0		60 - 140	95%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-PP050497.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-PP050497.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050497.D	1		08/12/22	PP081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.8		60 - 140	99%	SPK: 20
2051-24-3	Decachlorobiphenyl	17.6		60 - 140	88%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-PP050507.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-PP050507.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050507.D	1		08/12/22	PP081122

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.8		60 - 140	99%	SPK: 20
2051-24-3	Decachlorobiphenyl	17.3		60 - 140	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146927BS	SDG No.:	N4130
Lab Sample ID:	PB146927BS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050470.D	1	08/11/22 08:26	08/11/22 15:18	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	161		3.00	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	154		3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.8		40 - 162	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.4		32 - 176	107%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	EO-03-081022MS	SDG No.:	N4130
Lab Sample ID:	N4152-03MS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	6.5 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050499.D	1	08/11/22 08:26	08/12/22 01:15	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	161		3.30	18.2	ug/kg
11104-28-2	Aroclor-1221	18.2	U	5.00	18.2	ug/kg
11141-16-5	Aroclor-1232	18.2	U	4.20	18.2	ug/kg
53469-21-9	Aroclor-1242	18.2	U	2.60	18.2	ug/kg
12672-29-6	Aroclor-1248	18.2	U	3.20	18.2	ug/kg
11097-69-1	Aroclor-1254	18.2	U	4.50	18.2	ug/kg
37324-23-5	Aroclor-1262	18.2	U	3.60	18.2	ug/kg
11100-14-4	Aroclor-1268	18.2	U	6.10	18.2	ug/kg
11096-82-5	Aroclor-1260	136		3.50	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	16.4		40 - 162	82%	SPK: 20
2051-24-3	Decachlorobiphenyl	15.8		32 - 176	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/10/22
Client Sample ID:	EO-03-081022MSD	SDG No.:	N4130
Lab Sample ID:	N4152-03MSD	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	6.5 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PP050500.D	1	08/11/22 08:26	08/12/22 01:32	PB146927

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	156		3.30	18.2	ug/kg
11104-28-2	Aroclor-1221	18.2	U	5.00	18.2	ug/kg
11141-16-5	Aroclor-1232	18.2	U	4.20	18.2	ug/kg
53469-21-9	Aroclor-1242	18.2	U	2.60	18.2	ug/kg
12672-29-6	Aroclor-1248	18.2	U	3.20	18.2	ug/kg
11097-69-1	Aroclor-1254	18.2	U	4.50	18.2	ug/kg
37324-23-5	Aroclor-1262	18.2	U	3.60	18.2	ug/kg
11100-14-4	Aroclor-1268	18.2	U	6.10	18.2	ug/kg
11096-82-5	Aroclor-1260	134		3.50	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	16.1		40 - 162	80%	SPK: 20
2051-24-3	Decachlorobiphenyl	15.4		32 - 176	77%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-03	**SB03**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-05	**SB05**	**SOIL**			**08/08/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-07	**SB06**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-09	**SB07**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-11	**SB09**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/11/22	08/12/22	
N4130-13	**SB04**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/12/22	

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/11/22	08/12/22	
N4130-15	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			Diesel Range Organics	8015D		08/11/22	08/12/22	
			Gasoline Range Organics	8015D			08/11/22	
			PCB	8082A		08/11/22	08/11/22	
N4130-15RE	**SB01**	**SOIL**			**08/09/22**			**08/09/22**
			Gasoline Range Organics	8015D			08/12/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011224.D	1	08/11/22 09:35	08/12/22 10:18	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5900		254	1930	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.2		37 - 130	71%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	18.7 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011225.D	1	08/11/22 09:35	08/12/22 10:48	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	25200		269	2050	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	19.7		37 - 130	98%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011226.D	1	08/11/22 09:35	08/12/22 11:17	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	22100		232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.2		37 - 130	71%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	22.2 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011230.D	2	08/11/22 09:35	08/12/22 13:16	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	48700		561	4270	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	8.76		37 - 130	88%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	17 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010351.D	1	08/11/22 09:35	08/12/22 10:18	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	10300		263	2010	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	11.9		37 - 130	59%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	11.4 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010355.D	10	08/11/22 09:35	08/12/22 12:16	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	139000		2470	18800	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	1.88		37 - 130	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	10.7 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010356.D	2	08/11/22 09:35	08/12/22 12:46	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	37200		489	3720	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	9.01		37 - 130	90%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.2 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010354.D	1	08/11/22 09:35	08/12/22 11:47	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	14400		238	1810	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	11.3		37 - 130	57%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

EPA SAMPLE NO.	S1 TETRACOSANE-d50	S2	S3	S4	TOT OUT
PIBLK-FF011221.D	69				0
PIBLK-FF011231.D	71				0
PIBLK-FG010348.D	86				0
PIBLK-FG010359.D	85				0
SB02	71				0
SB02MS	61				0
SB02MSD	62				0
SB03	98				0
SB05	71				0
SB06	88				0
SB07	59				0
SB09	94				0
SB04	90				0
SB01	57				0
PB146931BL	122				0
PB146931BS	101				0

	QC LIMITS
TETRACOSANE-d50	For Water : 29-130 For Soil : 37-130

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Client SampleID : SB02MS **Datafile:** FF011228.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7711	5900	13700	101%		68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Client SampleID : SB02MSD **Datafile:** FF011229.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7716	5900	12500	86%		68-131

MS/MSD % Recovery RPD : 16.0

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RI

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4130 **SAS No :** N4130 **SDG No:** N4130

Matrix Spike - EPA Sample No : PB146931BS **Datafile:** FG010358.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
DRO	6664	0	5536	83	68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

4B

METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146931BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG NO.: N4130

Lab File ID: FG010357.D Lab Sample ID: PB146931BL

Instrument ID: FG Date Extracted: 08/12/2022

Matrix: (soil/water) Soil Date Analyzed: 08/12/22

Level: (low/med) low Time Analyzed: 13:16

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB02	N4130-01	FF011224.D	08/12/22
SB03	N4130-03	FF011225.D	08/12/22
SB05	N4130-05	FF011226.D	08/12/22
SB02MS	N4130-01MS	FF011228.D	08/12/22
SB02MSD	N4130-01MSD	FF011229.D	08/12/22
SB06	N4130-07	FF011230.D	08/12/22
SB07	N4130-09	FG010351.D	08/12/22
SB01	N4130-15	FG010354.D	08/12/22
SB09	N4130-11	FG010355.D	08/12/22
SB04	N4130-13	FG010356.D	08/12/22
PB146931BS	PB146931BS	FG010358.D	08/12/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146931BL	SDG No.:	N4130
Lab Sample ID:	PB146931BL	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010357.D	1	08/11/22 09:35	08/12/22 13:16	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1670	U	219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	24.4		37 - 130	122%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-FF011221.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-FF011221.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011221.D	1		08/12/22	FF081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	13.8		29 - 130	69%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-FF011231.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-FF011231.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011231.D	1		08/12/22	FF081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	14.2		29 - 130	71%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-FG010348.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-FG010348.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010348.D	1		08/12/22	FG081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.1		29 - 130	86%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	PIBLK-FG010359.D	SDG No.:	N4130
Lab Sample ID:	I.BLK-FG010359.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010359.D	1		08/12/22	FG081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.1		29 - 130	85%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146931BS	SDG No.:	N4130
Lab Sample ID:	PB146931BS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010358.D	1	08/11/22 09:35	08/12/22 13:45	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5540		219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	20.2		37 - 130	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02MS	SDG No.:	N4130
Lab Sample ID:	N4130-01MS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011228.D	1	08/11/22 09:35	08/12/22 12:16	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	13700		253	1930	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	12.2		37 - 130	61%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02MSD	SDG No.:	N4130
Lab Sample ID:	N4130-01MSD	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	13.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011229.D	1	08/11/22 09:35	08/12/22 12:46	PB146931

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	12500		253	1930	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	12.5		37 - 130	62%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Calibration Sequence : FF072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	109747060	109747	FF011119.D
500	57087367	114175	FF011120.D
200	24322005	121610	FF011121.D
100	13358237	133582	FF011122.D
50	7363952	147279	FF011123.D
AVG RF : 125279	**% RSD : 12.177**		**AVG RT : 14.8026**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

Calibration Sequence : FG072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	129039678	129040	FG010241.D
500	65428368	130857	FG010242.D
200	27695413	138477	FG010243.D
100	14808143	148081	FG010244.D
50	8194408	163888	FG010245.D

AVG RF : 142069 **% RSD : 10.082** **AVG RT : 14.8068**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FF011222.D Analyst Name: YP\AJ Analyst Date: 08-12-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	57170809	114342	125279	8.73

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FF011232.D Analyst Name: YP\AJ Analyst Date: 08-12-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	54127262	108255	125279	13.589

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FG010349.D Analyst Name: YP\AJ Analyst Date: 08-12-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	65884334	131769	142069	7.25

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4130 SAS No.: N4130 SDG No.: N4130

DataFile: FG010360.D Analyst Name: YP\AJ Analyst Date: 08-12-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	67633516	135267	142069	4.788

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI **Instrument ID:** FID_G

GC Column: RXI-1MS **ID:** 0.18 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **14.8026**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	I.BLK01	12 Aug 2022 08:35	FF011221.D	14.797	
50 PPM TRPH STD	50 PPM TRPH STD	12 Aug 2022 09:05	FF011222.D	14.800	
SB02	N4130-01	12 Aug 2022 10:18	FF011224.D	14.796	
SB03	N4130-03	12 Aug 2022 10:48	FF011225.D	14.798	
SB05	N4130-05	12 Aug 2022 11:17	FF011226.D	14.798	
SB02MS	N4130-01MS	12 Aug 2022 12:16	FF011228.D	14.798	
SB02MSD	N4130-01MSD	12 Aug 2022 12:46	FF011229.D	14.797	
SB06	N4130-07	12 Aug 2022 13:16	FF011230.D	14.797	
PIBLK02	I.BLK02	12 Aug 2022 13:45	FF011231.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	12 Aug 2022 14:15	FF011232.D	14.800	
PIBLK03	I.BLK03	12 Aug 2022 08:35	FG010348.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	12 Aug 2022 09:05	FG010349.D	14.798	
SB07	N4130-09	12 Aug 2022 10:18	FG010351.D	14.796	
SB01	N4130-15	12 Aug 2022 11:47	FG010354.D	14.799	
SB09	N4130-11	12 Aug 2022 12:16	FG010355.D	14.797	
SB04	N4130-13	12 Aug 2022 12:46	FG010356.D	14.799	
PB146931BL	PB146931BL	12 Aug 2022 13:16	FG010357.D	14.800	
PB146931BS	PB146931BS	12 Aug 2022 13:45	FG010358.D	14.800	
PIBLK04	I.BLK04	12 Aug 2022 14:15	FG010359.D	14.799	
50 PPM TRPH STD	50 PPM TRPH STD	12 Aug 2022 14:45	FG010360.D	14.802	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	14.7068	14.9068

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF081222\
Data File : FF011227.D
Signal(s) : FID2B.ch
Acq On : 12 Aug 2022 11:47
Operator : YP\AJ
Sample : N4130-07
Misc :
ALS Vial : 58 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
SB06

Integration File: Sample.e
Quant Time: Aug 12 12:24:46 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF072822.M
Quant Title :
QLast Update : Thu Jul 28 14:46:22 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.799	2037411	18.746 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

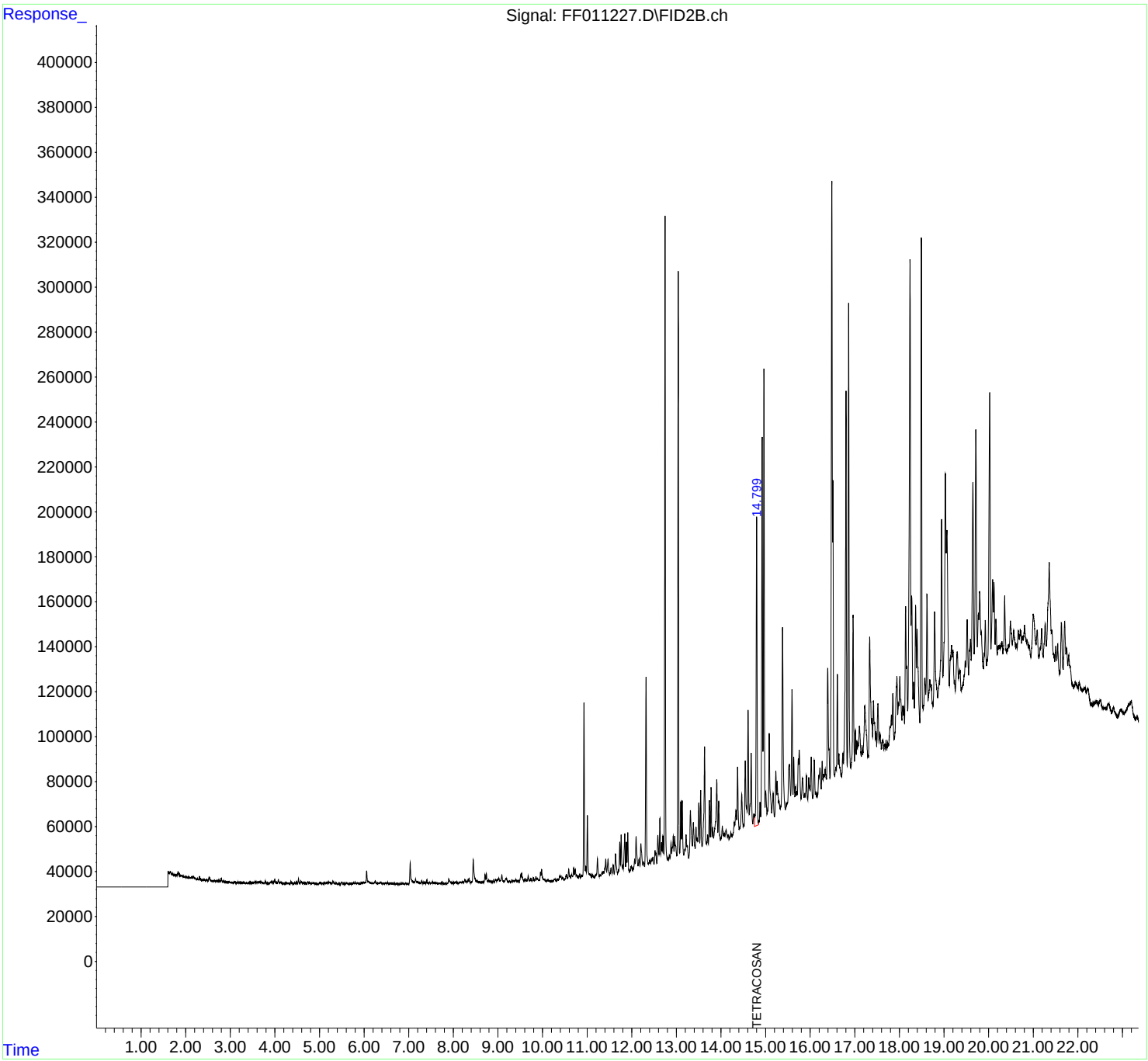
Quantitation Report (QT Reviewed)

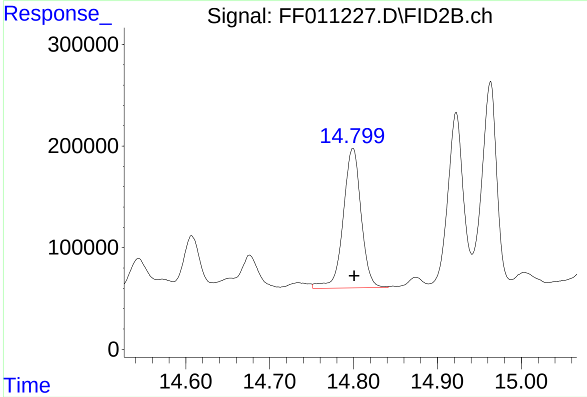
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF081222\
Data File : FF011227.D
Signal(s) : FID2B.ch
Acq On : 12 Aug 2022 11:47
Operator : YP\AJ
Sample : N4130-07
Misc :
ALS Vial : 58 Sample Multiplier: 1

Instrument :
FID_F
ClientSampleId :
SB06

Integration File: Sample.e
Quant Time: Aug 12 12:24:46 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF072822.M
Quant Title :
QLast Update : Thu Jul 28 14:46:22 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.799 min
Delta R.T.: -0.001 min
Response: 2037411
Conc: 18.75 ug/ml

Instrument :
FID_F
ClientSampleId :
SB06

9

A
B
C
D
E
F

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_F\Data\FF081222\
Data File : FF011227.D
Signal(s) : FID2B.ch
Acq On : 12 Aug 2022 11:47
Sample : N4130-07
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_F\Method\FF072822.M
Title :

Signal : FID2B.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.391	4.377	4.414	HH	2104	38718	0.69%	0.027%
2	4.432	4.414	4.450	HH	1773	35680	0.64%	0.025%
3	4.454	4.450	4.458	HH	1667	7048	0.13%	0.005%
4	4.466	4.458	4.474	HH	1698	16239	0.29%	0.011%
5	4.488	4.474	4.513	HH	2139	41889	0.75%	0.029%
6	4.529	4.513	4.557	HH	3787	63809	1.14%	0.044%
7	4.582	4.557	4.630	HH	2577	86729	1.55%	0.060%
8	4.642	4.630	4.657	HH	1781	27801	0.50%	0.019%
9	4.661	4.657	4.665	HH	1670	7243	0.13%	0.005%
10	4.679	4.665	4.705	HH	1705	38842	0.69%	0.027%
11	4.736	4.705	4.761	HH	2289	60387	1.08%	0.042%
12	4.777	4.761	4.801	HH	1964	42273	0.75%	0.029%
13	4.819	4.801	4.834	HH	1667	30549	0.55%	0.021%
14	4.858	4.834	4.890	HH	1929	55594	0.99%	0.038%
15	4.894	4.890	4.904	HH	1538	11944	0.21%	0.008%
16	4.908	4.904	4.927	HH	1594	20903	0.37%	0.014%
17	4.935	4.927	4.949	HH	1519	18800	0.34%	0.013%
18	4.953	4.949	4.963	HH	1375	11476	0.20%	0.008%
19	4.970	4.963	4.986	HH	1396	19161	0.34%	0.013%
20	5.003	4.986	5.051	HH	1956	65863	1.18%	0.045%
21	5.061	5.051	5.087	HH	1602	33208	0.59%	0.023%
22	5.094	5.087	5.099	HH	1676	12154	0.22%	0.008%
23	5.120	5.099	5.150	HH	2012	54570	0.97%	0.038%
24	5.179	5.150	5.214	HH	2145	73091	1.30%	0.050%
25	5.218	5.214	5.223	HH	2031	10666	0.19%	0.007%
26	5.232	5.223	5.280	HH	2037	61220	1.09%	0.042%
27	5.303	5.280	5.331	HH	2646	58904	1.05%	0.041%
28	5.338	5.331	5.357	HH	1659	24350	0.43%	0.017%
29	5.375	5.357	5.415	HH	1639	49254	0.88%	0.034%
30	5.430	5.415	5.450	HH	1463	28136	0.50%	0.019%
31	5.499	5.450	5.554	HH	2199	95042	1.70%	0.066%
32	5.556	5.554	5.562	HH	1369	6495	0.12%	0.004%
33	5.578	5.562	5.592	HH	1638	26336	0.47%	0.018%
34	5.608	5.592	5.646	HH	1826	49542	0.88%	0.034%
35	5.650	5.646	5.667	HH	1400	16960	0.30%	0.012%
36	5.679	5.667	5.717	HH	1467	40717	0.73%	0.028%

Page 1

37	5.761	5.717	5.776	HH	1727	53853	0.96%	0.037%
38	5.780	5.776	5.784	HH	1628	7357	0.13%	0.005%
39	5.802	5.784	5.819	HH	1876	36644	0.65%	0.025%
40	5.828	5.819	5.855	HH	1702	34207	0.61%	0.024%
41	5.867	5.855	5.895	HH	1714	37334	0.67%	0.026%
42	5.944	5.895	5.950	HH	1862	54512	0.97%	0.038%
43	5.962	5.950	5.975	HH	2000	29130	0.52%	0.020%
44	5.988	5.975	6.005	HH	2049	34597	0.62%	0.024%
45	6.026	6.005	6.032	HH	2008	30754	0.55%	0.021%
46	6.057	6.032	6.085	HH	7215	122093	2.18%	0.084%
47	6.099	6.085	6.155	HH	2478	87417	1.56%	0.060%
48	6.171	6.155	6.198	HH	1877	43268	0.77%	0.030%
49	6.249	6.198	6.307	HH	2699	121970	2.18%	0.084%
50	6.314	6.307	6.318	HH	1691	10625	0.19%	0.007%
51	6.322	6.318	6.333	HH	1604	13703	0.24%	0.009%
52	6.336	6.333	6.344	HH	1565	10631	0.19%	0.007%
53	6.369	6.344	6.402	HH	2124	59841	1.07%	0.041%
54	6.413	6.402	6.435	HH	1718	32575	0.58%	0.022%
55	6.450	6.435	6.455	HH	1723	18082	0.32%	0.012%
56	6.471	6.455	6.494	HH	1696	37693	0.67%	0.026%
57	6.497	6.494	6.503	HH	1617	8560	0.15%	0.006%
58	6.527	6.503	6.580	HH	2059	76094	1.36%	0.053%
59	6.589	6.580	6.594	HH	1584	12756	0.23%	0.009%
60	6.599	6.594	6.637	HH	1636	38577	0.69%	0.027%
61	6.644	6.637	6.665	HH	1509	24618	0.44%	0.017%
62	6.676	6.665	6.706	HH	1558	35867	0.64%	0.025%
63	6.712	6.706	6.732	HH	1398	20784	0.37%	0.014%
64	6.737	6.732	6.744	HH	1422	9368	0.17%	0.006%
65	6.747	6.744	6.765	HH	1353	16239	0.29%	0.011%
66	6.806	6.765	6.828	HH	1643	53278	0.95%	0.037%
67	6.856	6.828	6.868	HH	1633	35756	0.64%	0.025%
68	6.869	6.868	6.904	HH	1627	31825	0.57%	0.022%
69	6.926	6.904	6.957	HH	1644	46776	0.83%	0.032%
70	6.963	6.957	6.967	HH	1468	8213	0.15%	0.006%
71	6.972	6.967	6.995	HH	1439	23471	0.42%	0.016%
72	7.032	6.995	7.123	HH	10898	274527	4.90%	0.189%
73	7.153	7.123	7.184	HH	3547	93204	1.66%	0.064%
74	7.193	7.184	7.216	HH	2345	41807	0.75%	0.029%
75	7.221	7.216	7.237	HH	1932	23862	0.43%	0.016%
76	7.244	7.237	7.266	HH	1991	31846	0.57%	0.022%
77	7.288	7.266	7.320	HH	2801	65862	1.18%	0.045%
78	7.340	7.320	7.356	HH	2242	42828	0.76%	0.030%
79	7.359	7.356	7.385	HH	1967	32801	0.59%	0.023%
80	7.404	7.385	7.440	HH	2969	70976	1.27%	0.049%
81	7.444	7.440	7.455	HH	1782	14810	0.26%	0.010%
82	7.471	7.455	7.503	HH	2196	52342	0.93%	0.036%
83	7.534	7.503	7.572	HH	2193	77006	1.37%	0.053%
84	7.577	7.572	7.582	HH	1754	10339	0.18%	0.007%
85	7.598	7.582	7.604	HH	1832	22684	0.40%	0.016%
86	7.608	7.604	7.617	HH	1805	14129	0.25%	0.010%
87	7.628	7.617	7.656	HH	1704	37599	0.67%	0.026%
88	7.660	7.656	7.664	HH	1599	8151	0.15%	0.006%
89	7.670	7.664	7.687	HH	1606	21367	0.38%	0.015%

90	7.703	7.687	7.730	HH	1614	39120	0.70%	0.027%
91	7.749	7.730	7.784	HH	1925	53158	0.95%	0.037%
92	7.810	7.784	7.818	HH	1661	31117	0.56%	0.021%
93	7.824	7.818	7.853	HH	1667	33492	0.60%	0.023%
94	7.900	7.853	7.960	HH	3240	140873	2.51%	0.097%
95	7.964	7.960	7.985	HH	1822	26370	0.47%	0.018%
96	7.992	7.985	7.995	HH	1806	10551	0.19%	0.007%
97	8.001	7.995	8.005	HH	1819	10847	0.19%	0.007%
98	8.008	8.005	8.015	HH	1883	9600	0.17%	0.007%
99	8.041	8.015	8.065	HH	2077	57878	1.03%	0.040%
100	8.078	8.065	8.092	HH	2134	32309	0.58%	0.022%
101	8.100	8.092	8.120	HH	1930	29528	0.53%	0.020%
102	8.145	8.120	8.155	HH	2037	40896	0.73%	0.028%
103	8.166	8.155	8.182	HH	2204	32999	0.59%	0.023%
104	8.201	8.182	8.219	HH	2213	45452	0.81%	0.031%
105	8.262	8.219	8.280	HH	3248	90425	1.61%	0.062%
106	8.290	8.280	8.304	HH	2544	34210	0.61%	0.024%
107	8.324	8.304	8.334	HH	2892	47035	0.84%	0.032%
108	8.351	8.334	8.387	HH	3527	85735	1.53%	0.059%
109	8.414	8.387	8.419	HH	2362	41139	0.73%	0.028%
110	8.447	8.419	8.525	HH	12150	323791	5.78%	0.223%
111	8.537	8.525	8.565	HH	2578	56835	1.01%	0.039%
112	8.579	8.565	8.617	HH	2267	65844	1.18%	0.045%
113	8.630	8.617	8.653	HH	2138	45222	0.81%	0.031%
114	8.711	8.653	8.727	HH	5617	136038	2.43%	0.094%
115	8.742	8.727	8.776	HH	5962	113310	2.02%	0.078%
116	8.792	8.776	8.813	HH	2836	57388	1.02%	0.040%
117	8.826	8.813	8.838	HH	2562	36852	0.66%	0.025%
118	8.851	8.838	8.872	HH	2520	48655	0.87%	0.034%
119	8.894	8.872	8.920	HH	2853	70759	1.26%	0.049%
120	8.949	8.920	8.967	HH	3338	82151	1.47%	0.057%
121	8.983	8.967	9.002	HH	3269	64302	1.15%	0.044%
122	9.020	9.002	9.052	HH	4099	97442	1.74%	0.067%
123	9.089	9.052	9.127	HH	5431	155198	2.77%	0.107%
124	9.131	9.127	9.142	HH	2411	21396	0.38%	0.015%
125	9.178	9.142	9.241	HH	3895	175286	3.13%	0.121%
126	9.258	9.241	9.288	HH	2723	67306	1.20%	0.046%
127	9.313	9.288	9.329	HH	3171	62493	1.12%	0.043%
128	9.347	9.329	9.359	HH	2818	47142	0.84%	0.033%
129	9.370	9.359	9.382	HH	2768	36984	0.66%	0.026%
130	9.398	9.382	9.433	HH	3339	86672	1.55%	0.060%
131	9.447	9.433	9.475	HH	3104	67048	1.20%	0.046%
132	9.510	9.475	9.519	HH	5151	97157	1.73%	0.067%
133	9.531	9.519	9.588	HH	6109	169559	3.03%	0.117%
134	9.610	9.588	9.627	HH	3772	74650	1.33%	0.052%
135	9.643	9.627	9.658	HH	2973	54967	0.98%	0.038%
136	9.677	9.658	9.710	HH	4874	113087	2.02%	0.078%
137	9.714	9.710	9.721	HH	2924	19163	0.34%	0.013%
138	9.740	9.721	9.765	HH	3787	82787	1.48%	0.057%
139	9.790	9.765	9.829	HH	4018	125421	2.24%	0.087%
140	9.854	9.829	9.874	HH	4367	98630	1.76%	0.068%
141	9.890	9.874	9.924	HH	3789	100715	1.80%	0.070%

rteres

142	9.955	9.924	9.967	HH	6491	117762	2.10%	0.081%
143	9.979	9.967	10.030	HH	7763	186167	3.32%	0.128%
144	10.040	10.030	10.081	HH	3352	92879	1.66%	0.064%
145	10.087	10.081	10.091	HH	2619	14971	0.27%	0.010%
146	10.117	10.091	10.141	HH	3155	86386	1.54%	0.060%
147	10.161	10.141	10.186	HH	2665	69667	1.24%	0.048%
148	10.199	10.186	10.210	HH	2568	35983	0.64%	0.025%
149	10.233	10.210	10.241	HH	2732	48498	0.87%	0.033%
150	10.259	10.241	10.264	HH	3350	42822	0.76%	0.030%
151	10.276	10.264	10.314	HH	3562	93592	1.67%	0.065%
152	10.340	10.314	10.359	HH	3472	86417	1.54%	0.060%
153	10.384	10.359	10.400	HH	4830	103002	1.84%	0.071%
154	10.412	10.400	10.435	HH	4907	88480	1.58%	0.061%
155	10.454	10.435	10.480	HH	4266	101572	1.81%	0.070%
156	10.483	10.480	10.495	HH	3275	29307	0.52%	0.020%
157	10.533	10.495	10.563	HH	5597	176269	3.15%	0.122%
158	10.586	10.563	10.633	HH	7931	225742	4.03%	0.156%
159	10.648	10.633	10.674	HH	5421	122284	2.18%	0.084%
160	10.697	10.674	10.714	HH	8675	156690	2.80%	0.108%
161	10.733	10.714	10.752	HH	7941	151775	2.71%	0.105%
162	10.761	10.752	10.797	HH	5315	129337	2.31%	0.089%
163	10.806	10.797	10.813	HH	4573	42683	0.76%	0.029%
164	10.832	10.813	10.849	HH	5692	106592	1.90%	0.074%
165	10.873	10.849	10.887	HH	5147	107945	1.93%	0.074%
166	10.928	10.887	10.959	HH	82059	1083806	19.34%	0.748%
167	10.970	10.959	10.984	HH	9225	123095	2.20%	0.085%
168	11.005	10.984	11.101	HH	31884	686871	12.26%	0.474%
169	11.118	11.101	11.137	HH	5250	104375	1.86%	0.072%
170	11.142	11.137	11.167	HH	4707	82263	1.47%	0.057%
171	11.201	11.167	11.209	HH	5520	126568	2.26%	0.087%
172	11.230	11.209	11.269	HH	12677	282820	5.05%	0.195%
173	11.296	11.269	11.312	HH	5396	133958	2.39%	0.092%
174	11.339	11.312	11.350	HH	6352	133889	2.39%	0.092%
175	11.365	11.350	11.378	HH	6909	108200	1.93%	0.075%
176	11.395	11.378	11.401	HH	8547	104684	1.87%	0.072%
177	11.417	11.401	11.438	HH	12441	210484	3.76%	0.145%
178	11.467	11.438	11.504	HH	12300	336958	6.01%	0.233%
179	11.534	11.504	11.560	HH	8495	230252	4.11%	0.159%
180	11.584	11.560	11.606	HH	9890	214387	3.83%	0.148%
181	11.637	11.606	11.679	HH	14572	409340	7.31%	0.282%
182	11.731	11.679	11.746	HH	20042	418145	7.46%	0.289%
183	11.762	11.746	11.785	HH	23199	358748	6.40%	0.248%
184	11.793	11.785	11.808	HH	9167	120039	2.14%	0.083%
185	11.843	11.808	11.862	HH	23755	485946	8.67%	0.335%
186	11.879	11.862	11.894	HH	20040	280543	5.01%	0.194%
187	11.911	11.894	11.954	HH	24228	461789	8.24%	0.319%
188	11.986	11.954	12.021	HH	9162	325929	5.82%	0.225%
189	12.065	12.021	12.078	HH	12036	326673	5.83%	0.225%
190	12.097	12.078	12.142	HH	22487	558424	9.97%	0.385%
191	12.164	12.142	12.184	HH	12301	270509	4.83%	0.187%
192	12.205	12.184	12.248	HH	19274	538024	9.60%	0.371%
193	12.267	12.248	12.289	HH	11206	251892	4.50%	0.174%
194	12.321	12.289	12.369	HH	93449	1536902	27.43%	1.061%

rteres

195	12.404	12.369	12.423	HH	11931	363455	6.49%	0.251%
196	12.452	12.423	12.463	HH	12571	276437	4.93%	0.191%
197	12.476	12.463	12.502	HH	13132	274170	4.89%	0.189%
198	12.522	12.502	12.534	HH	16214	262245	4.68%	0.181%
199	12.540	12.534	12.564	HH	14968	233174	4.16%	0.161%
200	12.585	12.564	12.611	HH	23039	490890	8.76%	0.339%
201	12.631	12.611	12.651	HH	30664	515736	9.20%	0.356%
202	12.668	12.651	12.682	HH	19768	328320	5.86%	0.227%
203	12.698	12.682	12.719	HH	22822	414304	7.39%	0.286%
204	12.747	12.719	12.800	HH	298375	3831083	68.37%	2.644%
205	12.813	12.800	12.828	HH	13275	216047	3.86%	0.149%
206	12.844	12.828	12.862	HH	14200	270376	4.83%	0.187%
207	12.881	12.862	12.896	HH	19673	340187	6.07%	0.235%
208	12.910	12.896	12.915	HH	17730	192799	3.44%	0.133%
209	12.930	12.915	12.949	HH	22754	388111	6.93%	0.268%
210	12.963	12.949	13.011	HH	22529	674816	12.04%	0.466%
211	13.043	13.011	13.072	HH	274113	3362594	60.01%	2.320%
212	13.099	13.072	13.116	HH	37961	657369	11.73%	0.454%
213	13.131	13.116	13.165	HH	38402	725896	12.95%	0.501%
214	13.189	13.165	13.200	HH	16747	320791	5.72%	0.221%
215	13.218	13.200	13.235	HH	23280	429328	7.66%	0.296%
216	13.247	13.235	13.277	HH	18402	401992	7.17%	0.277%
217	13.315	13.277	13.361	HH	34057	1127131	20.12%	0.778%
218	13.381	13.361	13.421	HH	28748	794650	14.18%	0.548%
219	13.441	13.421	13.458	HH	26693	483554	8.63%	0.334%
220	13.468	13.458	13.480	HH	21904	281527	5.02%	0.194%
221	13.504	13.480	13.525	HH	37444	770612	13.75%	0.532%
222	13.545	13.525	13.575	HH	43024	835004	14.90%	0.576%
223	13.633	13.575	13.671	HH	62416	1780623	31.78%	1.229%
224	13.700	13.671	13.718	HH	23332	577847	10.31%	0.399%
225	13.740	13.718	13.760	HH	38549	725745	12.95%	0.501%
226	13.778	13.760	13.800	HH	44250	763762	13.63%	0.527%
227	13.816	13.800	13.835	HH	26484	512185	9.14%	0.353%
228	13.905	13.835	13.930	HH	47613	1753356	31.29%	1.210%
229	13.950	13.930	13.995	HH	38141	1062058	18.95%	0.733%
230	14.030	13.995	14.050	HH	27014	775185	13.83%	0.535%
231	14.073	14.050	14.087	HH	24136	527938	9.42%	0.364%
232	14.114	14.087	14.145	HH	25360	830331	14.82%	0.573%
233	14.160	14.145	14.181	HH	22984	477805	8.53%	0.330%
234	14.196	14.181	14.203	HH	22158	285171	5.09%	0.197%
235	14.220	14.203	14.237	HH	24124	471555	8.42%	0.325%
236	14.253	14.237	14.258	HH	23104	288067	5.14%	0.199%
237	14.297	14.258	14.311	HH	28964	835151	14.90%	0.576%
238	14.336	14.311	14.351	HH	34055	746815	13.33%	0.515%
239	14.372	14.351	14.406	HH	53343	1224868	21.86%	0.845%
240	14.419	14.406	14.425	HH	26571	299899	5.35%	0.207%
241	14.465	14.425	14.501	HH	41306	1452553	25.92%	1.002%
242	14.544	14.501	14.567	HH	56169	1495908	26.70%	1.032%
243	14.572	14.567	14.585	HH	35938	376666	6.72%	0.260%
244	14.607	14.585	14.633	HH	78682	1474829	26.32%	1.018%
245	14.676	14.633	14.713	HH	59612	1874557	33.45%	1.294%
246	14.734	14.713	14.751	HH	32524	708665	12.65%	0.489%

rteres

247	14.799	14.751	14.841	HH	164710	3516386	62.75%	2.427%
248	14.847	14.841	14.851	HH	29108	173429	3.10%	0.120%
249	14.874	14.851	14.890	HH	37717	761320	13.59%	0.525%
250	14.922	14.890	14.941	HH	200102	3090307	55.15%	2.133%
251	14.963	14.941	14.988	HH	230865	3297321	58.84%	2.275%
252	15.003	14.988	15.031	HH	42601	982334	17.53%	0.678%
253	15.081	15.031	15.137	HH	68354	2690635	48.02%	1.857%
254	15.169	15.137	15.199	HH	41700	1341672	23.94%	0.926%
255	15.230	15.199	15.246	HH	51476	1168442	20.85%	0.806%
256	15.260	15.246	15.298	HH	47245	1299034	23.18%	0.896%
257	15.302	15.298	15.322	HH	37990	527565	9.42%	0.364%
258	15.334	15.322	15.341	HH	35865	398292	7.11%	0.275%
259	15.380	15.341	15.445	HH	115353	3529118	62.98%	2.435%
260	15.463	15.445	15.473	HH	37275	628200	11.21%	0.434%
261	15.486	15.473	15.491	HH	37571	396469	7.08%	0.274%
262	15.523	15.491	15.529	HH	53764	1026112	18.31%	0.708%
263	15.534	15.529	15.563	HH	54659	983875	17.56%	0.679%
264	15.593	15.563	15.615	HH	87947	1872944	33.42%	1.292%
265	15.631	15.615	15.660	HH	57758	1281500	22.87%	0.884%
266	15.677	15.660	15.690	HH	44665	763997	13.63%	0.527%
267	15.699	15.690	15.709	HH	42655	474974	8.48%	0.328%
268	15.734	15.709	15.742	HH	57068	997936	17.81%	0.689%
269	15.755	15.742	15.794	HH	60931	1580569	28.21%	1.091%
270	15.827	15.794	15.857	HH	48567	1657324	29.58%	1.144%
271	15.872	15.857	15.884	HH	41140	648773	11.58%	0.448%
272	15.917	15.884	15.945	HH	49665	1582810	28.25%	1.092%
273	15.968	15.945	16.000	HH	48733	1479880	26.41%	1.021%
274	16.024	16.000	16.054	HH	57879	1549224	27.65%	1.069%
275	16.093	16.054	16.115	HH	56114	1686011	30.09%	1.163%
276	16.125	16.115	16.145	HH	42286	761917	13.60%	0.526%
277	16.155	16.145	16.168	HH	41288	559056	9.98%	0.386%
278	16.193	16.168	16.202	HH	49632	950435	16.96%	0.656%
279	16.220	16.202	16.248	HH	52796	1343371	23.97%	0.927%
280	16.269	16.248	16.288	HH	56014	1205968	21.52%	0.832%
281	16.302	16.288	16.314	HH	50216	764319	13.64%	0.527%
282	16.335	16.314	16.365	HH	52474	1556600	27.78%	1.074%
283	16.394	16.365	16.443	HH	97358	3093964	55.22%	2.135%
284	16.486	16.443	16.502	HH	313799	5603423	100.00%	3.867%
285	16.510	16.502	16.550	HH	180622	2799965	49.97%	1.932%
286	16.578	16.550	16.588	HH	53196	1164563	20.78%	0.804%
287	16.610	16.588	16.633	HH	94588	1903833	33.98%	1.314%
288	16.645	16.633	16.703	HH	59011	2235212	39.89%	1.542%
289	16.733	16.703	16.746	HH	59585	1430816	25.53%	0.987%
290	16.804	16.746	16.831	HH	220648	5311394	94.79%	3.665%
291	16.863	16.831	16.908	HH	259690	5164379	92.16%	3.564%
292	16.962	16.908	16.994	HH	121088	3779821	67.46%	2.608%
293	17.015	16.994	17.033	HH	69807	1480136	26.41%	1.021%
294	17.044	17.033	17.060	HH	64663	1004019	17.92%	0.693%
295	17.073	17.060	17.080	HH	63626	763648	13.63%	0.527%

Sum of corrected areas: 144912942

FF072822.M Fri Aug 12 12:26:12 2022

Page 6

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081222\
Data File : FG010352.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 10:48
Operator : YP\AJ
Sample : N4130-11
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: Sample.e
Quant Time: Aug 12 11:20:14 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB09

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.800	2124266	16.722 ug/mlm
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081222\
Data File : FG010352.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 10:48
Operator : YP\AJ
Sample : N4130-11
Misc :
ALS Vial : 6 Sample Multiplier: 1

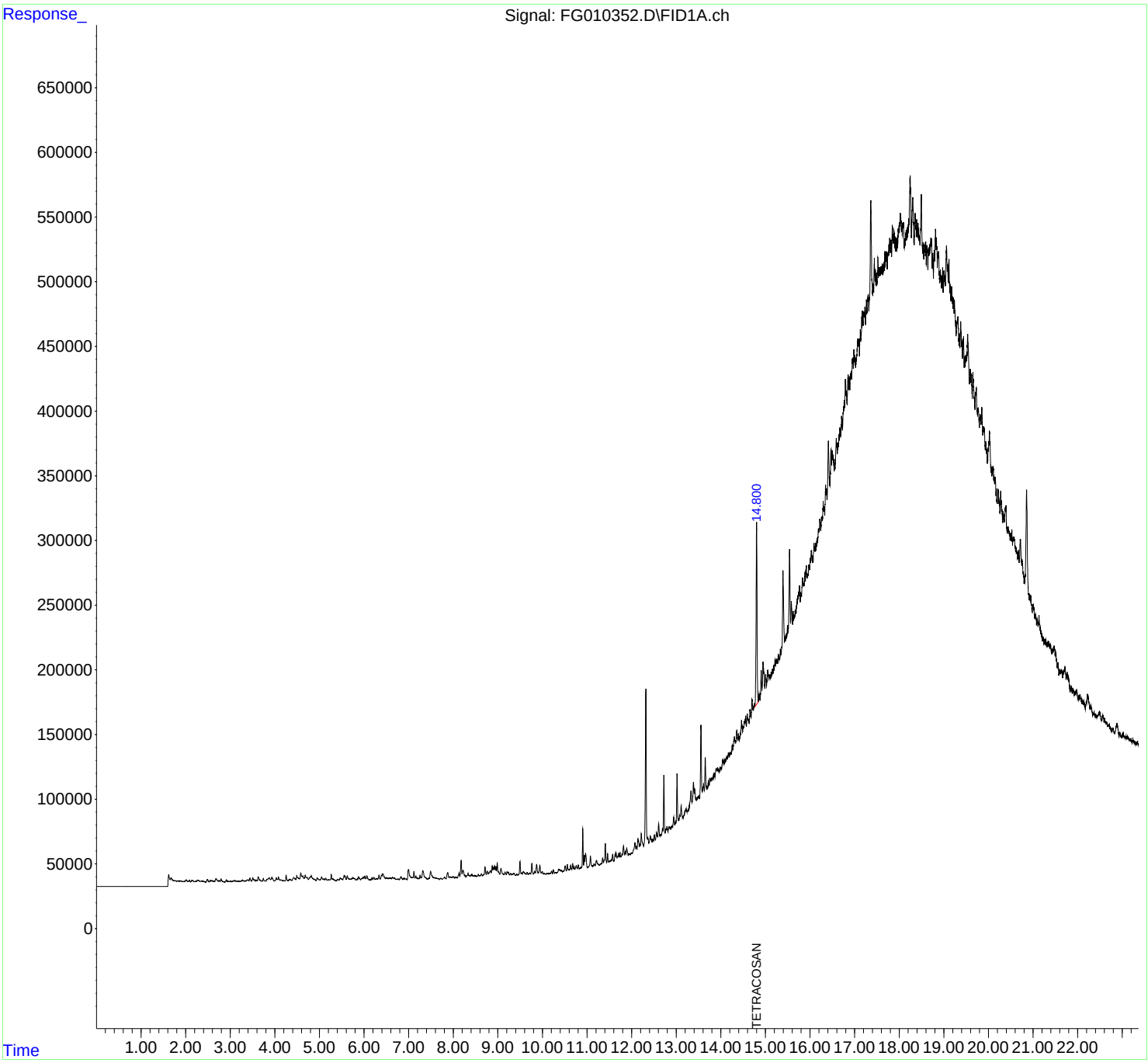
Integration File: Sample.e
Quant Time: Aug 12 11:20:14 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

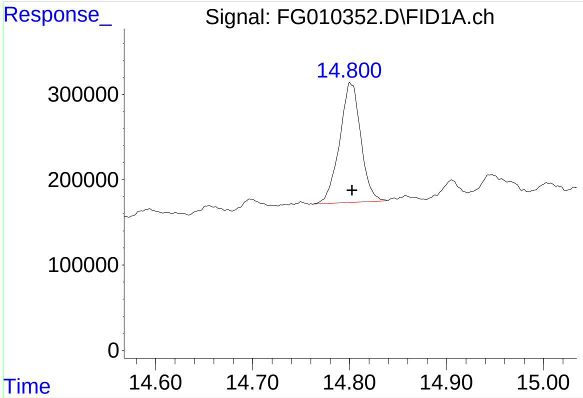
Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB09

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

9
A
B
C
D
E
F





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.800 min
Delta R.T.: -0.003 min
Response: 2124266
Conc: 16.72 ug/ml

Instrument :
FID_G
ClientSampleId :
SB09

Manual Integrations APPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

9

A
B
C
D
E
F

Instrument :
FID_G
ClientSampleId :
SB09

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG0812
Data File : FG010352.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 10:48
Sample : N4130-11
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.321	4.300	4.335	BH	1190	12931	0.11%	0.003%
2	4.348	4.335	4.370	HH	1084	15454	0.13%	0.003%
3	4.425	4.370	4.456	HH	2610	72187	0.61%	0.015%
4	4.458	4.456	4.472	HH	1445	10745	0.09%	0.002%
5	4.491	4.472	4.557	HH	3935	108986	0.93%	0.023%
6	4.581	4.557	4.618	HH	5992	135718	1.16%	0.028%
7	4.629	4.618	4.661	HH	3550	66135	0.56%	0.014%
8	4.681	4.661	4.705	HH	4341	79477	0.68%	0.016%
9	4.722	4.705	4.753	HH	2638	57223	0.49%	0.012%
10	4.777	4.753	4.784	HH	2351	30852	0.26%	0.006%
11	4.798	4.784	4.807	HH	3063	37372	0.32%	0.008%
12	4.819	4.807	4.877	HH	3824	92289	0.79%	0.019%
13	4.886	4.877	4.923	HH	1123	20010	0.17%	0.004%
14	4.948	4.923	5.008	HH	2276	57182	0.49%	0.012%
15	5.048	5.008	5.090	HH	2970	73259	0.62%	0.015%
16	5.104	5.090	5.123	HH	1445	19994	0.17%	0.004%
17	5.141	5.123	5.178	HH	1927	33581	0.29%	0.007%
18	5.181	5.178	5.186	HH	510	2454	0.02%	0.001%
19	5.204	5.186	5.221	HH	873	13930	0.12%	0.003%
20	5.234	5.221	5.244	HH	771	9524	0.08%	0.002%
21	5.266	5.244	5.289	HH	4654	61718	0.53%	0.013%
22	5.301	5.289	5.328	HH	1410	25624	0.22%	0.005%
23	5.333	5.328	5.378	HH	605	5781	0.05%	0.001%
24	5.406	5.378	5.421	PH	1204	16024	0.14%	0.003%
25	5.425	5.421	5.439	HH	726	6693	0.06%	0.001%
26	5.465	5.439	5.488	HH	2246	42039	0.36%	0.009%
27	5.503	5.488	5.522	HH	1575	25730	0.22%	0.005%
28	5.553	5.522	5.564	HH	4098	60950	0.52%	0.013%
29	5.576	5.564	5.599	HH	3761	53051	0.45%	0.011%
30	5.625	5.599	5.676	HH	3803	90727	0.77%	0.019%
31	5.689	5.676	5.706	HH	1397	21461	0.18%	0.004%
32	5.724	5.706	5.737	HH	2046	28051	0.24%	0.006%
33	5.754	5.737	5.782	HH	2513	50764	0.43%	0.011%
34	5.792	5.782	5.821	HH	1703	26152	0.22%	0.005%
35	5.845	5.821	5.857	HH	1322	18872	0.16%	0.004%
36	5.874	5.857	5.923	HH	3082	70916	0.60%	0.015%

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

rteres

37	5.943	5.923	5.951	HH	1650	21940	0.19%	0.005%
38	5.960	5.951	5.969	HH	1808	18469		
39	5.987	5.969	6.003	HH	2888	46490		
40	6.021	6.003	6.038	HH	3708	54532		
41	6.064	6.038	6.127	HH	3757	94125		
42	6.143	6.127	6.157	HH	936	14379		
43	6.178	6.157	6.197	HH	2496	35524	0.30%	0.007%
44	6.220	6.197	6.247	HH	2478	51349	0.44%	0.011%
45	6.289	6.247	6.309	HH	1774	49879	0.42%	0.010%
46	6.335	6.309	6.358	HH	4325	74546	0.63%	0.015%
47	6.392	6.358	6.403	HH	4317	78073	0.66%	0.016%
48	6.414	6.403	6.485	HH	5432	173846	1.48%	0.036%
49	6.502	6.485	6.517	HH	2562	41141	0.35%	0.009%
50	6.526	6.517	6.546	HH	1948	30905	0.26%	0.006%
51	6.562	6.546	6.568	HH	1992	23328	0.20%	0.005%
52	6.572	6.568	6.587	HH	2026	21825	0.19%	0.005%
53	6.598	6.587	6.616	HH	2117	31514	0.27%	0.007%
54	6.638	6.616	6.673	HH	2592	70061	0.60%	0.015%
55	6.682	6.673	6.730	HH	2105	47825	0.41%	0.010%
56	6.746	6.730	6.764	HH	1284	23383	0.20%	0.005%
57	6.768	6.764	6.789	HH	1276	15545	0.13%	0.003%
58	6.826	6.789	6.861	HH	3173	82249	0.70%	0.017%
59	6.865	6.861	6.876	HH	1377	10712	0.09%	0.002%
60	6.895	6.876	6.912	HH	2214	34852	0.30%	0.007%
61	6.921	6.912	6.933	HH	1391	16885	0.14%	0.004%
62	6.940	6.933	6.967	HH	1354	23498	0.20%	0.005%
63	6.998	6.967	7.059	HH	8660	254787	2.17%	0.053%
64	7.076	7.059	7.097	HH	2660	56258	0.48%	0.012%
65	7.118	7.097	7.143	HH	7177	107965	0.92%	0.022%
66	7.162	7.143	7.182	HH	3566	60780	0.52%	0.013%
67	7.192	7.182	7.209	HH	2240	30862	0.26%	0.006%
68	7.221	7.209	7.237	HH	1909	27981	0.24%	0.006%
69	7.255	7.237	7.272	HH	4344	60037	0.51%	0.012%
70	7.317	7.272	7.408	HH	7815	304051	2.59%	0.063%
71	7.409	7.408	7.433	HH	1564	19865	0.17%	0.004%
72	7.451	7.433	7.462	HH	2128	28736	0.24%	0.006%
73	7.492	7.462	7.553	HH	7361	231099	1.97%	0.048%
74	7.560	7.553	7.585	HH	2624	46387	0.39%	0.010%
75	7.598	7.585	7.619	HH	2356	41705	0.36%	0.009%
76	7.632	7.619	7.658	HH	2047	41705	0.36%	0.009%
77	7.662	7.658	7.694	HH	1701	32098	0.27%	0.007%
78	7.724	7.694	7.754	HH	1955	54140	0.46%	0.011%
79	7.806	7.754	7.834	HH	2805	91881	0.78%	0.019%
80	7.877	7.834	7.911	HH	6358	173898	1.48%	0.036%
81	7.927	7.911	7.944	HH	3114	56338	0.48%	0.012%
82	7.955	7.944	7.974	HH	2795	47088	0.40%	0.010%
83	7.998	7.974	8.012	HH	3176	62691	0.53%	0.013%
84	8.016	8.012	8.034	HH	2900	33926	0.29%	0.007%
85	8.052	8.034	8.070	HH	3040	53265	0.45%	0.011%
86	8.082	8.070	8.092	HH	2388	29082	0.25%	0.006%
87	8.130	8.092	8.146	HH	6029	133458	1.14%	0.028%
88	8.177	8.146	8.198	HH	15607	276666	2.36%	0.057%
89	8.220	8.198	8.251	HH	8129	207556	1.77%	0.043%

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

rteres

90	8.262	8.251	8.279	HH	4430	62478	0.53%	0.013%
91	8.303	8.279	8.309	HH	3908	62154		
92	8.331	8.309	8.353	HH	5748	122637		
93	8.358	8.353	8.376	HH	4097	51430		
94	8.395	8.376	8.404	HH	4124	66552		
95	8.418	8.404	8.434	HH	5257	80095		
96	8.448	8.434	8.464	HH	4159	67034	0.57%	0.014%
97	8.479	8.464	8.493	HH	4133	66459	0.57%	0.014%
98	8.508	8.493	8.524	HH	3996	67830	0.58%	0.014%
99	8.561	8.524	8.583	HH	4912	138649	1.18%	0.029%
100	8.593	8.583	8.606	HH	4036	51617	0.44%	0.011%
101	8.631	8.606	8.655	HH	5191	129240	1.10%	0.027%
102	8.681	8.655	8.690	HH	4771	89483	0.76%	0.019%
103	8.713	8.690	8.740	HH	10702	220746	1.88%	0.046%
104	8.764	8.740	8.785	HH	7443	168576	1.44%	0.035%
105	8.798	8.785	8.806	HH	6192	74984	0.64%	0.016%
106	8.835	8.806	8.851	HH	7784	188807	1.61%	0.039%
107	8.874	8.851	8.888	HH	11577	199994	1.70%	0.041%
108	8.900	8.888	8.909	HH	10011	117293	1.00%	0.024%
109	8.923	8.909	8.942	HH	11405	194806	1.66%	0.040%
110	8.956	8.942	8.970	HH	10870	155238	1.32%	0.032%
111	8.987	8.970	9.005	HH	13659	215452	1.83%	0.045%
112	9.010	9.005	9.045	HH	7245	143837	1.22%	0.030%
113	9.069	9.045	9.122	HH	9572	316459	2.69%	0.066%
114	9.130	9.122	9.142	HH	5146	59428	0.51%	0.012%
115	9.160	9.142	9.189	HH	6856	159163	1.35%	0.033%
116	9.208	9.189	9.224	HH	7059	127774	1.09%	0.027%
117	9.238	9.224	9.265	HH	6519	137730	1.17%	0.029%
118	9.289	9.265	9.307	HH	5617	130097	1.11%	0.027%
119	9.321	9.307	9.335	HH	5147	79084	0.67%	0.016%
120	9.352	9.335	9.362	HH	5688	88120	0.75%	0.018%
121	9.367	9.362	9.392	HH	5601	89656	0.76%	0.019%
122	9.427	9.392	9.448	HH	5162	151102	1.29%	0.031%
123	9.467	9.448	9.473	HH	5089	70299	0.60%	0.015%
124	9.496	9.473	9.522	HH	14836	263301	2.24%	0.055%
125	9.533	9.522	9.552	HH	6040	102080	0.87%	0.021%
126	9.570	9.552	9.607	HH	7147	207739	1.77%	0.043%
127	9.613	9.607	9.632	HH	5722	80147	0.68%	0.017%
128	9.659	9.632	9.680	HH	6352	159708	1.36%	0.033%
129	9.703	9.680	9.708	HH	5572	89128	0.76%	0.018%
130	9.718	9.708	9.732	HH	6066	84149	0.72%	0.017%
131	9.763	9.732	9.800	HH	13527	318012	2.71%	0.066%
132	9.827	9.800	9.841	HH	6998	154628	1.32%	0.032%
133	9.869	9.841	9.902	HH	12598	313590	2.67%	0.065%
134	9.942	9.902	9.973	HH	12060	337970	2.88%	0.070%
135	9.996	9.973	10.021	HH	7111	177924	1.51%	0.037%
136	10.033	10.021	10.065	HH	5725	143574	1.22%	0.030%
137	10.100	10.065	10.117	HH	5813	167609	1.43%	0.035%
138	10.151	10.117	10.166	HH	5858	160491	1.37%	0.033%
139	10.205	10.166	10.226	HH	7455	221239	1.88%	0.046%
140	10.245	10.226	10.271	HH	8361	187215	1.59%	0.039%
141	10.288	10.271	10.292	HH	6391	77977	0.66%	0.016%

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

rteres

142	10.297	10.292	10.309	HH	6382	63102	0.54%	0.013%
143	10.363	10.309	10.377	HH	8833	289737	2	
144	10.388	10.377	10.408	HH	8586	154561	1	
145	10.427	10.408	10.453	HH	8181	205438	1	
146	10.508	10.453	10.537	HH	11308	429869	3	
147	10.558	10.537	10.596	HH	12553	338386	2	
148	10.632	10.596	10.655	HH	11842	335753	2.86%	0.070%
149	10.677	10.655	10.696	HH	13156	265715	2.26%	0.055%
150	10.710	10.696	10.726	HH	11001	177353	1.51%	0.037%
151	10.758	10.726	10.782	HH	11724	343248	2.92%	0.071%
152	10.804	10.782	10.827	HH	12244	282487	2.40%	0.059%
153	10.842	10.827	10.846	HH	9799	108001	0.92%	0.022%
154	10.851	10.846	10.860	HH	9834	83967	0.71%	0.017%
155	10.904	10.860	10.923	HH	40310	700707	5.96%	0.145%
156	10.939	10.923	10.951	HH	19655	269174	2.29%	0.056%
157	10.966	10.951	11.025	HH	21098	654271	5.57%	0.136%
158	11.077	11.025	11.129	HH	19010	804118	6.85%	0.167%
159	11.159	11.129	11.182	HH	12910	382697	3.26%	0.079%
160	11.214	11.182	11.282	HH	15524	795819	6.77%	0.165%
161	11.349	11.282	11.367	HH	17566	717309	6.11%	0.149%
162	11.409	11.367	11.439	HH	28811	795167	6.77%	0.165%
163	11.461	11.439	11.484	HH	20931	452398	3.85%	0.094%
164	11.513	11.484	11.520	HH	15264	315048	2.68%	0.065%
165	11.540	11.520	11.550	HH	16116	287431	2.45%	0.060%
166	11.573	11.550	11.602	HH	20448	535785	4.56%	0.111%
167	11.627	11.602	11.637	HH	20263	375013	3.19%	0.078%
168	11.651	11.637	11.671	HH	21570	389746	3.32%	0.081%
169	11.687	11.671	11.691	HH	18781	223648	1.90%	0.046%
170	11.710	11.691	11.725	HH	21225	395282	3.36%	0.082%
171	11.740	11.725	11.756	HH	21436	369910	3.15%	0.077%
172	11.785	11.756	11.793	HH	20578	438321	3.73%	0.091%
173	11.817	11.793	11.842	HH	26876	674087	5.74%	0.140%
174	11.858	11.842	11.871	HH	22750	382005	3.25%	0.079%
175	11.891	11.871	11.922	HH	24963	678229	5.77%	0.141%
176	11.936	11.922	11.956	HH	20968	413776	3.52%	0.086%
177	11.963	11.956	11.969	HH	20469	165818	1.41%	0.034%
178	11.994	11.969	12.008	HH	21434	493421	4.20%	0.102%
179	12.073	12.008	12.094	HH	29342	1270483	10.82%	0.264%
180	12.103	12.094	12.119	HH	26594	394326	3.36%	0.082%
181	12.141	12.119	12.174	HH	32732	963246	8.20%	0.200%
182	12.187	12.174	12.195	HH	27747	342139	2.91%	0.071%
183	12.216	12.195	12.264	HH	36424	1270139	10.81%	0.264%
184	12.319	12.264	12.354	HH	148296	3175872	27.03%	0.659%
185	12.362	12.354	12.387	HH	32973	612627	5.22%	0.127%
186	12.418	12.387	12.452	HH	34246	1243741	10.59%	0.258%
187	12.476	12.452	12.491	HH	32350	731563	6.23%	0.152%
188	12.510	12.491	12.531	HH	35584	796326	6.78%	0.165%
189	12.556	12.531	12.582	HH	36953	1053035	8.96%	0.218%
190	12.606	12.582	12.632	HH	44126	1155083	9.83%	0.240%
191	12.647	12.632	12.657	HH	35560	546968	4.66%	0.113%
192	12.693	12.657	12.701	HH	40451	984687	8.38%	0.204%
193	12.723	12.701	12.749	HH	81619	1542855	13.13%	0.320%
194	12.769	12.749	12.779	HH	40216	688777	5.86%	0.143%

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

rteres

195	12.795	12.779	12.815	HH	41842	868807	7.40%	0.180%
196	12.846	12.815	12.855	HH	41646	971421	8	
197	12.860	12.855	12.869	HH	41018	339051	2	
198	12.909	12.869	12.922	HH	42484	1312166	11	
199	12.942	12.922	12.963	HH	49166	1146511	9	
200	12.978	12.963	12.994	HH	45174	809768	6	
201	13.018	12.994	13.042	HH	82720	1741962	14.83%	0.361%
202	13.046	13.042	13.063	HH	48193	587094	5.00%	0.122%
203	13.080	13.063	13.092	HH	50540	860606	7.33%	0.179%
204	13.111	13.092	13.140	HH	57883	1517827	12.92%	0.315%
205	13.145	13.140	13.155	HH	49836	444538	3.78%	0.092%
206	13.163	13.155	13.168	HH	50553	375089	3.19%	0.078%
207	13.179	13.168	13.183	HH	51712	477462	4.06%	0.099%
208	13.199	13.183	13.203	HH	54447	638050	5.43%	0.132%
209	13.220	13.203	13.241	HH	55913	1224974	10.43%	0.254%
210	13.249	13.241	13.253	HH	53831	399511	3.40%	0.083%
211	13.265	13.253	13.270	HH	54499	548825	4.67%	0.114%
212	13.294	13.270	13.298	HH	58408	930456	7.92%	0.193%
213	13.330	13.298	13.350	HH	69231	2015578	17.16%	0.418%
214	13.354	13.350	13.358	HH	61583	300478	2.56%	0.062%
215	13.387	13.358	13.403	HH	76047	1859933	15.83%	0.386%
216	13.414	13.403	13.453	HH	71107	1972512	16.79%	0.409%
217	13.461	13.453	13.470	HH	64300	659486	5.61%	0.137%
218	13.496	13.470	13.501	HH	65236	1174111	9.99%	0.244%
219	13.504	13.501	13.525	HH	65386	918505	7.82%	0.191%
220	13.555	13.525	13.580	HH	120432	2879410	24.51%	0.597%
221	13.613	13.580	13.628	HH	74842	2073604	17.65%	0.430%
222	13.650	13.628	13.681	HH	95111	2522921	21.48%	0.523%
223	13.689	13.681	13.700	HH	72891	838400	7.14%	0.174%
224	13.724	13.700	13.739	HH	77391	1747563	14.88%	0.363%
225	13.759	13.739	13.776	HH	79331	1693179	14.41%	0.351%
226	13.790	13.776	13.803	HH	79402	1286130	10.95%	0.267%
227	13.808	13.803	13.815	HH	78940	553910	4.72%	0.115%
228	13.821	13.815	13.829	HH	79889	673527	5.73%	0.140%
229	13.851	13.829	13.866	HH	83094	1782721	15.18%	0.370%
230	13.892	13.866	13.911	HH	86484	2319953	19.75%	0.481%
231	13.924	13.911	13.936	HH	87481	1262521	10.75%	0.262%
232	13.941	13.936	13.946	HH	85495	537199	4.57%	0.111%
233	13.951	13.946	13.958	HH	86441	615049	5.24%	0.128%
234	13.984	13.958	13.994	HH	87890	1848402	15.73%	0.384%
235	13.998	13.994	14.004	HH	87414	520760	4.43%	0.108%
236	14.007	14.004	14.014	HH	86979	502932	4.28%	0.104%
237	14.053	14.014	14.073	HH	93650	3212657	27.35%	0.667%
238	14.090	14.073	14.105	HH	93936	1772228	15.09%	0.368%
239	14.129	14.105	14.133	HH	95418	1595192	13.58%	0.331%
240	14.139	14.133	14.148	HH	95168	840386	7.15%	0.174%
241	14.153	14.148	14.156	HH	95560	438632	3.73%	0.091%
242	14.169	14.156	14.183	HH	98723	1604458	13.66%	0.333%
243	14.201	14.183	14.206	HH	98903	1343239	11.43%	0.279%
244	14.211	14.206	14.215	HH	98749	506934	4.32%	0.105%
245	14.220	14.215	14.226	HH	98923	652211	5.55%	0.135%
246	14.253	14.226	14.269	HH	104607	2610786	22.22%	0.542%

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

rteres

247	14.304	14.269	14.325	HH	111322	3596366	30.61%	0.746%
248	14.335	14.325	14.340	HH	108666	983138	8	
249	14.356	14.340	14.381	HH	116156	2757944	23	
250	14.394	14.381	14.411	HH	113770	2007996	17	
251	14.463	14.411	14.488	HH	123977	5333190	45	
252	14.504	14.488	14.508	HH	119156	1434402	12	
253	14.532	14.508	14.539	HH	123581	2243300	19.10%	0.465%
254	14.555	14.539	14.573	HH	127359	2469573	21.02%	0.512%
255	14.594	14.573	14.608	HH	128942	2654229	22.59%	0.551%
256	14.612	14.608	14.634	HH	124552	1965412	16.73%	0.408%
257	14.655	14.634	14.679	HH	132566	3437722	29.26%	0.713%
258	14.698	14.679	14.727	HH	140083	3833974	32.64%	0.795%
259	14.750	14.727	14.762	HH	137050	2892285	24.62%	0.600%
260	14.801	14.762	14.839	HH	275816	8362659	71.19%	1.735%
261	14.858	14.839	14.879	HH	144434	3430070	29.20%	0.712%
262	14.905	14.879	14.922	HH	162619	3889736	33.11%	0.807%
263	14.946	14.922	14.986	HH	169044	6054285	51.54%	1.256%
264	15.004	14.986	15.023	HH	159286	3482873	29.65%	0.723%
265	15.049	15.023	15.067	HH	162772	4138003	35.22%	0.859%
266	15.071	15.067	15.077	HH	159120	910798	7.75%	0.189%
267	15.096	15.077	15.106	HH	159289	2762413	23.52%	0.573%
268	15.110	15.106	15.115	HH	158387	906790	7.72%	0.188%
269	15.127	15.115	15.134	HH	160846	1721499	14.65%	0.357%
270	15.137	15.134	15.145	HH	160893	1098284	9.35%	0.228%
271	15.163	15.145	15.172	HH	163546	2601278	22.14%	0.540%
272	15.182	15.172	15.197	HH	166259	2438079	20.75%	0.506%
273	15.215	15.197	15.231	HH	171230	3452917	29.39%	0.716%
274	15.237	15.231	15.242	HH	170160	1185805	10.09%	0.246%
275	15.251	15.242	15.257	HH	171686	1530434	13.03%	0.318%
276	15.264	15.257	15.276	HH	169367	1844415	15.70%	0.383%
277	15.291	15.276	15.313	HH	175313	3904294	33.24%	0.810%
278	15.334	15.313	15.349	HH	179161	3739959	31.84%	0.776%
279	15.393	15.349	15.427	HH	239618	9343475	79.54%	1.939%
280	15.439	15.427	15.447	HH	187984	2265957	19.29%	0.470%
281	15.469	15.447	15.477	HH	190972	3299947	28.09%	0.685%
282	15.494	15.477	15.507	HH	197562	3494059	29.74%	0.725%
283	15.540	15.507	15.562	HH	256206	7309277	62.22%	1.517%
284	15.579	15.562	15.609	HH	216238	5809846	49.46%	1.205%
285	15.621	15.609	15.653	HH	208379	5377647	45.78%	1.116%
286	15.668	15.653	15.681	HH	208596	3466976	29.51%	0.719%
287	15.714	15.681	15.718	HH	217993	4771914	40.62%	0.990%
288	15.726	15.718	15.735	HH	220453	2128338	18.12%	0.442%
289	15.743	15.735	15.748	HH	223514	1769637	15.06%	0.367%
290	15.762	15.748	15.780	HH	228058	4311184	36.70%	0.894%
291	15.793	15.780	15.809	HH	222953	3873279	32.97%	0.804%
292	15.833	15.809	15.855	HH	233938	6263401	53.32%	1.300%
293	15.863	15.855	15.868	HH	230042	1800680	15.33%	0.374%
294	15.887	15.868	15.896	HH	238278	3918584	33.36%	0.813%
295	15.917	15.896	15.937	HH	243896	5789145	49.28%	1.201%
296	15.940	15.937	15.953	HH	236973	2372129	20.19%	0.492%
297	15.979	15.953	15.989	HH	244265	5131814	43.68%	1.065%
298	16.000	15.989	16.007	HH	249398	2607909	22.20%	0.541%
299	16.030	16.007	16.045	HH	255445	5835691	49.68%	1.211%

9

Instrument :
FID_G
ClientSampleId :
SB09

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/15/2022
Supervised By :Ankita Jodhani 08/15/2022

A B C D E F

rteres

300	16.052	16.045	16.069	HH	251355	3484596	29.66%	0.723%
301	16.090	16.069	16.100	HH	260893	4790824	40	
302	16.104	16.100	16.112	HH	258516	1773288	15	
303	16.122	16.112	16.132	HH	260787	3098847	26	
304	16.140	16.132	16.147	HH	260670	2466450	21	
305	16.169	16.147	16.173	HH	265685	4009915	34	
306	16.187	16.173	16.192	HH	272175	3010917	25.63%	0.625%
307	16.219	16.192	16.238	HH	279184	7661192	65.22%	1.590%
308	16.258	16.238	16.271	HH	281192	5453389	46.42%	1.131%
309	16.295	16.271	16.304	HH	293231	5607431	47.73%	1.163%
310	16.317	16.304	16.331	HH	288810	4639074	39.49%	0.963%
311	16.348	16.331	16.362	HH	305825	5649867	48.09%	1.172%
312	16.371	16.362	16.382	HH	303136	3576868	30.45%	0.742%
313	16.411	16.382	16.444	HH	340138	11747408	100.00%	2.437%
314	16.471	16.444	16.484	HH	333603	7726692	65.77%	1.603%
315	16.497	16.484	16.518	HH	332541	6738213	57.36%	1.398%
316	16.522	16.518	16.548	HH	327953	5780013	49.20%	1.199%
317	16.589	16.548	16.599	HH	341957	10104082	86.01%	2.096%
318	16.603	16.599	16.609	HH	338657	1941964	16.53%	0.403%
319	16.655	16.609	16.659	HH	344882	10114780	86.10%	2.099%
320	16.668	16.659	16.688	HH	349711	6066790	51.64%	1.259%
321	16.711	16.688	16.715	HH	358778	5643211	48.04%	1.171%
322	16.718	16.715	16.726	HH	356712	2269530	19.32%	0.471%
323	16.753	16.726	16.759	HH	366570	7170249	61.04%	1.488%
324	16.768	16.759	16.774	HH	371239	3364193	28.64%	0.698%
325	16.793	16.774	16.805	HH	387709	6986006	59.47%	1.449%
326	16.810	16.805	16.832	HH	378483	6166263	52.49%	1.279%
327	16.855	16.832	16.866	HH	391157	7613074	64.81%	1.580%
328	16.883	16.866	16.893	HH	389708	6288876	53.53%	1.305%
329	16.922	16.893	16.933	HH	393426	9373581	79.79%	1.945%
330	16.954	16.933	16.962	HH	403842	6848694	58.30%	1.421%
331	16.965	16.962	16.969	HH	404412	1858235	15.82%	0.386%
332	16.983	16.969	17.002	HH	410705	7827252	66.63%	1.624%
333	17.006	17.002	17.020	HHA	405696	4533386	38.59%	0.941%

Sum of corrected areas: 481974261

FG072822.M Fri Aug 12 11:18:34 2022

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081222\
Data File : FG010353.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 11:17
Operator : YP\AJ
Sample : N4130-13
Misc :
ALS Vial : 7 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
SB04

Integration File: Sample.e
Quant Time: Aug 12 11:43:37 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.800	2380527	18.740 ug/ml
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

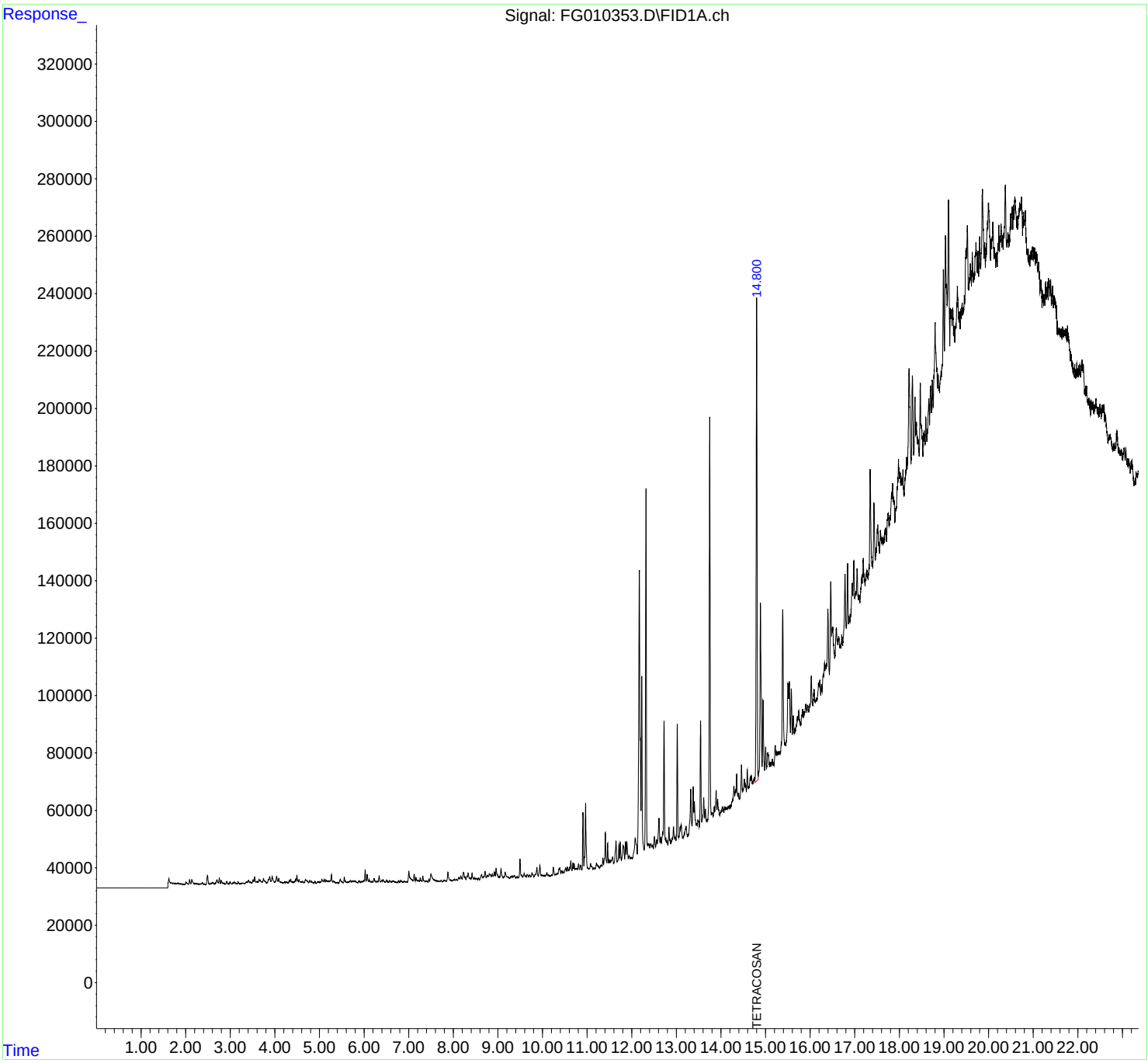
Quantitation Report (QT Reviewed)

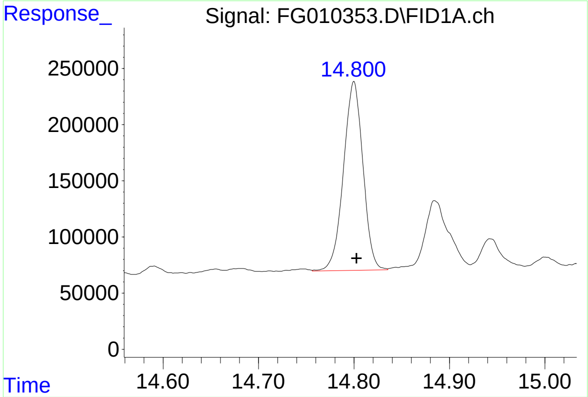
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081222\
Data File : FG010353.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 11:17
Operator : YP\AJ
Sample : N4130-13
Misc :
ALS Vial : 7 Sample Multiplier: 1

Instrument :
FID_G
ClientSampleId :
SB04

Integration File: Sample.e
Quant Time: Aug 12 11:43:37 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.800 min
Delta R.T.: -0.003 min
Response: 2380527
Conc: 18.74 ug/ml

Instrument :
FID_G
ClientSampleId :
SB04

9

A
B
C
D
E
F

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081222\
Data File : FG010353.D
Signal(s) : FID1A.ch
Acq On : 12 Aug 2022 11:17
Sample : N4130-13
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.324	4.300	4.339	BH	835	9089	0.21%	0.006%
2	4.354	4.339	4.377	HH	1298	15379	0.35%	0.011%
3	4.395	4.377	4.418	HH	372	5961	0.14%	0.004%
4	4.435	4.418	4.442	HH	252	2822	0.06%	0.002%
5	4.467	4.442	4.479	HH	1364	18106	0.41%	0.012%
6	4.494	4.479	4.523	HH	2595	34088	0.78%	0.023%
7	4.543	4.523	4.561	HH	1025	15922	0.36%	0.011%
8	4.572	4.561	4.597	HH	329	5297	0.12%	0.004%
9	4.612	4.597	4.621	HH	412	4138	0.09%	0.003%
10	4.631	4.621	4.650	HH	361	3946	0.09%	0.003%
11	4.654	4.650	4.658	HH	106	315	0.01%	0.000%
12	4.685	4.658	4.697	HH	1003	14019	0.32%	0.010%
13	4.709	4.697	4.728	HH	958	13196	0.30%	0.009%
14	4.735	4.728	4.757	HH	532	5231	0.12%	0.004%
15	4.781	4.757	4.809	HH	790	12934	0.29%	0.009%
16	4.822	4.809	4.845	HH	576	6658	0.15%	0.005%
17	4.850	4.845	4.860	HH	74	506	0.01%	0.000%
18	4.862	4.860	4.876	HH	85	158	0.00%	0.000%
19	4.902	4.876	4.921	PH	449	2617	0.06%	0.002%
20	4.951	4.921	4.958	PH	177	-677	-0.02%	-0.000%
21	4.969	4.958	4.989	HH	452	5285	0.12%	0.004%
22	5.003	4.989	5.015	HH	336	2772	0.06%	0.002%
23	5.025	5.015	5.030	HH	244	1635	0.04%	0.001%
24	5.054	5.030	5.088	HH	1228	22484	0.51%	0.015%
25	5.106	5.088	5.128	HH	1308	16567	0.38%	0.011%
26	5.144	5.128	5.158	HH	923	11601	0.26%	0.008%
27	5.168	5.158	5.196	HH	629	11839	0.27%	0.008%
28	5.207	5.196	5.218	HH	563	6438	0.15%	0.004%
29	5.236	5.218	5.244	HH	628	8336	0.19%	0.006%
30	5.268	5.244	5.296	HH	2790	38192	0.87%	0.026%
31	5.313	5.296	5.328	HH	686	8679	0.20%	0.006%
32	5.340	5.328	5.374	HH	391	2679	0.06%	0.002%
33	5.401	5.374	5.426	PH	95	-1304	-0.03%	-0.001%
34	5.468	5.426	5.520	PH	1183	23905	0.54%	0.016%
35	5.524	5.520	5.533	PH	95	305	0.01%	0.000%
36	5.557	5.533	5.573	PH	2052	20395	0.46%	0.014%

37	5.582	5.573	5.604	HH	583	7000	0.16%	0.005%
38	5.614	5.604	5.625	HH	198	1635	0.04%	0.001%
39	5.638	5.625	5.642	HH	243	1836	0.04%	0.001%
40	5.647	5.642	5.657	HH	295	2157	0.05%	0.001%
41	5.692	5.657	5.710	HH	717	13948	0.32%	0.010%
42	5.727	5.710	5.738	HH	615	7708	0.18%	0.005%
43	5.748	5.738	5.760	HH	604	6414	0.15%	0.004%
44	5.771	5.760	5.787	HH	608	8069	0.18%	0.006%
45	5.803	5.787	5.833	HH	627	10647	0.24%	0.007%
46	5.836	5.833	5.841	HH	138	535	0.01%	0.000%
47	5.847	5.841	5.861	HH	132	918	0.02%	0.001%
48	5.880	5.861	5.896	PH	487	6512	0.15%	0.004%
49	5.905	5.896	5.922	HH	430	4938	0.11%	0.003%
50	5.941	5.922	5.960	HH	483	7196	0.16%	0.005%
51	5.964	5.960	5.972	HH	357	2360	0.05%	0.002%
52	5.998	5.972	6.007	HH	789	12214	0.28%	0.008%
53	6.024	6.007	6.045	HH	4365	48508	1.10%	0.033%
54	6.068	6.045	6.099	HH	2921	44175	1.00%	0.030%
55	6.116	6.099	6.138	HH	1112	15965	0.36%	0.011%
56	6.142	6.138	6.162	HH	366	4147	0.09%	0.003%
57	6.178	6.162	6.195	HH	514	7360	0.17%	0.005%
58	6.226	6.195	6.279	HH	1560	32619	0.74%	0.022%
59	6.295	6.279	6.311	HH	544	7695	0.18%	0.005%
60	6.338	6.311	6.368	HH	2399	36229	0.82%	0.025%
61	6.392	6.368	6.404	HH	848	12321	0.28%	0.008%
62	6.426	6.404	6.478	HH	1039	23952	0.54%	0.016%
63	6.503	6.478	6.548	HH	962	19889	0.45%	0.014%
64	6.575	6.548	6.599	HH	798	14844	0.34%	0.010%
65	6.636	6.599	6.645	HH	616	9895	0.23%	0.007%
66	6.656	6.645	6.674	HH	667	8422	0.19%	0.006%
67	6.685	6.674	6.736	HH	360	8002	0.18%	0.006%
68	6.775	6.736	6.795	HH	794	11361	0.26%	0.008%
69	6.833	6.795	6.871	PH	712	18721	0.43%	0.013%
70	6.898	6.871	6.929	HH	575	11456	0.26%	0.008%
71	6.948	6.929	6.966	HH	467	7179	0.16%	0.005%
72	7.003	6.966	7.098	HH	4012	118269	2.69%	0.081%
73	7.122	7.098	7.147	HH	2958	44398	1.01%	0.031%
74	7.163	7.147	7.184	HH	1835	26202	0.60%	0.018%
75	7.195	7.184	7.210	HH	950	12281	0.28%	0.008%
76	7.224	7.210	7.241	HH	814	11953	0.27%	0.008%
77	7.257	7.241	7.273	HH	1783	21156	0.48%	0.015%
78	7.281	7.273	7.294	HH	757	8181	0.19%	0.006%
79	7.316	7.294	7.337	HH	2352	33143	0.75%	0.023%
80	7.347	7.337	7.370	HH	769	11327	0.26%	0.008%
81	7.391	7.370	7.406	HH	628	10460	0.24%	0.007%
82	7.410	7.406	7.432	HH	488	6560	0.15%	0.005%
83	7.453	7.432	7.469	HH	1338	17191	0.39%	0.012%
84	7.498	7.469	7.592	HH	3079	116819	2.66%	0.080%
85	7.604	7.592	7.652	HH	783	22812	0.52%	0.016%
86	7.673	7.652	7.698	HH	675	14728	0.33%	0.010%
87	7.728	7.698	7.755	HH	935	19454	0.44%	0.013%
88	7.791	7.755	7.798	HH	839	14979	0.34%	0.010%
89	7.808	7.798	7.844	HH	834	17773	0.40%	0.012%

90	7.880	7.844	7.958	HH	3720	100278	2.28%	0.069%
91	7.962	7.958	7.976	HH	737	7415	0.17%	0.005%
92	7.983	7.976	7.988	HH	815	5807	0.13%	0.004%
93	8.022	7.988	8.041	HH	1226	29795	0.68%	0.020%
94	8.059	8.041	8.073	HH	1230	19762	0.45%	0.014%
95	8.084	8.073	8.096	HH	985	12071	0.27%	0.008%
96	8.119	8.096	8.127	HH	1856	26659	0.61%	0.018%
97	8.133	8.127	8.149	HH	1711	19621	0.45%	0.013%
98	8.169	8.149	8.198	HH	2407	51875	1.18%	0.036%
99	8.225	8.198	8.229	HH	3524	43965	1.00%	0.030%
100	8.233	8.229	8.254	HH	3554	41987	0.95%	0.029%
101	8.264	8.254	8.282	HH	2166	28766	0.65%	0.020%
102	8.333	8.282	8.374	HH	3393	115386	2.62%	0.079%
103	8.390	8.374	8.399	HH	1676	23447	0.53%	0.016%
104	8.420	8.399	8.465	HH	3348	77145	1.75%	0.053%
105	8.479	8.465	8.496	HH	1669	28447	0.65%	0.020%
106	8.512	8.496	8.536	HH	1556	32115	0.73%	0.022%
107	8.562	8.536	8.587	HH	1679	40008	0.91%	0.028%
108	8.634	8.587	8.660	HH	2908	86456	1.97%	0.059%
109	8.684	8.660	8.689	HH	2116	34131	0.78%	0.023%
110	8.712	8.689	8.738	HH	3985	83041	1.89%	0.057%
111	8.772	8.738	8.788	HH	2581	67183	1.53%	0.046%
112	8.810	8.788	8.852	HH	3108	100840	2.29%	0.069%
113	8.873	8.852	8.893	HH	3119	63473	1.44%	0.044%
114	8.923	8.893	8.940	HH	3737	81754	1.86%	0.056%
115	8.959	8.940	9.014	HH	4980	140343	3.19%	0.097%
116	9.037	9.014	9.046	HH	2136	38553	0.88%	0.027%
117	9.070	9.046	9.122	HH	4809	131122	2.98%	0.090%
118	9.135	9.122	9.143	HH	2165	24530	0.56%	0.017%
119	9.163	9.143	9.226	HH	3703	123960	2.82%	0.085%
120	9.234	9.226	9.268	HH	2010	44889	1.02%	0.031%
121	9.291	9.268	9.307	HH	2306	45307	1.03%	0.031%
122	9.322	9.307	9.341	HH	2355	42284	0.96%	0.029%
123	9.374	9.341	9.400	HH	2501	75805	1.72%	0.052%
124	9.427	9.400	9.452	HH	2237	58403	1.33%	0.040%
125	9.495	9.452	9.523	HH	8213	159398	3.63%	0.110%
126	9.532	9.523	9.558	HH	2643	47607	1.08%	0.033%
127	9.590	9.558	9.608	HH	3173	79126	1.80%	0.054%
128	9.620	9.608	9.637	HH	2449	39313	0.89%	0.027%
129	9.659	9.637	9.682	HH	2912	67148	1.53%	0.046%
130	9.716	9.682	9.738	HH	2699	79621	1.81%	0.055%
131	9.764	9.738	9.808	HH	3478	112876	2.57%	0.078%
132	9.835	9.808	9.845	HH	2925	56809	1.29%	0.039%
133	9.874	9.845	9.904	HH	5355	128391	2.92%	0.088%
134	9.941	9.904	9.973	HH	6054	156250	3.55%	0.107%
135	9.990	9.973	10.011	HH	2725	57760	1.31%	0.040%
136	10.036	10.011	10.062	HH	2757	74294	1.69%	0.051%
137	10.098	10.062	10.124	HH	3493	105564	2.40%	0.073%
138	10.140	10.124	10.162	HH	2710	56163	1.28%	0.039%
139	10.206	10.162	10.221	HH	2865	90041	2.05%	0.062%
140	10.243	10.221	10.277	HH	5327	123713	2.81%	0.085%
141	10.292	10.277	10.306	HH	2950	49446	1.12%	0.034%

rteres

142	10.330	10.306	10.340	HH	3233	63503	1.44%	0.044%
143	10.383	10.340	10.409	HH	5113	173518	3.95%	0.119%
144	10.426	10.409	10.444	HH	4275	80721	1.84%	0.056%
145	10.460	10.444	10.476	HH	4000	69808	1.59%	0.048%
146	10.522	10.476	10.542	HH	5152	169221	3.85%	0.116%
147	10.559	10.542	10.578	HH	5531	104901	2.39%	0.072%
148	10.585	10.578	10.592	HH	4405	35513	0.81%	0.024%
149	10.608	10.592	10.617	HH	5384	74355	1.69%	0.051%
150	10.633	10.617	10.662	HH	7496	152380	3.47%	0.105%
151	10.682	10.662	10.697	HH	6819	119225	2.71%	0.082%
152	10.711	10.697	10.730	HH	6608	107500	2.45%	0.074%
153	10.744	10.730	10.751	HH	4907	60065	1.37%	0.041%
154	10.758	10.751	10.771	HH	4959	58411	1.33%	0.040%
155	10.773	10.771	10.779	HH	4796	23032	0.52%	0.016%
156	10.807	10.779	10.830	HH	6494	164499	3.74%	0.113%
157	10.856	10.830	10.883	HH	6097	169035	3.84%	0.116%
158	10.907	10.883	10.927	HH	24494	336537	7.65%	0.231%
159	10.940	10.927	10.945	HH	9051	84361	1.92%	0.058%
160	10.965	10.945	11.008	HH	27658	511574	11.64%	0.352%
161	11.013	11.008	11.036	HH	5245	83252	1.89%	0.057%
162	11.043	11.036	11.052	HH	4947	46811	1.06%	0.032%
163	11.079	11.052	11.139	HH	6705	288818	6.57%	0.199%
164	11.157	11.139	11.178	HH	5288	116730	2.66%	0.080%
165	11.209	11.178	11.250	HH	6911	253529	5.77%	0.174%
166	11.254	11.250	11.278	HH	5638	91362	2.08%	0.063%
167	11.315	11.278	11.333	HH	6208	191142	4.35%	0.131%
168	11.353	11.333	11.368	HH	8493	149966	3.41%	0.103%
169	11.408	11.368	11.441	HH	17514	432574	9.84%	0.298%
170	11.459	11.441	11.480	HH	13783	229904	5.23%	0.158%
171	11.493	11.480	11.507	HH	8030	124311	2.83%	0.086%
172	11.516	11.507	11.530	HH	7549	99035	2.25%	0.068%
173	11.570	11.530	11.594	HH	8982	304564	6.93%	0.209%
174	11.648	11.594	11.674	HH	14417	460031	10.46%	0.316%
175	11.713	11.674	11.727	HH	13192	301191	6.85%	0.207%
176	11.743	11.727	11.766	HH	14094	253641	5.77%	0.174%
177	11.808	11.766	11.817	HH	13021	313632	7.13%	0.216%
178	11.821	11.817	11.841	HH	12551	157545	3.58%	0.108%
179	11.860	11.841	11.875	HH	14270	232532	5.29%	0.160%
180	11.891	11.875	11.922	HH	14126	321473	7.31%	0.221%
181	11.939	11.922	11.964	HH	9400	219327	4.99%	0.151%
182	11.988	11.964	12.010	HH	8820	237880	5.41%	0.164%
183	12.078	12.010	12.124	HH	15457	813635	18.51%	0.560%
184	12.170	12.124	12.207	HH	108807	2499014	56.84%	1.719%
185	12.225	12.207	12.278	HH	71920	1259894	28.66%	0.867%
186	12.320	12.278	12.354	HH	137250	2152496	48.96%	1.481%
187	12.367	12.354	12.377	HH	13473	178974	4.07%	0.123%
188	12.388	12.377	12.405	HH	13516	223479	5.08%	0.154%
189	12.421	12.405	12.425	HH	13391	153165	3.48%	0.105%
190	12.433	12.425	12.452	HH	13537	214751	4.88%	0.148%
191	12.467	12.452	12.485	HH	13084	245387	5.58%	0.169%
192	12.509	12.485	12.536	HH	16088	424183	9.65%	0.292%
193	12.556	12.536	12.572	HH	14837	306995	6.98%	0.211%
194	12.611	12.572	12.633	HH	22504	637474	14.50%	0.438%

195	12.650	12.633	12.663	HH	15801	272124	6.19%	0.187%
196	12.696	12.663	12.703	HH	17768	384733	8.75%	0.265%
197	12.725	12.703	12.754	HH	56403	930889	21.17%	0.640%
198	12.764	12.754	12.782	HH	15615	248370	5.65%	0.171%
199	12.793	12.782	12.810	HH	14547	235968	5.37%	0.162%
200	12.835	12.810	12.857	HH	19281	450797	10.25%	0.310%
201	12.861	12.857	12.875	HH	14880	157583	3.58%	0.108%
202	12.936	12.875	12.963	HH	19072	836338	19.02%	0.575%
203	12.975	12.963	12.992	HH	15888	275341	6.26%	0.189%
204	13.021	12.992	13.051	HH	55292	993234	22.59%	0.683%
205	13.056	13.051	13.063	HH	16057	111743	2.54%	0.077%
206	13.083	13.063	13.090	HH	19458	289858	6.59%	0.199%
207	13.110	13.090	13.139	HH	20149	540748	12.30%	0.372%
208	13.143	13.139	13.151	HH	15889	114715	2.61%	0.079%
209	13.217	13.151	13.248	HH	19671	1018994	23.18%	0.701%
210	13.253	13.248	13.258	HH	16245	94521	2.15%	0.065%
211	13.323	13.258	13.352	HH	32606	1235865	28.11%	0.850%
212	13.378	13.352	13.394	HH	33483	662506	15.07%	0.456%
213	13.405	13.394	13.447	HH	28370	760634	17.30%	0.523%
214	13.455	13.447	13.467	HH	20617	238413	5.42%	0.164%
215	13.485	13.467	13.515	HH	21941	602835	13.71%	0.415%
216	13.543	13.515	13.570	HH	56347	1094044	24.88%	0.752%
217	13.614	13.570	13.634	HH	29718	937841	21.33%	0.645%
218	13.652	13.634	13.676	HH	25587	593197	13.49%	0.408%
219	13.683	13.676	13.689	HH	21841	166396	3.78%	0.114%
220	13.693	13.689	13.697	HH	21824	99059	2.25%	0.068%
221	13.748	13.697	13.781	HH	162009	2951163	67.13%	2.030%
222	13.796	13.781	13.828	HH	24525	676876	15.40%	0.466%
223	13.849	13.828	13.862	HH	26485	515556	11.73%	0.355%
224	13.892	13.862	13.910	HH	31942	809394	18.41%	0.557%
225	13.926	13.910	13.975	HH	29073	1006549	22.89%	0.692%
226	14.001	13.975	14.008	HH	25092	483368	10.99%	0.332%
227	14.011	14.008	14.017	HH	25070	137054	3.12%	0.094%
228	14.037	14.017	14.063	HH	26463	704524	16.02%	0.485%
229	14.091	14.063	14.107	HH	26379	668653	15.21%	0.460%
230	14.116	14.107	14.129	HH	26323	350469	7.97%	0.241%
231	14.137	14.129	14.142	HH	26122	194709	4.43%	0.134%
232	14.151	14.142	14.155	HH	26280	208402	4.74%	0.143%
233	14.165	14.155	14.172	HH	26430	274430	6.24%	0.189%
234	14.182	14.172	14.186	HH	26499	213782	4.86%	0.147%
235	14.192	14.186	14.205	HH	26877	300348	6.83%	0.207%
236	14.245	14.205	14.250	HH	28174	730443	16.61%	0.502%
237	14.256	14.250	14.266	HH	28866	270959	6.16%	0.186%
238	14.290	14.266	14.310	HH	33731	818707	18.62%	0.563%
239	14.325	14.310	14.335	HH	32125	478866	10.89%	0.329%
240	14.353	14.335	14.376	HH	37907	832134	18.93%	0.572%
241	14.385	14.376	14.416	HH	31143	721396	16.41%	0.496%
242	14.460	14.416	14.482	HH	41112	1341695	30.52%	0.923%
243	14.490	14.482	14.501	HH	32752	372810	8.48%	0.256%
244	14.523	14.501	14.541	HH	36096	825315	18.77%	0.568%
245	14.549	14.541	14.571	HH	34099	587944	13.37%	0.404%
246	14.590	14.571	14.612	HH	39258	871456	19.82%	0.599%

247	14.619	14.612	14.624	HH	33391	246439	5.61%	0.170%
248	14.629	14.624	14.632	HH	33573	161183	3.67%	0.111%
249	14.656	14.632	14.665	HH	36713	689578	15.68%	0.474%
250	14.682	14.665	14.704	HH	37140	842030	19.15%	0.579%
251	14.712	14.704	14.723	HH	34993	409120	9.31%	0.281%
252	14.747	14.723	14.757	HH	36738	718566	16.34%	0.494%
253	14.800	14.757	14.835	HH	203856	4053936	92.21%	2.788%
254	14.885	14.835	14.922	HH	97462	2973982	67.64%	2.046%
255	14.943	14.922	14.979	HH	63505	1678861	38.19%	1.155%
256	15.000	14.979	15.022	HH	47244	1113620	25.33%	0.766%
257	15.049	15.022	15.092	HH	45373	1806180	41.08%	1.242%
258	15.113	15.092	15.123	HH	42007	767476	17.46%	0.528%
259	15.148	15.123	15.171	HH	43087	1209715	27.52%	0.832%
260	15.177	15.171	15.188	HH	41708	413593	9.41%	0.284%
261	15.216	15.188	15.232	HH	47702	1173828	26.70%	0.807%
262	15.236	15.232	15.244	HH	45193	345045	7.85%	0.237%
263	15.253	15.244	15.259	HH	45625	400819	9.12%	0.276%
264	15.262	15.259	15.271	HH	45646	315941	7.19%	0.217%
265	15.275	15.271	15.280	HH	45547	243502	5.54%	0.167%
266	15.294	15.280	15.312	HH	45642	862058	19.61%	0.593%
267	15.321	15.312	15.330	HH	45766	498318	11.33%	0.343%
268	15.351	15.330	15.356	HH	48487	726236	16.52%	0.500%
269	15.384	15.356	15.427	HH	95137	2749334	62.53%	1.891%
270	15.440	15.427	15.455	HH	48756	821574	18.69%	0.565%
271	15.500	15.455	15.515	HH	69317	2095204	47.66%	1.441%
272	15.533	15.515	15.556	HH	70095	1538665	35.00%	1.058%
273	15.577	15.556	15.599	HH	67568	1539021	35.01%	1.059%
274	15.620	15.599	15.649	HH	58172	1633863	37.16%	1.124%
275	15.660	15.649	15.673	HH	53877	771685	17.55%	0.531%
276	15.721	15.673	15.731	HH	58104	1927351	43.84%	1.326%
277	15.744	15.731	15.779	HH	59547	1666995	37.92%	1.147%
278	15.785	15.779	15.794	HH	55869	496739	11.30%	0.342%
279	15.832	15.794	15.846	HH	60466	1831329	41.65%	1.260%
280	15.862	15.846	15.874	HH	59726	971174	22.09%	0.668%
281	15.905	15.874	15.924	HH	62216	1820481	41.41%	1.252%
282	15.941	15.924	15.969	HH	61914	1641059	37.33%	1.129%
283	15.990	15.969	15.997	HH	62242	1011363	23.00%	0.696%
284	16.025	15.997	16.062	HH	72035	2545353	57.89%	1.751%
285	16.085	16.062	16.107	HH	67493	1760630	40.05%	1.211%
286	16.119	16.107	16.125	HH	63611	693473	15.77%	0.477%
287	16.138	16.125	16.147	HH	64258	821199	18.68%	0.565%
288	16.196	16.147	16.207	HH	69668	2402815	54.65%	1.653%
289	16.216	16.207	16.236	HH	70715	1195123	27.18%	0.822%
290	16.253	16.236	16.266	HH	69163	1211847	27.56%	0.834%
291	16.294	16.266	16.301	HH	72571	1469689	33.43%	1.011%
292	16.322	16.301	16.332	HH	76604	1388314	31.58%	0.955%
293	16.347	16.332	16.362	HH	76010	1367971	31.11%	0.941%
294	16.398	16.362	16.431	HH	95432	3378198	76.84%	2.324%
295	16.462	16.431	16.481	HH	104803	2674374	60.83%	1.839%
296	16.497	16.481	16.549	HH	89026	3469089	78.91%	2.386%
297	16.587	16.549	16.602	HH	88868	2684548	61.06%	1.846%
298	16.608	16.602	16.624	HH	84457	1070739	24.35%	0.736%
299	16.638	16.624	16.672	HH	85641	2410170	54.82%	1.658%

rteres

300	16.684	16.672	16.693	HH	82859	1072210	24.39%	0.737%
301	16.707	16.693	16.729	HH	86434	1797090	40.88%	1.236%
302	16.782	16.729	16.808	HH	107512	4396518	100.00%	3.024%
303	16.840	16.808	16.863	HH	111115	3225580	73.37%	2.219%
304	16.874	16.863	16.893	HH	92751	1653227	37.60%	1.137%
305	16.904	16.893	16.909	HH	93500	861683	19.60%	0.593%
306	16.944	16.909	16.958	HH	104382	2942103	66.92%	2.024%
307	16.977	16.958	17.001	HH	112209	2715696	61.77%	1.868%

Sum of corrected areas: 145388269

FG072822.M Fri Aug 12 11:44:51 2022

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-02	**SB02**	**TCLP**			**08/08/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-04	**SB03**	**TCLP**			**08/08/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-06	**SB05**	**TCLP**			**08/08/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-08	**SB06**	**TCLP**			**08/09/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-10	**SB07**	**TCLP**			**08/09/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-12	**SB09**	**TCLP**			**08/09/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-14	**SB04**	**TCLP**			**08/09/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	
N4130-16	**SB01**	**TCLP**			**08/09/22**			**08/09/22**
			TCLP ICP Metals	6010D		08/11/22	08/11/22	
			TCLP Mercury	7470A		08/11/22	08/12/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4130 **Order ID:** N4130

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB02								
N4130-02	SB02	TCLP	Barium	1,600.000		77.9	500	ug/L
N4130-02	SB02	TCLP	Chromium	35.100	J	10.4	50.0	ug/L
N4130-02	SB02	TCLP	Lead	24.500	J	19.4	60.0	ug/L
Client ID : SB03								
N4130-04	SB03	TCLP	Barium	1,210.000		77.9	500	ug/L
N4130-04	SB03	TCLP	Cadmium	3.460	J	2.60	30.0	ug/L
N4130-04	SB03	TCLP	Chromium	30.100	J	10.4	50.0	ug/L
N4130-04	SB03	TCLP	Lead	65.100		19.4	60.0	ug/L
Client ID : SB05								
N4130-06	SB05	TCLP	Barium	1,600.000		77.9	500	ug/L
N4130-06	SB05	TCLP	Chromium	16.100	J	10.4	50.0	ug/L
N4130-06	SB05	TCLP	Lead	24.900	J	19.4	60.0	ug/L
Client ID : SB06								
N4130-08	SB06	TCLP	Barium	1,420.000		77.9	500	ug/L
N4130-08	SB06	TCLP	Cadmium	4.390	J	2.60	30.0	ug/L
N4130-08	SB06	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4130-08	SB06	TCLP	Lead	139.000		19.4	60.0	ug/L
Client ID : SB07								
N4130-10	SB07	TCLP	Barium	1,530.000		77.9	500	ug/L
N4130-10	SB07	TCLP	Lead	21.900	J	19.4	60.0	ug/L
Client ID : SB09								
N4130-12	SB09	TCLP	Barium	1,560.000		77.9	500	ug/L
Client ID : SB04								
N4130-14	SB04	TCLP	Barium	1,530.000		77.9	500	ug/L
N4130-14	SB04	TCLP	Cadmium	4.420	J	2.60	30.0	ug/L
N4130-14	SB04	TCLP	Chromium	12.300	J	10.4	50.0	ug/L
Client ID : SB01								
N4130-16	SB01	TCLP	Barium	1,720.000		77.9	500	ug/L
N4130-16	SB01	TCLP	Chromium	18.400	J	10.4	50.0	ug/L

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7440-39-3	Barium	1600		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7440-47-3	Chromium	35.1	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7439-92-1	Lead	24.5	J	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:27	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 21:53	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7440-39-3	Barium	1210		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7440-43-9	Cadmium	3.46	J	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7440-47-3	Chromium	30.1	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7439-92-1	Lead	65.1		1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:29	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 21:57	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-06	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7440-39-3	Barium	1600		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7440-47-3	Chromium	16.1	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7439-92-1	Lead	24.9	J	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:31	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:09	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-08	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7440-39-3	Barium	1420		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7440-43-9	Cadmium	4.39	J	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7440-47-3	Chromium	11.0	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7439-92-1	Lead	139		1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:34	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:14	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-10	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7440-39-3	Barium	1530		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7439-92-1	Lead	21.9	J	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:40	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:18	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-12	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7440-39-3	Barium	1560		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:43	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:22	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-14	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7440-39-3	Barium	1530		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7440-43-9	Cadmium	4.42	J	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7440-47-3	Chromium	12.3	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:45	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:26	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-16	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7440-39-3	Barium	1720		1	77.9	500	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7440-47-3	Chromium	18.4	J	1	10.4	50.0	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/11/22 13:50	08/12/22 11:47	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/11/22 14:50	08/11/22 22:30	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV82	Mercury	3.81	4.0	95	90 - 110	CV	08/12/2022	10:59	LB121477

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV17	Mercury	4.84	5.0	97	90 - 110	CV	08/12/2022	11:06	LB121477
CCV18	Mercury	4.69	5.0	94	90 - 110	CV	08/12/2022	11:36	LB121477
CCV19	Mercury	5.14	5.0	103	90 - 110	CV	08/12/2022	12:03	LB121477
CCV20	Mercury	5.00	5.0	100	90 - 110	CV	08/12/2022	12:28	LB121477
CCV21	Mercury	4.81	5.0	96	90 - 110	CV	08/12/2022	12:53	LB121477

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	1010	1000	101	90 - 110	P	08/11/2022	11:33	LB121471
	Barium	531	520	102	90 - 110	P	08/11/2022	11:33	LB121471
	Cadmium	490	510	96	90 - 110	P	08/11/2022	11:33	LB121471
	Chromium	531	520	102	90 - 110	P	08/11/2022	11:33	LB121471
	Lead	997	1000	100	90 - 110	P	08/11/2022	11:33	LB121471
	Selenium	1040	1000	104	90 - 110	P	08/11/2022	11:33	LB121471
	Silver	258	250	103	90 - 110	P	08/11/2022	11:33	LB121471

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Arsenic	17.8	20.0	89	80 - 120	P	08/11/2022	11:50	LB121471
	Barium	106	100	106	80 - 120	P	08/11/2022	11:50	LB121471
	Cadmium	6.09	6.0	102	80 - 120	P	08/11/2022	11:50	LB121471
	Chromium	11.4	10.0	114	80 - 120	P	08/11/2022	11:50	LB121471
	Lead	12.4	12.0	103	80 - 120	P	08/11/2022	11:50	LB121471
	Selenium	21.5	20.0	107	80 - 120	P	08/11/2022	11:50	LB121471
	Silver	11.0	10.0	110	80 - 120	P	08/11/2022	11:50	LB121471

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	5030	5000	101	90 - 110	P	08/11/2022	12:19	LB121471
	Barium	9980	10000	100	90 - 110	P	08/11/2022	12:19	LB121471
	Cadmium	2440	2500	98	90 - 110	P	08/11/2022	12:19	LB121471
	Chromium	996	1000	100	90 - 110	P	08/11/2022	12:19	LB121471
	Lead	4920	5000	98	90 - 110	P	08/11/2022	12:19	LB121471
	Selenium	5110	5000	102	90 - 110	P	08/11/2022	12:19	LB121471
	Silver	1270	1250	101	90 - 110	P	08/11/2022	12:19	LB121471

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Arsenic	19.0	20.0	95	80 - 120	P	08/11/2022	12:23	LB121471
	Barium	104	100	104	80 - 120	P	08/11/2022	12:23	LB121471
	Cadmium	6.11	6.0	102	80 - 120	P	08/11/2022	12:23	LB121471
	Chromium	11.2	10.0	112	80 - 120	P	08/11/2022	12:23	LB121471
	Lead	12.6	12.0	105	80 - 120	P	08/11/2022	12:23	LB121471
	Selenium	22.3	20.0	112	80 - 120	P	08/11/2022	12:23	LB121471
	Silver	10.8	10.0	108	80 - 120	P	08/11/2022	12:23	LB121471

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Arsenic	5070	5000	102	90 - 110	P	08/11/2022	13:14	LB121471
	Barium	9920	10000	99	90 - 110	P	08/11/2022	13:14	LB121471
	Cadmium	2460	2500	98	90 - 110	P	08/11/2022	13:14	LB121471
	Chromium	1010	1000	101	90 - 110	P	08/11/2022	13:14	LB121471
	Lead	4950	5000	99	90 - 110	P	08/11/2022	13:14	LB121471
	Selenium	5160	5000	103	90 - 110	P	08/11/2022	13:14	LB121471
	Silver	1270	1250	102	90 - 110	P	08/11/2022	13:14	LB121471
CCV03	Arsenic	5130	5000	103	90 - 110	P	08/11/2022	14:03	LB121471
	Barium	9960	10000	100	90 - 110	P	08/11/2022	14:03	LB121471
	Cadmium	2470	2500	99	90 - 110	P	08/11/2022	14:03	LB121471
	Chromium	1010	1000	101	90 - 110	P	08/11/2022	14:03	LB121471
	Lead	4970	5000	100	90 - 110	P	08/11/2022	14:03	LB121471
	Selenium	5250	5000	105	90 - 110	P	08/11/2022	14:03	LB121471
	Silver	1270	1250	101	90 - 110	P	08/11/2022	14:03	LB121471
CCV04	Arsenic	4970	5000	100	90 - 110	P	08/11/2022	16:32	LB121471
	Barium	9640	10000	96	90 - 110	P	08/11/2022	16:32	LB121471
	Cadmium	2460	2500	98	90 - 110	P	08/11/2022	16:32	LB121471
	Chromium	982	1000	98	90 - 110	P	08/11/2022	16:32	LB121471
	Lead	4780	5000	96	90 - 110	P	08/11/2022	16:32	LB121471
	Selenium	5130	5000	103	90 - 110	P	08/11/2022	16:32	LB121471
	Silver	1210	1250	97	90 - 110	P	08/11/2022	16:32	LB121471
CCV05	Arsenic	5050	5000	101	90 - 110	P	08/11/2022	17:27	LB121471
	Barium	9890	10000	99	90 - 110	P	08/11/2022	17:27	LB121471
	Cadmium	2490	2500	99	90 - 110	P	08/11/2022	17:27	LB121471
	Chromium	1000	1000	100	90 - 110	P	08/11/2022	17:27	LB121471
	Lead	4850	5000	97	90 - 110	P	08/11/2022	17:27	LB121471
	Selenium	5200	5000	104	90 - 110	P	08/11/2022	17:27	LB121471
	Silver	1240	1250	99	90 - 110	P	08/11/2022	17:27	LB121471
CCV06	Arsenic	5030	5000	100	90 - 110	P	08/11/2022	18:14	LB121471
	Barium	9830	10000	98	90 - 110	P	08/11/2022	18:14	LB121471
	Cadmium	2470	2500	99	90 - 110	P	08/11/2022	18:14	LB121471
	Chromium	1000	1000	100	90 - 110	P	08/11/2022	18:14	LB121471
	Lead	4820	5000	96	90 - 110	P	08/11/2022	18:14	LB121471
	Selenium	5180	5000	104	90 - 110	P	08/11/2022	18:14	LB121471

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV06	Silver	1240	1250	100	90 - 110	P	08/11/2022	18:14	LB121471
CCV07	Arsenic	4980	5000	100	90 - 110	P	08/11/2022	19:17	LB121471
	Barium	9600	10000	96	90 - 110	P	08/11/2022	19:17	LB121471
	Cadmium	2440	2500	98	90 - 110	P	08/11/2022	19:17	LB121471
	Chromium	992	1000	99	90 - 110	P	08/11/2022	19:17	LB121471
	Lead	4760	5000	95	90 - 110	P	08/11/2022	19:17	LB121471
	Selenium	5150	5000	103	90 - 110	P	08/11/2022	19:17	LB121471
	Silver	1240	1250	99	90 - 110	P	08/11/2022	19:17	LB121471
CCV08	Arsenic	4920	5000	98	90 - 110	P	08/11/2022	20:05	LB121471
	Barium	9770	10000	98	90 - 110	P	08/11/2022	20:05	LB121471
	Cadmium	2420	2500	97	90 - 110	P	08/11/2022	20:05	LB121471
	Chromium	983	1000	98	90 - 110	P	08/11/2022	20:05	LB121471
	Lead	4730	5000	95	90 - 110	P	08/11/2022	20:05	LB121471
	Selenium	5100	5000	102	90 - 110	P	08/11/2022	20:05	LB121471
	Silver	1230	1250	99	90 - 110	P	08/11/2022	20:05	LB121471
CCV09	Arsenic	4950	5000	99	90 - 110	P	08/11/2022	21:14	LB121471
	Barium	9820	10000	98	90 - 110	P	08/11/2022	21:14	LB121471
	Cadmium	2460	2500	98	90 - 110	P	08/11/2022	21:14	LB121471
	Chromium	993	1000	99	90 - 110	P	08/11/2022	21:14	LB121471
	Lead	4790	5000	96	90 - 110	P	08/11/2022	21:14	LB121471
	Selenium	5110	5000	102	90 - 110	P	08/11/2022	21:14	LB121471
	Silver	1220	1250	98	90 - 110	P	08/11/2022	21:14	LB121471
CCV10	Arsenic	4960	5000	99	90 - 110	P	08/11/2022	22:01	LB121471
	Barium	10000	10000	100	90 - 110	P	08/11/2022	22:01	LB121471
	Cadmium	2480	2500	99	90 - 110	P	08/11/2022	22:01	LB121471
	Chromium	1010	1000	101	90 - 110	P	08/11/2022	22:01	LB121471
	Lead	4820	5000	96	90 - 110	P	08/11/2022	22:01	LB121471
	Selenium	5120	5000	102	90 - 110	P	08/11/2022	22:01	LB121471
	Silver	1230	1250	99	90 - 110	P	08/11/2022	22:01	LB121471
CCV11	Arsenic	4720	5000	94	90 - 110	P	08/11/2022	22:51	LB121471
	Barium	9940	10000	99	90 - 110	P	08/11/2022	22:51	LB121471
	Cadmium	2380	2500	95	90 - 110	P	08/11/2022	22:51	LB121471
	Chromium	996	1000	100	90 - 110	P	08/11/2022	22:51	LB121471
	Lead	4620	5000	92	90 - 110	P	08/11/2022	22:51	LB121471

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV11	Selenium	4860	5000	97	90 - 110	P	08/11/2022	22:51	LB121471
	Silver	1220	1250	97	90 - 110	P	08/11/2022	22:51	LB121471
CCV12	Arsenic	6.16	5000	0	90 - 110	P	08/11/2022	23:19	LB121471
	Barium	75.8	10000	1	90 - 110	P	08/11/2022	23:19	LB121471
	Cadmium	0.52	2500	0	90 - 110	P	08/11/2022	23:19	LB121471
	Chromium	5.91	1000	1	90 - 110	P	08/11/2022	23:19	LB121471
	Lead	3.88	5000	0	90 - 110	P	08/11/2022	23:19	LB121471
	Selenium	7.06	5000	0	90 - 110	P	08/11/2022	23:19	LB121471
	Silver	1.64	1250	0	90 - 110	P	08/11/2022	23:19	LB121471

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	981	1000	98	95 - 105	P	08/16/2022	12:48	LB121549
	Barium	530	520	102	95 - 105	P	08/16/2022	12:48	LB121549
	Cadmium	486	510	95	95 - 105	P	08/16/2022	12:48	LB121549
	Chromium	535	520	103	95 - 105	P	08/16/2022	12:48	LB121549
	Lead	997	1000	100	95 - 105	P	08/16/2022	12:48	LB121549
	Selenium	1040	1000	104	95 - 105	P	08/16/2022	12:48	LB121549
	Silver	261	250	104	95 - 105	P	08/16/2022	12:48	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Arsenic	18.6	20.0	93	80 - 120	P	08/16/2022	12:58	LB121549
	Barium	108	100	108	80 - 120	P	08/16/2022	12:58	LB121549
	Cadmium	6.07	6.0	101	80 - 120	P	08/16/2022	12:58	LB121549
	Chromium	11.1	10.0	111	80 - 120	P	08/16/2022	12:58	LB121549
	Lead	13.2	12.0	110	80 - 120	P	08/16/2022	12:58	LB121549
	Selenium	20.7	20.0	104	80 - 120	P	08/16/2022	12:58	LB121549
	Silver	10.9	10.0	108	80 - 120	P	08/16/2022	12:58	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	4970	5000	99	90 - 110	P	08/16/2022	14:14	LB121549
	Barium	9860	10000	99	90 - 110	P	08/16/2022	14:14	LB121549
	Cadmium	2440	2500	98	90 - 110	P	08/16/2022	14:14	LB121549
	Chromium	1030	1000	102	90 - 110	P	08/16/2022	14:14	LB121549
	Lead	4790	5000	96	90 - 110	P	08/16/2022	14:14	LB121549
	Selenium	4930	5000	98	90 - 110	P	08/16/2022	14:14	LB121549
	Silver	1280	1250	103	90 - 110	P	08/16/2022	14:14	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Arsenic	20.6	20.0	103	80 - 120	P	08/16/2022	14:38	LB121549
	Barium	107	100	107	80 - 120	P	08/16/2022	14:38	LB121549
	Cadmium	6.29	6.0	105	80 - 120	P	08/16/2022	14:38	LB121549
	Chromium	11.8	10.0	118	80 - 120	P	08/16/2022	14:38	LB121549
	Lead	12.0	12.0	100	80 - 120	P	08/16/2022	14:38	LB121549
	Selenium	20.1	20.0	100	80 - 120	P	08/16/2022	14:38	LB121549
	Silver	11.2	10.0	112	80 - 120	P	08/16/2022	14:38	LB121549

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Arsenic	4990	5000	100	90 - 110	P	08/16/2022	15:28	LB121549
	Barium	9870	10000	99	90 - 110	P	08/16/2022	15:28	LB121549
	Cadmium	2460	2500	98	90 - 110	P	08/16/2022	15:28	LB121549
	Chromium	1040	1000	104	90 - 110	P	08/16/2022	15:28	LB121549
	Lead	4790	5000	96	90 - 110	P	08/16/2022	15:28	LB121549
	Selenium	4940	5000	99	90 - 110	P	08/16/2022	15:28	LB121549
	Silver	1290	1250	103	90 - 110	P	08/16/2022	15:28	LB121549
CCV03	Arsenic	5010	5000	100	90 - 110	P	08/16/2022	16:16	LB121549
	Barium	10100	10000	101	90 - 110	P	08/16/2022	16:16	LB121549
	Cadmium	2450	2500	98	90 - 110	P	08/16/2022	16:16	LB121549
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	16:16	LB121549
	Lead	4730	5000	94	90 - 110	P	08/16/2022	16:16	LB121549
	Selenium	4960	5000	99	90 - 110	P	08/16/2022	16:16	LB121549
	Silver	1270	1250	101	90 - 110	P	08/16/2022	16:16	LB121549
CCV04	Arsenic	5020	5000	100	90 - 110	P	08/16/2022	17:32	LB121549
	Barium	9940	10000	99	90 - 110	P	08/16/2022	17:32	LB121549
	Cadmium	2480	2500	99	90 - 110	P	08/16/2022	17:32	LB121549
	Chromium	1000	1000	100	90 - 110	P	08/16/2022	17:32	LB121549
	Lead	4990	5000	100	90 - 110	P	08/16/2022	17:32	LB121549
	Selenium	5030	5000	101	90 - 110	P	08/16/2022	17:32	LB121549
	Silver	1280	1250	103	90 - 110	P	08/16/2022	17:32	LB121549
CCV05	Arsenic	5040	5000	101	90 - 110	P	08/16/2022	18:20	LB121549
	Barium	9960	10000	100	90 - 110	P	08/16/2022	18:20	LB121549
	Cadmium	2500	2500	100	90 - 110	P	08/16/2022	18:20	LB121549
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	18:20	LB121549
	Lead	5010	5000	100	90 - 110	P	08/16/2022	18:20	LB121549
	Selenium	5030	5000	101	90 - 110	P	08/16/2022	18:20	LB121549
	Silver	1290	1250	103	90 - 110	P	08/16/2022	18:20	LB121549
CCV06	Arsenic	5010	5000	100	90 - 110	P	08/16/2022	19:10	LB121549
	Barium	9850	10000	98	90 - 110	P	08/16/2022	19:10	LB121549
	Cadmium	2500	2500	100	90 - 110	P	08/16/2022	19:10	LB121549
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	19:10	LB121549
	Lead	5020	5000	100	90 - 110	P	08/16/2022	19:10	LB121549
	Selenium	5010	5000	100	90 - 110	P	08/16/2022	19:10	LB121549

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV06	Silver	1310	1250	104	90 - 110	P	08/16/2022	19:10	LB121549
CCV07	Arsenic	4970	5000	99	90 - 110	P	08/16/2022	19:56	LB121549
	Barium	9680	10000	97	90 - 110	P	08/16/2022	19:56	LB121549
	Cadmium	2480	2500	99	90 - 110	P	08/16/2022	19:56	LB121549
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	19:56	LB121549
	Lead	5020	5000	100	90 - 110	P	08/16/2022	19:56	LB121549
	Selenium	4970	5000	99	90 - 110	P	08/16/2022	19:56	LB121549
	Silver	1310	1250	104	90 - 110	P	08/16/2022	19:56	LB121549
CCV08	Arsenic	4990	5000	100	90 - 110	P	08/16/2022	20:42	LB121549
	Barium	9950	10000	100	90 - 110	P	08/16/2022	20:42	LB121549
	Cadmium	2480	2500	99	90 - 110	P	08/16/2022	20:42	LB121549
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	20:42	LB121549
	Lead	5050	5000	101	90 - 110	P	08/16/2022	20:42	LB121549
	Selenium	5020	5000	100	90 - 110	P	08/16/2022	20:42	LB121549
	Silver	1300	1250	104	90 - 110	P	08/16/2022	20:42	LB121549
CCV09	Arsenic	4950	5000	99	90 - 110	P	08/16/2022	21:28	LB121549
	Barium	9890	10000	99	90 - 110	P	08/16/2022	21:28	LB121549
	Cadmium	2480	2500	99	90 - 110	P	08/16/2022	21:28	LB121549
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	21:28	LB121549
	Lead	5040	5000	101	90 - 110	P	08/16/2022	21:28	LB121549
	Selenium	4960	5000	99	90 - 110	P	08/16/2022	21:28	LB121549
	Silver	1300	1250	104	90 - 110	P	08/16/2022	21:28	LB121549
CCV10	Arsenic	4960	5000	99	90 - 110	P	08/16/2022	22:15	LB121549
	Barium	9810	10000	98	90 - 110	P	08/16/2022	22:15	LB121549
	Cadmium	2490	2500	99	90 - 110	P	08/16/2022	22:15	LB121549
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	22:15	LB121549
	Lead	5070	5000	101	90 - 110	P	08/16/2022	22:15	LB121549
	Selenium	5000	5000	100	90 - 110	P	08/16/2022	22:15	LB121549
	Silver	1300	1250	104	90 - 110	P	08/16/2022	22:15	LB121549
CCV11	Arsenic	4960	5000	99	90 - 110	P	08/16/2022	23:01	LB121549
	Barium	9790	10000	98	90 - 110	P	08/16/2022	23:01	LB121549
	Cadmium	2480	2500	99	90 - 110	P	08/16/2022	23:01	LB121549
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	23:01	LB121549
	Lead	5080	5000	102	90 - 110	P	08/16/2022	23:01	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV11	Selenium	4980	5000	100	90 - 110	P	08/16/2022	23:01	LB121549
	Silver	1310	1250	105	90 - 110	P	08/16/2022	23:01	LB121549
CCV12	Arsenic	4900	5000	98	90 - 110	P	08/16/2022	23:48	LB121549
	Barium	9850	10000	98	90 - 110	P	08/16/2022	23:48	LB121549
	Cadmium	2460	2500	98	90 - 110	P	08/16/2022	23:48	LB121549
	Chromium	1010	1000	100	90 - 110	P	08/16/2022	23:48	LB121549
	Lead	5050	5000	101	90 - 110	P	08/16/2022	23:48	LB121549
	Selenium	4940	5000	99	90 - 110	P	08/16/2022	23:48	LB121549
	Silver	1300	1250	104	90 - 110	P	08/16/2022	23:48	LB121549
CCV13	Arsenic	4920	5000	98	90 - 110	P	08/17/2022	00:11	LB121549
	Barium	9790	10000	98	90 - 110	P	08/17/2022	00:11	LB121549
	Cadmium	2470	2500	99	90 - 110	P	08/17/2022	00:11	LB121549
	Chromium	995	1000	100	90 - 110	P	08/17/2022	00:11	LB121549
	Lead	5070	5000	101	90 - 110	P	08/17/2022	00:11	LB121549
	Selenium	4980	5000	100	90 - 110	P	08/17/2022	00:11	LB121549
	Silver	1300	1250	104	90 - 110	P	08/17/2022	00:11	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Arsenic	20.7	20.0	103	40 - 160	P	08/11/2022	11:59	LB121471
	Barium	105	100	105	40 - 160	P	08/11/2022	11:59	LB121471
	Cadmium	6.04	6.0	101	40 - 160	P	08/11/2022	11:59	LB121471
	Chromium	11.2	10.0	112	40 - 160	P	08/11/2022	11:59	LB121471
	Lead	12.2	12.0	102	40 - 160	P	08/11/2022	11:59	LB121471
	Selenium	20.5	20.0	103	40 - 160	P	08/11/2022	11:59	LB121471
	Silver	10.6	10.0	106	40 - 160	P	08/11/2022	11:59	LB121471
CRA	Mercury	0.21	0.2	103	40 - 160	CV	08/12/2022	11:11	LB121477
CRI01	Arsenic	20.8	20.0	104	40 - 160	P	08/16/2022	13:06	LB121549
	Barium	108	100	108	40 - 160	P	08/16/2022	13:06	LB121549
	Cadmium	6.20	6.0	103	40 - 160	P	08/16/2022	13:06	LB121549
	Chromium	11.3	10.0	113	40 - 160	P	08/16/2022	13:06	LB121549
	Lead	13.1	12.0	109	40 - 160	P	08/16/2022	13:06	LB121549
	Selenium	22.2	20.0	111	40 - 160	P	08/16/2022	13:06	LB121549
	Silver	11.1	10.0	111	40 - 160	P	08/16/2022	13:06	LB121549

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB82	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	11:01	LB121477

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB17	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	11:08	LB121477
CCB18	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	11:38	LB121477
CCB19	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	12:05	LB121477
CCB20	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	12:30	LB121477
CCB21	Mercury	0.20	+/-0.20	U	0.20	CV	08/12/2022	12:55	LB121477

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	11:55	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	11:55	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	11:55	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	11:55	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	11:55	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	11:55	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	11:55	LB121471

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	12:27	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	12:27	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	12:27	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	12:27	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	12:27	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	12:27	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	12:27	LB121471
CCB02	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	13:18	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	13:18	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	13:18	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	13:18	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	13:18	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	13:18	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	13:18	LB121471
CCB03	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	14:07	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	14:07	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	14:07	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	14:07	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	14:07	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	14:07	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	14:07	LB121471
CCB04	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	16:36	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	16:36	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	16:36	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	16:36	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	16:36	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	16:36	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	16:36	LB121471
CCB05	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	17:31	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	17:31	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	17:31	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	17:31	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	17:31	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	17:31	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	17:31	LB121471
CCB06	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	18:18	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	18:18	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	18:18	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	18:18	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	18:18	LB121471

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	18:18	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	18:18	LB121471
CCB07	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	19:21	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	19:21	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	19:21	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	19:21	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	19:21	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	19:21	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	19:21	LB121471
CCB08	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	20:09	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	20:09	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	20:09	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	20:09	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	20:09	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	20:09	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	20:09	LB121471
CCB09	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	21:18	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	21:18	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	21:18	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	21:18	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	21:18	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	21:18	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	21:18	LB121471
CCB10	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	22:05	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	22:05	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	22:05	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	22:05	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	22:05	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	22:05	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	22:05	LB121471
CCB11	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	22:55	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	22:55	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	22:55	LB121471
	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	22:55	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	22:55	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	22:55	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	22:55	LB121471
CCB12	Arsenic	20.0	+/-20.0	U	20.0	P	08/11/2022	23:23	LB121471
	Barium	100	+/-100	U	100	P	08/11/2022	23:23	LB121471
	Cadmium	6.00	+/-6.00	U	6.00	P	08/11/2022	23:23	LB121471

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB12	Chromium	10.0	+/-10.0	U	10.0	P	08/11/2022	23:23	LB121471
	Lead	12.0	+/-12.0	U	12.0	P	08/11/2022	23:23	LB121471
	Selenium	20.0	+/-20.0	U	20.0	P	08/11/2022	23:23	LB121471
	Silver	10.0	+/-10.0	U	10.0	P	08/11/2022	23:23	LB121471

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	13:02	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	13:02	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	13:02	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	13:02	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	13:02	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	13:02	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	13:02	LB121549

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	14:42	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	14:42	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	14:42	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	14:42	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	14:42	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	14:42	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	14:42	LB121549
CCB02	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	15:32	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	15:32	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	15:32	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	15:32	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	15:32	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	15:32	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	15:32	LB121549
CCB03	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	16:20	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	16:20	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	16:20	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	16:20	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	16:20	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	16:20	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	16:20	LB121549
CCB04	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	17:36	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	17:36	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	17:36	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	17:36	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	17:36	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	17:36	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	17:36	LB121549
CCB05	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	18:24	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	18:24	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	18:24	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	18:24	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	18:24	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	18:24	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	18:24	LB121549
CCB06	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	19:14	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	19:14	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	19:14	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	19:14	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	19:14	LB121549

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	19:14	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	19:14	LB121549
CCB07	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	20:00	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	20:00	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	20:00	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	20:00	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	20:00	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	20:00	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	20:00	LB121549
CCB08	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	20:46	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	20:46	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	20:46	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	20:46	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	20:46	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	20:46	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	20:46	LB121549
CCB09	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	21:32	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	21:32	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	21:32	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	21:32	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	21:32	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	21:32	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	21:32	LB121549
CCB10	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	22:19	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	22:19	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	22:19	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	22:19	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	22:19	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	22:19	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	22:19	LB121549
CCB11	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	23:05	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	23:05	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	23:05	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	23:05	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	23:05	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	23:05	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	23:05	LB121549
CCB12	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	23:52	LB121549
	Barium	100	+/-100	U	100	P	08/16/2022	23:52	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	23:52	LB121549

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB12	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	23:52	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	23:52	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	23:52	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	23:52	LB121549
CCB13	Arsenic	20.0	+/-20.0	U	20.0	P	08/17/2022	00:15	LB121549
	Barium	100	+/-100	U	100	P	08/17/2022	00:15	LB121549
	Cadmium	6.00	+/-6.00	U	6.00	P	08/17/2022	00:15	LB121549
	Chromium	10.0	+/-10.0	U	10.0	P	08/17/2022	00:15	LB121549
	Lead	12.0	+/-12.0	U	12.0	P	08/17/2022	00:15	LB121549
	Selenium	20.0	+/-20.0	U	20.0	P	08/17/2022	00:15	LB121549
	Silver	10.0	+/-10.0	U	10.0	P	08/17/2022	00:15	LB121549

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146911TB		**WATER**		**Batch Number:**	**PB146942**		**Prep Date:**	**08/11/2022**	
	Mercury	2.00	<2.00	U	2.00	CV	08/12/2022	12:32	LB121477

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146942BL		**WATER**		**Batch Number:**	**PB146942**		**Prep Date:**	**08/11/2022**	
	Mercury	0.20	<0.20	U	0.20	CV	08/12/2022	11:17	LB121477

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146911TB		**WATER**		**Batch Number:**	**PB146940**		**Prep Date:**	**08/11/2022**	
	Arsenic	100	<100	U	100	P	08/11/2022	20:26	LB121471
	Barium	500	<500	U	500	P	08/11/2022	20:26	LB121471
	Cadmium	30.0	<30.0	U	30.0	P	08/11/2022	20:26	LB121471
	Chromium	11.9	<50.0	J	50.0	P	08/11/2022	20:26	LB121471
	Lead	60.0	<60.0	U	60.0	P	08/11/2022	20:26	LB121471
	Selenium	100	<100	U	100	P	08/11/2022	20:26	LB121471
	Silver	50.0	<50.0	U	50.0	P	08/11/2022	20:26	LB121471

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146940BL		**WATER**		**Batch Number:**	**PB146940**		**Prep Date:**	**08/11/2022**	
	Arsenic	100	<100	U	100	P	08/11/2022	20:21	LB121471
	Barium	500	<500	U	500	P	08/11/2022	20:21	LB121471
	Cadmium	30.0	<30.0	U	30.0	P	08/11/2022	20:21	LB121471
	Chromium	50.0	<50.0	U	50.0	P	08/11/2022	20:21	LB121471
	Lead	60.0	<60.0	U	60.0	P	08/11/2022	20:21	LB121471
	Selenium	100	<100	U	100	P	08/11/2022	20:21	LB121471
	Silver	50.0	<50.0	U	50.0	P	08/11/2022	20:21	LB121471

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Arsenic	-4.55			-20	20	08/11/2022	12:03	LB121471
	Barium	6.55	6.0	109	-94	106	08/11/2022	12:03	LB121471
	Cadmium	-1.37	1.0	137	-5	7	08/11/2022	12:03	LB121471
	Chromium	57.1	52.0	110	42	62	08/11/2022	12:03	LB121471
	Lead	-0.91			-12	12	08/11/2022	12:03	LB121471
	Selenium	-0.79			-20	20	08/11/2022	12:03	LB121471
	Silver	-0.24			-10	10	08/11/2022	12:03	LB121471
ICSAB01	Arsenic	95.0	100	95	85	120	08/11/2022	12:07	LB121471
	Barium	502	540	93	440	640	08/11/2022	12:07	LB121471
	Cadmium	959	970	99	820	1100	08/11/2022	12:07	LB121471
	Chromium	563	540	104	460	620	08/11/2022	12:07	LB121471
	Lead	47.6	49.0	97	37	61	08/11/2022	12:07	LB121471
	Selenium	47.6	46.0	104	26	66	08/11/2022	12:07	LB121471
	Silver	219	200	110	170	230	08/11/2022	12:07	LB121471
ICSA01	Arsenic	-5.24			-20	20	08/16/2022	13:14	LB121549
	Barium	6.78	6.0	113	-94	106	08/16/2022	13:14	LB121549
	Cadmium	-0.062	1.0	6	-5	7	08/16/2022	13:14	LB121549
	Chromium	59.8	52.0	115	42	62	08/16/2022	13:14	LB121549
	Lead	0.065			-12	12	08/16/2022	13:14	LB121549
	Selenium	2.58			-20	20	08/16/2022	13:14	LB121549
	Silver	-6.93			-10	10	08/16/2022	13:14	LB121549
ICSAB01	Arsenic	93.7	100	94	85	120	08/16/2022	13:26	LB121549
	Barium	500	540	93	440	640	08/16/2022	13:26	LB121549
	Cadmium	947	970	98	820	1100	08/16/2022	13:26	LB121549
	Chromium	574	540	106	460	620	08/16/2022	13:26	LB121549
	Lead	45.9	49.0	94	37	61	08/16/2022	13:26	LB121549
	Selenium	48.1	46.0	105	26	66	08/16/2022	13:26	LB121549
	Silver	217	200	108	170	230	08/16/2022	13:26	LB121549

METAL QC DATA

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4130

contract: loui01 **lab code:** CHEM **case no.:** N4130 **sas no.:** N4130

matrix: Water **sample id:** N4141-01 **client id:** SOILD-WASTEMS

Percent Solids for Sample: NA **Spiked ID:** N4141-01MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3950		100	U	4000	99		P
Barium	ug/L	75 - 125	2360		1210		1000	115		P
Cadmium	ug/L	75 - 125	947		30.0	U	1000	95		P
Chromium	ug/L	75 - 125	2130		16.4	J	2000	106		P
Lead	ug/L	75 - 125	4530		21.8	J	5000	90		P
Mercury	ug/L	75 - 125	35.8		2.00	U	40.0	90		CV
Selenium	ug/L	75 - 125	9860		100	U	10000	99		P
Silver	ug/L	75 - 125	396		50.0	U	380	104		P

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4130

contract: loui01 **lab code:** CHEM **case no.:** N4130 **sas no.:** N4130

matrix: Water **sample id:** N4141-01 **client id:** SOILD-WASTEMSD

Percent Solids for Sample: NA **Spiked ID:** N4141-01MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3930		100	U	4000	98		P
Barium	ug/L	75 - 125	2340		1210		1000	113		P
Cadmium	ug/L	75 - 125	931		30.0	U	1000	93		P
Chromium	ug/L	75 - 125	2150		16.4	J	2000	107		P
Lead	ug/L	75 - 125	4450		21.8	J	5000	89		P
Mercury	ug/L	75 - 125	33.4		2.00	U	40.0	84		CV
Selenium	ug/L	75 - 125	9810		100	U	10000	98		P
Silver	ug/L	75 - 125	402		50.0	U	380	106		P

CHEMTECH

Metals
- 5b -

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Matrix: Water **Sample ID:** N4141-01 **Client ID:** SOILD-WASTEDUP

Percent Solids for Sample: NA **Duplicate ID** N4141-01DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	1210		1230		2		P
Cadmium	ug/L	20	30.0	U	30.0	U			P
Chromium	ug/L	20	16.4	J	16.7	J	2		P
Lead	ug/L	20	21.8	J	23.4	J	7		P
Mercury	ug/L	20	2.00	U	2.00	U			CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Matrix: Water **Sample ID:** N4141-01MS **Client ID:** SOILD-WASTEMSD

Percent Solids for Sample: NA **Duplicate ID** N4141-01MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	3950		3930		1		P
Barium	ug/L	20	2360		2340		1		P
Cadmium	ug/L	20	947		931		2		P
Chromium	ug/L	20	2130		2150		1		P
Lead	ug/L	20	4530		4450		2		P
Mercury	ug/L	20	35.8		33.4		7		CV
Selenium	ug/L	20	9860		9810		1		P
Silver	ug/L	20	396		402		2		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB146940BS							
Arsenic	ug/L	4000	3930		98	80 - 120	P
Barium	ug/L	1000	1090		109	80 - 120	P
Cadmium	ug/L	1000	966		97	80 - 120	P
Chromium	ug/L	2000	2110		106	80 - 120	P
Lead	ug/L	5000	4910		98	80 - 120	P
Selenium	ug/L	10000	10600		106	80 - 120	P
Silver	ug/L	380	393		103	80 - 120	P

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB146942BS							
Mercury	ug/L	4.0	4.14		104	80 - 120	CV

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

SOILD-WASTEL

Lab Name: Chemtech Consulting Group **Contract:** loui01

Lab Code: CHEM **Lb No.:** lb121549 **Lab Sample ID :** N4141-01L **SDG No.:** N4130

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	100	U	500	U			P
Barium	1210		1230	J	1		P
Cadmium	30.0	U	150	U			P
Chromium	16.4	J	250	U	100.0		P
Lead	21.8	J	300	U	100.0		P
Mercury	2.00	U	10.0	U			CV
Selenium	100	U	500	U			P
Silver	50.0	U	250	U			P

METAL PREPARATION & INSTRUMENT DATA

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0001380	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000890	0.0000000	0.0000460	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001960	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001430	0.0000000	0.0000000

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0005750
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Arsenic	193.759	-0.0019440	0.0000000	0.0000000	0.0000000	0.0003800
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0002110	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000700	-0.0014440
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0004280	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0001890	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Arsenic	193.759	0.0000000	0.0002020	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	-0.0001570	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0001070	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4130 **SAS No.:** N4130

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0001560	-0.0003220
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0001090
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0001700	0.0000000	-0.0007490	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4130 **SAS No.:** N4130

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB146940**						
N4130-02	SB02	SAM	WATER	08/11/2022	5.0	25.0	
N4130-04	SB03	SAM	WATER	08/11/2022	5.0	25.0	
N4130-06	SB05	SAM	WATER	08/11/2022	5.0	25.0	
N4130-08	SB06	SAM	WATER	08/11/2022	5.0	25.0	
N4130-10	SB07	SAM	WATER	08/11/2022	5.0	25.0	
N4130-12	SB09	SAM	WATER	08/11/2022	5.0	25.0	
N4130-14	SB04	SAM	WATER	08/11/2022	5.0	25.0	
N4130-16	SB01	SAM	WATER	08/11/2022	5.0	25.0	
N4141-01DUP	SOILD-WASTEDUP	DUP	WATER	08/11/2022	5.0	25.0	
N4141-01MS	SOILD-WASTEMS	MS	WATER	08/11/2022	5.0	25.0	
N4141-01MSD	SOILD-WASTEMSD	MSD	WATER	08/11/2022	5.0	25.0	
PB146911TB	PB146911TB	MB	WATER	08/11/2022	5.0	25.0	
PB146940BL	PB146940BL	MB	WATER	08/11/2022	5.0	25.0	
PB146940BS	PB146940BS	LCS	WATER	08/11/2022	5.0	25.0	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4130 **SAS No.:** N4130

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB146942**						
N4130-02	SB02	SAM	WATER	08/11/2022	3.0	30.0	
N4130-04	SB03	SAM	WATER	08/11/2022	3.0	30.0	
N4130-06	SB05	SAM	WATER	08/11/2022	3.0	30.0	
N4130-08	SB06	SAM	WATER	08/11/2022	3.0	30.0	
N4130-10	SB07	SAM	WATER	08/11/2022	3.0	30.0	
N4130-12	SB09	SAM	WATER	08/11/2022	3.0	30.0	
N4130-14	SB04	SAM	WATER	08/11/2022	3.0	30.0	
N4130-16	SB01	SAM	WATER	08/11/2022	3.0	30.0	
N4141-01DUP	SOILD-WASTEDUP	DUP	WATER	08/11/2022	3.0	30.0	
N4141-01MS	SOILD-WASTEMS	MS	WATER	08/11/2022	3.0	30.0	
N4141-01MSD	SOILD-WASTEMSD	MSD	WATER	08/11/2022	3.0	30.0	
PB146911TB	PB146911TB	MB	WATER	08/11/2022	3.0	30.0	
PB146942BL	PB146942BL	MB	WATER	08/11/2022	30.0	30.0	
PB146942BS	PB146942BS	LCS	WATER	08/11/2022	30.0	30.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4130 **Sas no.:** N4130 **Sdg no.:** N4130

Instrument id number: **Method:** **Run number:** LB121471

Start date: 08/11/2022 **End date:** 08/11/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1104	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1108	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1111	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1115	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1119	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1123	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1133	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1150	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1155	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1159	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1203	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1207	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1219	Ag,As,Ba,Cd,Cr,Pb,Se
LLCCV01	LLCCV01	1	1223	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1227	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1314	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1318	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1403	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1407	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1632	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1636	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1727	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1731	Ag,As,Ba,Cd,Cr,Pb,Se
CCV06	CCV06	1	1814	Ag,As,Ba,Cd,Cr,Pb,Se
CCB06	CCB06	1	1818	Ag,As,Ba,Cd,Cr,Pb,Se
CCV07	CCV07	1	1917	Ag,As,Ba,Cd,Cr,Pb,Se
CCB07	CCB07	1	1921	Ag,As,Ba,Cd,Cr,Pb,Se
CCV08	CCV08	1	2005	Ag,As,Ba,Cd,Cr,Pb,Se
CCB08	CCB08	1	2009	Ag,As,Ba,Cd,Cr,Pb,Se
PB146940BS	PB146940BS	1	2018	Ag,As,Ba,Cd,Cr,Pb,Se
PB146940BL	PB146940BL	1	2021	Ag,As,Ba,Cd,Cr,Pb,Se
PB146911TB	PB146911TB	1	2026	Ag,As,Ba,Cd,Cr,Pb,Se
CCV09	CCV09	1	2114	Ag,As,Ba,Cd,Cr,Pb,Se
CCB09	CCB09	1	2118	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-02	SB02	1	2153	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-04	SB03	1	2157	Ag,As,Ba,Cd,Cr,Pb,Se
CCV10	CCV10	1	2201	Ag,As,Ba,Cd,Cr,Pb,Se
CCB10	CCB10	1	2205	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-06	SB05	1	2209	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-08	SB06	1	2214	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-10	SB07	1	2218	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-12	SB09	1	2222	Ag,As,Ba,Cd,Cr,Pb,Se
N4130-14	SB04	1	2226	Ag,As,Ba,Cd,Cr,Pb,Se

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4130 **Sas no.:** N4130 **Sdg no.:** N4130

Instrument id number: **Method:** **Run number:** LB121471

Start date: 08/11/2022 **End date:** 08/11/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
N4130-16	SB01	1	2230	Ag,As,Ba,Cd,Cr,Pb,Se
CCV11	CCV11	1	2251	Ag,As,Ba,Cd,Cr,Pb,Se
CCB11	CCB11	1	2255	Ag,As,Ba,Cd,Cr,Pb,Se
CCV12	CCV12	1	2319	Ag,As,Ba,Cd,Cr,Pb,Se
CCB12	CCB12	1	2323	Ag,As,Ba,Cd,Cr,Pb,Se

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4130 **Sas no.:** N4130 **Sdg no.:** N4130

Instrument id number: **Method:** **Run number:** LB121477

Start date: 08/12/2022 **End date:** 08/12/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1038	HG
S0.2	S0.2	1	1040	HG
S2.5	S2.5	1	1043	HG
S5	S5	1	1045	HG
S7.5	S7.5	1	1047	HG
S10	S10	1	1056	HG
ICV82	ICV82	1	1059	HG
ICB82	ICB82	1	1101	HG
CCV17	CCV17	1	1106	HG
CCB17	CCB17	1	1108	HG
CRA	CRA	1	1111	HG
PB146942BL	PB146942BL	1	1117	HG
PB146942BS	PB146942BS	1	1122	HG
N4130-02	SB02	1	1127	HG
N4130-04	SB03	1	1129	HG
N4130-06	SB05	1	1131	HG
N4130-08	SB06	1	1134	HG
CCV18	CCV18	1	1136	HG
CCB18	CCB18	1	1138	HG
N4130-10	SB07	1	1140	HG
N4130-12	SB09	1	1143	HG
N4130-14	SB04	1	1145	HG
N4130-16	SB01	1	1147	HG
N4141-01DUP	SOILD-WASTEDUP	1	1159	HG
N4141-01MS	SOILD-WASTEMS	1	1201	HG
CCV19	CCV19	1	1203	HG
CCB19	CCB19	1	1205	HG
N4141-01MSD	SOILD-WASTEMSD	1	1208	HG
CCV20	CCV20	1	1228	HG
CCB20	CCB20	1	1230	HG
PB146911TB	PB146911TB	1	1232	HG
N4141-01L	SOILD-WASTEL	5	1234	HG
CCV21	CCV21	1	1253	HG
CCB21	CCB21	1	1255	HG

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4130 **Sas no.:** N4130 **Sdg no.:** N4130

Instrument id number: **Method:** **Run number:** LB121549

Start date: 08/16/2022 **End date:** 08/17/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1221	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1225	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1229	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1232	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1236	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1240	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1248	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1258	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1302	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1306	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1314	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1326	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1414	Ag,As,Ba,Cd,Cr,Pb,Se
LLCCV01	LLCCV01	1	1438	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1442	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1528	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1532	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1616	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1620	Ag,As,Ba,Cd,Cr,Pb,Se
N4141-01DUP	SOILD-WASTEDUP	1	1655	Ag,As,Ba,Cd,Cr,Pb,Se
N4141-01L	SOILD-WASTEL	5	1659	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1732	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1736	Ag,As,Ba,Cd,Cr,Pb,Se
N4141-01MS	SOILD-WASTEMS	1	1740	Ag,As,Ba,Cd,Cr,Pb,Se
N4141-01MSD	SOILD-WASTEMSD	1	1744	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1820	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1824	Ag,As,Ba,Cd,Cr,Pb,Se
CCV06	CCV06	1	1910	Ag,As,Ba,Cd,Cr,Pb,Se
CCB06	CCB06	1	1914	Ag,As,Ba,Cd,Cr,Pb,Se
CCV07	CCV07	1	1956	Ag,As,Ba,Cd,Cr,Pb,Se
CCB07	CCB07	1	2000	Ag,As,Ba,Cd,Cr,Pb,Se
CCV08	CCV08	1	2042	Ag,As,Ba,Cd,Cr,Pb,Se
CCB08	CCB08	1	2046	Ag,As,Ba,Cd,Cr,Pb,Se
CCV09	CCV09	1	2128	Ag,As,Ba,Cd,Cr,Pb,Se
CCB09	CCB09	1	2132	Ag,As,Ba,Cd,Cr,Pb,Se
CCV10	CCV10	1	2215	Ag,As,Ba,Cd,Cr,Pb,Se
CCB10	CCB10	1	2219	Ag,As,Ba,Cd,Cr,Pb,Se
CCV11	CCV11	1	2301	Ag,As,Ba,Cd,Cr,Pb,Se
CCB11	CCB11	1	2305	Ag,As,Ba,Cd,Cr,Pb,Se
CCV12	CCV12	1	2348	Ag,As,Ba,Cd,Cr,Pb,Se
CCB12	CCB12	1	2352	Ag,As,Ba,Cd,Cr,Pb,Se
CCV13	CCV13	1	0011	Ag,As,Ba,Cd,Cr,Pb,Se
CCB13	CCB13	1	0015	Ag,As,Ba,Cd,Cr,Pb,Se

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4130	**OrderDate:**	8/10/2022 8:56:20 AM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	J11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4130-01	**SB02**	**SOIL**			**08/08/22 09:00**			**08/09/22**
			Paint Filter	9095B			08/11/22 10:18	
N4130-02	**SB02**	**SOIL**			**08/08/22 09:00**			**08/09/22**
			Corrosivity	9045D			08/10/22 13:40	
			Ignitability	1030			08/11/22 15:15	
			Reactive Cyanide	9012B		08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034		08/10/22	08/10/22 15:05	
N4130-03	**SB03**	**SOIL**			**08/08/22 11:35**			**08/09/22**
			Paint Filter	9095B			08/11/22 10:25	
N4130-04	**SB03**	**SOIL**			**08/08/22 11:35**			**08/09/22**
			Corrosivity	9045D			08/10/22 13:42	
			Ignitability	1030			08/11/22 15:22	
			Reactive Cyanide	9012B		08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034		08/10/22	08/10/22 15:08	
N4130-05	**SB05**	**SOIL**			**08/08/22 14:35**			**08/09/22**

LAB CHRONICLE

			Paint Filter	9095B		08/11/22 10:32	
N4130-06	**SB05**	**SOIL**			**08/08/22 14:35**		**08/09/22**
			Corrosivity	9045D		08/10/22 13:45	
			Ignitability	1030		08/11/22 15:30	
			Reactive Cyanide	9012B	08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034	08/10/22	08/10/22 15:10	
N4130-07	**SB06**	**SOIL**			**08/09/22 07:50**		**08/09/22**
			Paint Filter	9095B		08/11/22 10:40	
N4130-08	**SB06**	**SOIL**			**08/09/22 07:50**		**08/09/22**
			Corrosivity	9045D		08/10/22 13:46	
			Ignitability	1030		08/11/22 15:38	
			Reactive Cyanide	9012B	08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034	08/10/22	08/10/22 15:12	
N4130-09	**SB07**	**SOIL**			**08/09/22 09:30**		**08/09/22**
			Paint Filter	9095B		08/11/22 10:48	
N4130-10	**SB07**	**SOIL**			**08/09/22 09:30**		**08/09/22**
			Corrosivity	9045D		08/10/22 13:49	
			Ignitability	1030		08/11/22 15:45	
			Reactive Cyanide	9012B	08/10/22	08/10/22 14:16	

LAB CHRONICLE

			Reactive Sulfide	9034		08/10/22	08/10/22 15:15	
N4130-11	**SB09**	**SOIL**			**08/09/22 11:05**			**08/09/22**
			Paint Filter	9095B			08/11/22 10:52	
N4130-12	**SB09**	**SOIL**			**08/09/22 11:05**			**08/09/22**
			Corrosivity	9045D			08/10/22 13:50	
			Ignitability	1030			08/11/22 15:52	
			Reactive Cyanide	9012B		08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034		08/10/22	08/10/22 15:18	
N4130-13	**SB04**	**SOIL**			**08/09/22 13:05**			**08/09/22**
			Paint Filter	9095B			08/11/22 11:00	
N4130-14	**SB04**	**SOIL**			**08/09/22 13:05**			**08/09/22**
			Corrosivity	9045D			08/10/22 14:00	
			Ignitability	1030			08/11/22 16:00	
			Reactive Cyanide	9012B		08/10/22	08/10/22 14:16	
			Reactive Sulfide	9034		08/10/22	08/10/22 15:20	
N4130-15	**SB01**	**SOIL**			**08/09/22 14:40**			**08/09/22**
			Paint Filter	9095B			08/11/22 11:08	
N4130-16	**SB01**	**SOIL**			**08/09/22 14:40**			**08/09/22**
			Corrosivity	9045D			08/10/22 14:02	

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

Ignitability	1030		08/11/22 16:08
Reactive Cyanide	9012B	08/10/22	08/10/22 14:16
Reactive Sulfide	9034	08/10/22	08/10/22 15:22

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 09:00
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-01	Matrix:	SOIL
		% Solid:	86.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:18	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 09:00
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB02	SDG No.:	N4130
Lab Sample ID:	N4130-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.16	H	1	0	0	pH		08/10/22 13:40	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:15	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:05	9034

Comments: pH result reported at temperature 23.5 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 11:35
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-03	Matrix:	SOIL
		% Solid:	81.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:25	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 11:35
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB03	SDG No.:	N4130
Lab Sample ID:	N4130-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	6.76	H	1	0	0	pH		08/10/22 13:42	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:22	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:08	9034

Comments: pH result reported at temperature 23.1 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 14:35
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-05	Matrix:	SOIL
		% Solid:	94.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:32	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/08/22 14:35
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB05	SDG No.:	N4130
Lab Sample ID:	N4130-06	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.25	H	1	0	0	pH		08/10/22 13:45	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:30	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:10	9034

Comments: pH result reported at temperature 23.1 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 07:50
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-07	Matrix:	SOIL
		% Solid:	77.8

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:40	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 07:50
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB06	SDG No.:	N4130
Lab Sample ID:	N4130-08	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.10	H	1	0	0	pH		08/10/22 13:46	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:38	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:12	9034

Comments: pH result reported at temperature 22.9 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 09:30
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-09	Matrix:	SOIL
		% Solid:	83

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:48	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 09:30
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB07	SDG No.:	N4130
Lab Sample ID:	N4130-10	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.38	H	1	0	0	pH		08/10/22 13:49	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:45	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:15	9034

Comments: pH result reported at temperature 22.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 11:05
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-11	Matrix:	SOIL
		% Solid:	88.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 10:52	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 11:05
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB09	SDG No.:	N4130
Lab Sample ID:	N4130-12	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.36	H	1	0	0	pH		08/10/22 13:50	9045D
Ignitability	NO		1	0	0	oC		08/11/22 15:52	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:18	9034

Comments: pH result reported at temperature 23.4 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 13:05
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-13	Matrix:	SOIL
		% Solid:	89.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 11:00	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 13:05
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB04	SDG No.:	N4130
Lab Sample ID:	N4130-14	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.67	H	1	0	0	pH		08/10/22 14:00	9045D
Ignitability	NO		1	0	0	oC		08/11/22 16:00	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:20	9034

Comments: pH result reported at temperature 21.9 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 14:40
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-15	Matrix:	SOIL
		% Solid:	91.8

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/11/22 11:08	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/09/22 14:40
Project:	QED1059 Phase II SCI	Date Received:	08/09/22
Client Sample ID:	SB01	SDG No.:	N4130
Lab Sample ID:	N4130-16	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	6.67	H	1	0	0	pH		08/10/22 14:02	9045D
Ignitability	NO		1	0	0	oC		08/11/22 16:08	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/10/22 09:35	08/10/22 14:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/10/22 11:45	08/10/22 15:22	9034

Comments: pH result reported at temperature 23.7 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

QC RESULT SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4130
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121439

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1						
Reactive Cyanide	mg/L	0.095	0.099	96	85-115	08/10/2022
Sample ID: CCV1						
Reactive Cyanide	mg/L	0.24	0.25	96	90-110	08/10/2022
Sample ID: CCV2						
Reactive Cyanide	mg/L	0.24	0.25	96	90-110	08/10/2022
Sample ID: CCV3						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/10/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4130
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121450

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	**ICV**						
Corrosivity		pH	6.98	7	100	90-110	08/10/2022
Sample ID:	**CCV1**						
Corrosivity		pH	2.01	2.00	101	90-110	08/10/2022
Sample ID:	**CCV2**						
Corrosivity		pH	12.03	12.00	100	90-110	08/10/2022
Sample ID:	**CCV3**						
Corrosivity		pH	2.01	2.00	101	90-110	08/10/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI **RunNo.:** LB121439

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/10/2022
Sample ID: CCB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/10/2022
Sample ID: CCB2							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/10/2022
Sample ID: CCB3							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/10/2022

Preparation Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4130

Project: QED1059 Phase II SCI

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB146913BL							
Reactive Cyanide	mg/Kg	< 0.0250	0.0250	U	0.05	0.05	08/10/2022
Sample ID: PB146915BL							
Reactive Sulfide	mg/Kg	< 5.0000	5.0000	U	10	10	08/10/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4130
Project: QED1059 Phase II SCI
Sample ID: N4093-02
Client ID: DRUM-AR-HYDDUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Cyanide	mg/Kg	+/-20	0.049	U	0.049	U	1	0		08/10/2022
Reactive Sulfide	mg/Kg	+/-20	10.0	U	10.0	U	1	0		08/10/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4130
Project: QED1059 Phase II SCI
Sample ID: N4093-04
Client ID: BLDG-4-BASEMENT-DRUMDUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Ignitability	oC	+/-20	NO		NO		1	0		08/11/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4130
Project: QED1059 Phase II SCI
Sample ID: N4119-01
Client ID: TP1-2-4FTDUP
Percent Solids for Spike Sample: 84.6

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	ml/100gm	+/-20	1.00	U	1.00	U	1	0		08/11/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4130
Project: QED1059 Phase II SCI
Sample ID: N4120-07
Client ID: BLDG-19CDUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	8.86		8.87		1	0.11		08/10/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4130
Project: QED1059 Phase II SCI
Sample ID: N4153-01
Client ID: TR-04-081022DUP
Percent Solids for Spike Sample: 97.7

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	ml/100gm	+/-20	1.00	U	1.00	U	1	0		08/11/2022

SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4130
COC Number 2036080

12
12.1

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave - Second Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5533 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED 1059
PROJECT NO.: LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz e gmail.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH * see N4C DDC Contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other
- ☒ EDD FORMAT EQuIS

ANALYSIS

1 TCL VOCs
2 PAHs
3 TPH-DRO/GRO
4 PCBs
5 TAL/CRCRA 8) Metals
6 RCRA Characteristics
7 Paint Filter
8
9

PRESERVATIVES

E E E G G G E

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

	CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1	2	3	4	5	6	7	8	9
1.		SB02	Soil	X	X	8/8/22	0900	5	X	X	X	X	X	X	X		
2.		SB03	Soil	X	X		1135	5	X	X	X	X	X	X	X		
3.		SB05	Soil	X	X		1435	5	X	X	X	X	X	X	X		
4.		SB06	Soil	X	X	8/9/22	0750	5	X	X	X	X	X	X	X		
5.		SB07	Soil	X	X		0930	5	X	X	X	X	X	X	X		
6.		SB09	Soil	X	X		1105	5	X	X	X	X	X	X	X		
7.		SB04	Soil	X	X		1305	5	X	X	X	X	X	X	X		
8.		SB01	Soil	X	X		1440	5	X	X	X	X	X	X	X		
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

	DATE/TIME		
1. RELINQUISHED BY SAMPLER: WSP	8/9/22 1630	1. RECEIVED BY:	1630 8-9-22
2. RELINQUISHED BY SAMPLER:	DATE/TIME:	2. RECEIVED BY:	
3. RELINQUISHED BY SAMPLER:	DATE/TIME:	3. RECEIVED BY:	

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.5 °C
Comments:

Page ____ of ____
CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☐ Picked Up ☐ Field Sampling
Shipment Complete ☐ YES ☐ NO

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255421
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-22-15

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4130 loui01
Client Name : Louis Berger U.S., Inc., A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S., Inc., A V
Invoice Contact : Jonathan Ganz

Order Date : 8/10/2022 8:56:20 AM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/9/2022 4:30:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
N4130-01	SB02	Solid	08/08/2022	09:00					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-03	SB03	Solid	08/08/2022	11:35					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-05	SB05	Solid	08/08/2022	14:35					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-07	SB06	Solid	08/09/2022	07:50					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-09	SB07	Solid	08/09/2022	09:30					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-11	SB09	Solid	08/09/2022	11:05					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-13	SB04	Solid	08/09/2022	13:05					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4130-15	SB01	Solid	08/09/2022	14:40					
					VOC-TCLVOA-10		8260D		2 Bus. Days

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4130 loui01
Client Name : Louis Berger U.S.. Inc., A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S.. Inc., A V
Invoice Contact : Jonathan Ganz

Order Date : 8/10/2022 8:56:20 AM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/9/2022 4:30:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES

Relinguished By : CD
Date / Time : 8/10/22 12:20

Received By : Sony
Date / Time : 08/10/22 12:20

Storage Area : VOA Refridgerator Room

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/16/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: SAME
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____
- ✓ EDD FORMAT Equis

ANALYSIS

1 TCL VOCs; 2 PAHs; 3 TPH-1120/8260; 4 PCBs; 5 TAL (RCRA 8 metals); 6 RCRA Characteristics; 7 Paint Filter; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X		
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X		
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

E = 1 2 3 4 5 6 7

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. WSP	8/12/22 1330	1.
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.7-C °C
Comments: TP-Comp #7

Page 1 of 1

CLIENT: ✓ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.92	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.98	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.20	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.95	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.00	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.77	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.92	5.40	ug/Kg
67-64-1	Acetone	26.8	U	13.1	26.8	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.80	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.7	U	6.40	10.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.75	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.90	5.40	ug/Kg
78-93-3	2-Butanone	26.8	U	7.80	26.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.85	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.87	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.72	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.80	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.86	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.71	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.90	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.78	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.75	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.8	U	4.90	26.8	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.79	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.76	5.40	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.92	5.40	ug/Kg
591-78-6	2-Hexanone	26.8	U	5.00	26.8	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.80	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.80	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.75	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.7	U	1.60	10.7	ug/Kg
95-47-6	o-Xylene	5.40	U	0.85	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.85	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.87	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.77	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.72	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.3		50 - 163	113%	SPK: 50
1868-53-7	Dibromofluoromethane	43.8		54 - 147	88%	SPK: 50
2037-26-5	Toluene-d8	32.3	*	78 - 125	65%	SPK: 50
460-00-4	4-Bromofluorobenzene	36.9		50 - 146	74%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	116000	7.967			
540-36-3	1,4-Difluorobenzene	208000	8.855			
3114-55-4	Chlorobenzene-d5	191000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	80600	13.555			
TENTATIVE IDENTIFIED COMPOUNDS						
055644-10-5	Silanol, dimethyl(1,1,2-trimethylp	12.2	J		7.18	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.80	U	1.00	5.80	ug/Kg
74-87-3	Chloromethane	5.80	U	1.20	5.80	ug/Kg
75-01-4	Vinyl Chloride	5.80	U	1.10	5.80	ug/Kg
74-83-9	Bromomethane	5.80	U	1.30	5.80	ug/Kg
75-00-3	Chloroethane	5.80	U	1.00	5.80	ug/Kg
75-69-4	Trichlorofluoromethane	5.80	U	1.10	5.80	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.80	U	0.84	5.80	ug/Kg
75-35-4	1,1-Dichloroethene	5.80	U	1.00	5.80	ug/Kg
67-64-1	Acetone	29.0	U	14.2	29.0	ug/Kg
75-15-0	Carbon Disulfide	5.80	U	0.87	5.80	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.80	U	1.10	5.80	ug/Kg
79-20-9	Methyl Acetate	5.80	U	1.50	5.80	ug/Kg
75-09-2	Methylene Chloride	11.6	U	6.90	11.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.80	U	0.79	5.80	ug/Kg
75-34-3	1,1-Dichloroethane	5.80	U	0.81	5.80	ug/Kg
110-82-7	Cyclohexane	5.80	U	0.98	5.80	ug/Kg
78-93-3	2-Butanone	29.0	U	8.50	29.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.80	U	0.92	5.80	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.80	U	0.79	5.80	ug/Kg
74-97-5	Bromochloromethane	5.80	U	0.94	5.80	ug/Kg
67-66-3	Chloroform	5.80	U	0.78	5.80	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.80	U	0.87	5.80	ug/Kg
108-87-2	Methylcyclohexane	5.80	U	0.93	5.80	ug/Kg
71-43-2	Benzene	5.80	U	0.77	5.80	ug/Kg
107-06-2	1,2-Dichloroethane	5.80	U	0.98	5.80	ug/Kg
79-01-6	Trichloroethene	5.80	U	0.85	5.80	ug/Kg
78-87-5	1,2-Dichloropropane	5.80	U	0.75	5.80	ug/Kg
75-27-4	Bromodichloromethane	5.80	U	0.81	5.80	ug/Kg
108-10-1	4-Methyl-2-Pentanone	29.0	U	5.30	29.0	ug/Kg
108-88-3	Toluene	5.80	U	0.73	5.80	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.80	U	0.86	5.80	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.80	U	0.82	5.80	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.80	U	1.00	5.80	ug/Kg
591-78-6	2-Hexanone	29.0	U	5.40	29.0	ug/Kg
124-48-1	Dibromochloromethane	5.80	U	0.87	5.80	ug/Kg
106-93-4	1,2-Dibromoethane	5.80	U	0.87	5.80	ug/Kg
127-18-4	Tetrachloroethene	5.80	U	0.88	5.80	ug/Kg
108-90-7	Chlorobenzene	5.80	U	0.75	5.80	ug/Kg
100-41-4	Ethyl Benzene	5.80	U	0.81	5.80	ug/Kg
179601-23-1	m/p-Xylenes	11.6	U	1.70	11.6	ug/Kg
95-47-6	o-Xylene	5.80	U	0.92	5.80	ug/Kg
100-42-5	Styrene	5.80	U	0.92	5.80	ug/Kg
75-25-2	Bromoform	5.80	U	0.94	5.80	ug/Kg
98-82-8	Isopropylbenzene	5.80	U	0.84	5.80	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.80	U	1.30	5.80	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.80	U	0.78	5.80	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.80	U	0.73	5.80	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.80	U	0.74	5.80	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.80	U	1.40	5.80	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.80	U	1.10	5.80	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.80	U	1.20	5.80	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.3		50 - 163	109%	SPK: 50
1868-53-7	Dibromofluoromethane	45.0		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	33.8	*	78 - 125	68%	SPK: 50
460-00-4	4-Bromofluorobenzene	36.7		50 - 146	73%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	118000	7.973			
540-36-3	1,4-Difluorobenzene	211000	8.855			
3114-55-4	Chlorobenzene-d5	194000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	84700	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	10.9	J		7.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

GC SEMI-VOLATILES

GENERAL CHEMISTRY

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/17/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: SAME PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) ______ DAYS*
HARDCOPY (DATA PACKAGE): ______ DAYS*
EDD: ______ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

❑ Level 1 (Results Only) ❑ Level 4 (QC + Full Raw Data)
❑ Level 2 (Results + QC) ❑ NJ Reduced ❑ US EPA CLP
❑ Level 3 (Results + QC + Raw Data) ❑ NYS ASP A ❑ NYS ASP B
❑ Other ______
✓ EDD FORMAT Equis

ANALYSIS

1. TCL VOCs
2. PAHs
3. TPH-DRO/GRO
4. PCBs
5. TCL P (RCRA 8 Metals)
6. RCRA Characteristics
7. Paint Filter
8.
9.

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 (E)	2 (E)	3 (E)	4 (E)	5 (E)	6 (E)	7 (E)	8	9	COMMENTS
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X			
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X			
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES — ← Specify Preservatives: A-HCl, B-HN03, C-H2SO4, D-NaOH, E-ICE, F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature] WSP	8/12/22 1330	1. [signature]
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ❑ COMPLIANT ❑ NON COMPLIANT ❑ COOLER TEMP 2.7 °C
Comments: IR-Gun #7

Page 1 of 1
CLIENT: ✓ Hand Delivered ❑ Other ______
CHEMTECH: ❑ Picked Up ❑ Field Sampling
Shipment Complete ❑ YES ❑ NO

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010366.D	1	08/13/22 09:40	08/15/22 12:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	856	J	235	1790	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.57	*	37 - 130	33%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10RE	SDG No.:	N4202
Lab Sample ID:	N4202-01RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011258.D	1	08/13/22 09:40	08/15/22 18:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1190	J	235	1790	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	7.16	*	37 - 130	36%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027974.D	50	08/15/22 22:40	FB081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	1710	J	191	2370	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.1		50 - 150	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 07:30
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.51	H	1	0	0	pH		08/13/22 13:35	9045D
Ignitability	NO		1	0	0	oC		08/15/22 15:05	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 15:10	9034

Comments: pH result reported at temperature 21.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011248.D	1	08/13/22 09:40	08/15/22 12:30	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9080		253	1930	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	15.6		37 - 130	78%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027975.D	50	08/15/22 23:17	FB081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	991	J	206	2560	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	23.4		50 - 150	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 10:55
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.77	H	1	0	0	pH		08/13/22 13:39	9045D
Ignitability	NO		1	0	0	oC		08/15/22 15:12	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 15:12	9034

Comments: pH result reported at temperature 21.5 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

SEMI-VOLATILE ORGANICS

GC SEMI-VOLATILES

METALS

GENERAL CHEMISTRY

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/19/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

The invoice for this workorder is also attached to the e-mail.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: SAME PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____
- ✓ EDD FORMAT Equis

ANALYSIS

1 TCL VOCs; 2 PAHs; 3 TPH-1120/602; 4 PCBs; 5 TAL (RCRA 8 metals); 6 RCRA Characteristics; 7 Paint Filter; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X		
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X		
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. WSP	8/12/22 1330	1.
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 27-C °C
Comments: TP-Comment #7

Page 1 of 1

CLIENT: ✓ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 07:30
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
		% Solid:	93.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 12:05	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089006.D	1	08/15/22 08:55	08/16/22 02:10	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.2	U	3.30	18.2	ug/kg
11104-28-2	Aroclor-1221	18.2	U	5.00	18.2	ug/kg
11141-16-5	Aroclor-1232	18.2	U	4.20	18.2	ug/kg
53469-21-9	Aroclor-1242	18.2	U	2.60	18.2	ug/kg
12672-29-6	Aroclor-1248	18.2	U	3.20	18.2	ug/kg
11097-69-1	Aroclor-1254	18.2	U	4.50	18.2	ug/kg
37324-23-5	Aroclor-1262	18.2	U	3.60	18.2	ug/kg
11100-14-4	Aroclor-1268	18.2	U	6.10	18.2	ug/kg
11096-82-5	Aroclor-1260	18.2	U	3.50	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.1		40 - 162	110%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.1		32 - 176	105%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6.8
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129895.D	1	08/15/22 09:20	08/19/22 01:33	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	79.1	180	ug/Kg
208-96-8	Acenaphthylene	180	U	73.5	180	ug/Kg
83-32-9	Acenaphthene	180	U	84.4	180	ug/Kg
86-73-7	Fluorene	180	U	84.3	180	ug/Kg
85-01-8	Phenanthrene	180	U	89.5	180	ug/Kg
120-12-7	Anthracene	180	U	89.9	180	ug/Kg
206-44-0	Fluoranthene	180	U	85.4	180	ug/Kg
129-00-0	Pyrene	180	U	79.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.9	180	ug/Kg
218-01-9	Chrysene	180	U	91.5	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.8	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	72.4	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	41.5		27 - 109	41%	SPK: 100
321-60-8	2-Fluorobiphenyl	45.9		30 - 103	46%	SPK: 100
1718-51-0	Terphenyl-d14	34.1		21 - 107	34%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	109000	6.792			
1146-65-2	Naphthalene-d8	398000	8.075			
15067-26-2	Acenaphthene-d10	176000	9.828			
1517-22-2	Phenanthrene-d10	273000	11.322			
1719-03-5	Chrysene-d12	264000	13.968			
1520-96-3	Perylene-d12	221000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6.8
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129895.D	1	08/15/22 09:20	08/19/22 01:33	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-39-3	Barium	1820		1	77.9	500	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-47-3	Chromium	13.4	J	1	10.4	50.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/16/22 13:30	08/17/22 11:52	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 10:55
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
		% Solid:	86.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 12:12	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089007.D	1	08/15/22 08:55	08/16/22 02:27	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.7	U	3.50	19.7	ug/kg
11104-28-2	Aroclor-1221	19.7	U	5.40	19.7	ug/kg
11141-16-5	Aroclor-1232	19.7	U	4.50	19.7	ug/kg
53469-21-9	Aroclor-1242	19.7	U	2.80	19.7	ug/kg
12672-29-6	Aroclor-1248	19.7	U	3.40	19.7	ug/kg
11097-69-1	Aroclor-1254	19.7	U	4.90	19.7	ug/kg
37324-23-5	Aroclor-1262	19.7	U	3.90	19.7	ug/kg
11100-14-4	Aroclor-1268	19.7	U	6.60	19.7	ug/kg
11096-82-5	Aroclor-1260	19.7	U	3.70	19.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.8		40 - 162	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.4		32 - 176	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129891.D	1	08/15/22 09:20	08/18/22 23:26	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	200	U	85.6	200	ug/Kg
208-96-8	Acenaphthylene	200	U	79.6	200	ug/Kg
83-32-9	Acenaphthene	200	U	91.4	200	ug/Kg
86-73-7	Fluorene	200	U	91.2	200	ug/Kg
85-01-8	Phenanthrene	200	U	96.8	200	ug/Kg
120-12-7	Anthracene	200	U	97.3	200	ug/Kg
206-44-0	Fluoranthene	200	U	92.4	200	ug/Kg
129-00-0	Pyrene	200	U	85.9	200	ug/Kg
56-55-3	Benzo(a)anthracene	200	U	100	200	ug/Kg
218-01-9	Chrysene	200	U	99.0	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	200	U	79.9	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	200	U	85.2	200	ug/Kg
50-32-8	Benzo(a)pyrene	200	U	78.4	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	200	U	120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	200	U	120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	200	U	110	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	61.8		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	64.6		30 - 103	65%	SPK: 100
1718-51-0	Terphenyl-d14	49.2		21 - 107	49%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	106000	6.793			
1146-65-2	Naphthalene-d8	412000	8.075			
15067-26-2	Acenaphthene-d10	196000	9.828			
1517-22-2	Phenanthrene-d10	281000	11.322			
1719-03-5	Chrysene-d12	211000	13.969			
1520-96-3	Perylene-d12	260000	15.427			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129891.D	1	08/15/22 09:20	08/18/22 23:26	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-39-3	Barium	1460		1	77.9	500	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/16/22 13:30	08/17/22 11:54	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

- Final -

Phase II Subsurface Corridor Investigation

for

Replacement of Distribution Water Mains in Various Locations, etc. Q2017-24 – Hillside Avenue from 211th to 213th Streets, etc., Borough of Queens, City of New York

DDC PROJECT NO. QED1059

WOL No. OEHS-20201409799-WOL-238

CONTRACT REGISTRATION NO. 20201409799

Prepared for:

NYC DDC Department of Design and Construction

Office of Environmental and Hazmat Services
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

Prepared by:

Louis Berger

Louis Berger U.S., Inc.
1 Penn Plaza, 2nd Floor
New York, NY 10119
Tel. (212) 612-7900
Fax (212) 363-4341
PROJECT NO. 31402661.219

September 16, 2022

TABLE OF CONTENTS

EXECUTIVE SUMMARY

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2017-24 Corridor located in the Hollis Court section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 1.46-mile (7,705-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
Hillside Avenue from 70 feet southwest of 211th Street to 80 feet northeast of 213th Street	1,315
89th Avenue from Hollis Court Boulevard to 213th Street	850
89th Road from 211th to 212th Streets	700
Hollis Court Boulevard from Hillside to 90th Avenues	1,600
212th Street from 25 feet northwest of Hillside Avenue to 130 feet southeast of 89th Avenue	800
212th Place from Hillside to 90th Avenues	1,600
213th Street from Hillside Avenue to 50 feet southeast of Hillside Avenue	70
213th Street from 110 feet northwest of to 50 feet southeast of 89th Avenue	200
211th Street from Hillside Avenue to 55 feet southeast of Hillside Avenue	55
211th Street from 50 feet northwest of 89th Road to 90th Avenue	515

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of eight soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

The Phase II SCI of the Q2017-24 Corridor was conducted by Louis Berger on August 10-12, 2022, and consisted of the following components:

- The advancement of eight soil borings (SB10 to SB17) utilizing hand tools and/or Vactron and air knife. Terminal depths of 6 ftbg were achieved at all of the soil boring locations;

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to their terminal depths using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the eight soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where recovery allowed, or the 6-inch interval above the encountered refusal or groundwater table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the eight soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above, or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

In order to evaluate subsurface soil quality for waste classification purposes, laboratory analytical results of soil samples were compared with regulatory standards identified in: New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Commercial Use (Track 2) Soil Cleanup Objectives (SCOs), Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings and conclusions are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the eight soil borings, including PID readings;
- Fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to dark yellowish orange, and grayish orange gravelly sand, sand, and silty sand to sandy silt were observed in all eight borings. Silty clay was also observed in SB12 and SB16. No anthropogenic fill (e.g., brick or ash) was observed in any of the borings;
- Bedrock was not encountered in any of the eight boring locations;
- Groundwater was not encountered in any of the eight boring locations;
- One VOC, acetone, was detected above the laboratory's reporting limits in two of the eight soil samples (SB13) collected as part of this Phase II SCI; however, all concentrations were below the applicable regulatory standards;
- Several PAHs were detected above the laboratory's reporting limits in two of the eight soil samples (SB11 and SB17); however, all concentrations were below the applicable regulatory standards;
- No PCBs were detected above the laboratory's reporting limits in any of the eight soil samples;
- The analytical laboratory results of the eight waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards;

Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity;

- Waste classification laboratory results indicate that TCLP barium and TCLP chromium were detected in all eight soil samples, while TCLP lead was detected in four of the eight soil samples; however, all concentrations were below the applicable RCRA Hazardous Waste Levels; and,

- TPH-DRO was detected above the laboratory's reporting limits in all eight waste classification soil samples at concentrations ranging from 0.548 J milligrams per kilogram (mg/kg) (SB13) to 85.5 mg/kg (SB11), and TPH-GRO was detected above the laboratory's reporting limits in all eight waste classification soil samples with concentrations ranging from 0.011 J mg/kg (SB15) to 1.170 J mg/kg (SB10). There are no regulatory standards for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e., VOCs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

1.0 INTRODUCTION

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2017-24 Corridor located in the Hollis Court section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 1.46-mile (7,705-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
Hillside Avenue from 70 feet southwest of 211th Street to 80 feet northeast of 213th Street	1,315
89th Avenue from Hollis Court Boulevard to 213th Street	850
89th Road from 211th to 212th Streets	700
Hollis Court Boulevard from Hillside to 90th Avenues	1,600
212th Street from 25 feet northwest of Hillside Avenue to 130 feet southeast of 89th Avenue	800
212th Place from Hillside to 90th Avenues	1,600
213th Street from Hillside Avenue to 50 feet southeast of Hillside Avenue	70
213th Street from 110 feet northwest of to 50 feet southeast of 89th Avenue	200
211th Street from Hillside Avenue to 55 feet southeast of Hillside Avenue	55
211th Street from 50 feet northwest of 89th Road to 90th Avenue	515

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of eight soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

1.1 Summary of Previous Environmental Investigations

No prior reports for the Corridor were made available to Louis Berger for review.

1.2 Scope of Work

The Phase II SCI consisted of a field investigation, laboratory analyses, and the preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution. Hand-clearing activities were performed by PAL Environmental Services (PAL). Soil boring oversight and soil sample collection were conducted by Mr. Christopher Calandrillo, Project Scientist of Louis Berger. Laboratory analyses were provided by Chemtech Consulting Group Inc. (Chemtech) of Mountainside, New Jersey, which is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11376). Field-derived Quality Assurance/Quality Control (QA/QC) samples (i.e., blind duplicates, equipment/rinsate blanks, and trip blanks) were not collected for this project.

The field investigation was conducted on August 10-12, 2022, and consisted of the following components:

- The advancement of eight soil borings (SB10 to SB17) utilizing hand tools and/or Vactron and air knife. Soil borings were proposed to terminal depths of 6 ftbg, which was achieved at all of the soil boring locations;

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to 6 ftbg or until refusal, whichever came first, using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the eight soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where recovery allowed, or the 6-inch interval above the encountered refusal or groundwater

table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the eight soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above, or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

2.0 CORRIDOR INFORMATION

2.1 Corridor Location, Description and Use

The approximately 1.46-mile (7,705-foot) long Corridor is located in the Hollis Court section of the Borough of Queens, New York. Currently, the Q2017-24 Corridor is developed with paved roadways, sidewalk areas, and existing infrastructure systems, and exhibits evidence of utilities, such as manholes, pavement scars, utility mark-outs, and valve covers. This indicates the presence of buried utilities, including gas, sewer, water, electric, and communications. Adjoining property usage is primarily residential and commercial, including the Regency Apartments complex.

The area of the Corridor is shown on Figure 2.

2.2 Description of Surrounding Properties

Surrounding property usage is primarily residential properties with some institutional properties to the north, east and west, and a mixture of commercial and residential properties to the south along Hillside Avenue. The Grand Central Parkway runs approximately 0.12 miles (650 feet) northwest of the Corridor. The Metropolitan Transportation Authority (MTA) Long Island Railroad (LIRR) Queens Village Branch runs approximately 0.48 miles (2,540 feet) south of the Corridor. The nearest surface water body is Potamogeton Pond, located approximately 0.29 miles (1,535 feet) northeast of the Corridor.

2.3 Corridor and Regional Topographic Setting

Louis Berger reviewed the United States Geologic Survey (USGS) *7.5-minute Topographic Quadrangle Map for Jamaica and Lynbrook, New York* (2020) to determine topography at the Corridor. The Corridor exhibits a topographic elevation change of approximately 38 feet above mean sea level (msl). The elevation of the Corridor ranges from approximately 113 feet above msl on the northern portion of the Corridor near the intersection of Hillside Avenue and 213th Street, to approximately 75 feet above msl at the southern portion of the Corridor near the intersection of 89th Road and 211th Street The overall topography of the surrounding area around the Corridor slopes from the north to the south. Under natural conditions, surface runoff would be expected to follow the overall topography of the area and ultimately flow to the south; however, storm runoff within the Corridor is managed by storm drains.

2.4 Corridor and Regional Geology

Based on the *NYC Detailed Soil Survey* via Web Soil Survey (National Cooperative Soil Survey, Version 8, September 3, 2018), the majority of the Corridor is underlain by the Urban land-Flatbush complex (UFA), with portions of the Corridor underlain by the Urban land-Greenbelt complex (UGA), and the Urban land till substratum (UtA). The UFA complex is comprised of 75 percent urban land, outwash substratum, 12 percent Flatbush and similar soils, and 13 percent minor components, with slopes of 0 to 3 percent. The UGA complex is comprised of 78 percent Urban land, till substratum, 12 percent Greenbelt and similar soils, and 10 percent minor components, with slopes of 0 to 3 percent. The UtA complex is comprised of 92 percent urban land till substratum and 8 percent minor components, with slopes of 0 to 3 percent. Hydric soils are not present in any of the units, and the units are not considered prime farmland.

The *NYC Reconnaissance Soil Survey* (2005) indicates that the Corridor is underlain by the Pavement & Buildings, Foresthills-Montauk complex, 0 to 8 percent slopes. This complex is classified as nearly level to gently sloping, highly urbanized areas with more than 80 percent of the surface covered by impervious pavement and buildings, generally located in urban centers.

The *Ground-Water Resources of Kings and Queens Counties, Long Island, New York* (1999) and the *Quaternary Geologic Map of the Hudson River 4° x 6° Quadrangle, United States and Canada* (1992) indicate the surficial soils are underlain by Upper Pleistocene deposits consisting of outwash sand, gravel and silt to a depth of approximately 50 ftbg. The Upper Pleistocene deposits are, in turn, underlain by approximately 200 feet of the Magothy Formation (50 to 250 ftbg), which consists of deltaic quartzose, very fine to coarse sand, and silty sand with lesser amounts of clay and silt. Below the Magothy Formation is 350 feet of the Raritan Formation, which is composed of two members. The first Raritan Formation Member is 150 feet of the Raritan Clay Member (250 – 400 ftbg), consisting of clay beds with inclusions of silty clay and clayey silts, and the second Raritan Formation Member is 200 feet of the Lloyd Sand (400 to 600 ftbg). The Lloyd Sand is the final unconsolidated unit before bedrock and consists of fine to coarse quartz sand. These deposits are, in turn, underlain by crystalline metamorphic bedrock, expected to be encountered at approximately 600 ftbg.

During the advancement of soil borings for this Phase II SCI, fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to dark yellowish orange, and grayish orange gravelly sand, sand, and silty sand to sandy silt were observed in all eight borings. Silty clay was also observed in SB12 and SB16.

2.5 Corridor and Regional Hydrogeology

According to the USGS *Long Island Depth to Water Viewer* (2010), groundwater depth is estimated to be between 37 and 78 ftbg along the Corridor, with the shallower groundwater depth at the southern portion of the Corridor near the intersection of 211th Street and 90th Avenue. Groundwater was not encountered during the Phase II SCI field activities. The nearest surface water body is Potamogeton Pond, located approximately 0.29 miles (1,535 feet) northeast of the Corridor. Based on the USGS *Groundwater Conditions on Long Island Map Viewer* (2013), groundwater in the vicinity of the Corridor is expected to flow to the southwest toward Jamaica Bay, located approximately 6.33 miles (33,400 feet) southwest of the Corridor. All references to groundwater flow direction/hydraulic gradient in this report are based upon this assumption. Groundwater flow can also be influenced by seasonal fluctuations in precipitation, local variations in geology, underground anthropogenic structures, and/or local dewatering operations.

According to the U.S. Fish and Wildlife Service (USFWS) *National Wetlands Inventory*, no wetlands are located along the Corridor; however, Cunningham Park to the northeast of the Corridor contains some very small wetlands, including Freshwater Forested/Shrub Wetland (PSS1A), and Freshwater Forested/Shrub Wetland (PFO1E). Freshwater Forested/Shrub Wetland (PSS1A) is classified as a Palustrine habitat and is located approximately 0.34 miles (1,795 feet) to the west. The Freshwater Forested/Shrub Wetlands are part of the Palustrine System, which encompasses three forms of wetlands. The first are non-tidal wetlands dominated by trees, shrubs, and persistent emergent, which normally remain standing at least until the beginning of the next growing season. Wetlands which occur in tidal areas where the salinity measures less than 0.5 parts per thousand (ppt) are also considered part of the Palustrine System. Lastly, wetlands characterized by the following are also part of the Palustrine System: less than 20 acres in size, no active wave-formed or bedrock shoreline features, have maximum depths less than 8.2 feet at low water, and salinity measuring less than 0.5 ppt. Freshwater Forested/Shrub Wetlands are temporarily flooded, with surface water present for brief periods during the growing season. When surface water is absent, the substrate typically remains well below the ground surface for most of the season. The Freshwater Forested/Shrub Wetland (PFOE1) is also classified as a Palustrine habitat, and is located approximately 0.34 miles (1,795 feet) to the northwest of the Corridor.

According to the Federal Emergency Management Agency (FEMA) *Flood Insurance Rate Map* (FIRM) *Panel 3604970232F* (FEMA, 2007), the Corridor is not located within the 100-year (1% chance of flood) or 500-year (0.2% chance of flood) flood zones.

3.0 CORRIDOR EVALUATION

Louis Berger provided oversight for the advancement of eight soil borings and collected soil samples during the field investigation conducted on August 10-12, 2022, in the vicinity of the planned construction. Drilling services for the advancement of the soil borings were provided by PAL. The soil samples from the borings were transferred into laboratory-supplied sample jars and properly labeled. The samples were stored with ice in a cooler to preserve the samples at approximately 4 degrees Celsius prior to and during shipment. A chain-of-custody was prepared prior to sample shipment. A summary of the field observations and details of the soil borings are provided in Table 1.

3.1 Soil Quality Investigation

To ensure the clearance of sensitive subsurface utilities and features, all soil boring locations were advanced via evasive methods (i.e., Vactron and/or air knife and hand auger/hand tools) to a terminal depth of 6 ftbg. Soil boring locations are depicted on Figure 2. The designations and sampling intervals for the samples that were submitted to the laboratory are included in Table 1. Maps depicting each boring location are included in Appendix A. Boring logs, which document soil classification information, including stratigraphy, are provided in Appendix B. The location of each boring is described below:

- **SB10** – Located in the grass right-of-way on the northwestern side of Hillside Avenue between 213th Street and 212th Place, 73 feet northwest of the southeastern curb line of Hillside Avenue, 299 feet southwest of the southwestern curb line of 214th Street.

- **SB11 –** Located in the grass right-of-way on the northwestern side of Hillside Avenue between Hollis Court Boulevard and 211th Street, 72 feet northwest of the southeastern curb line of Hillside Avenue, 101 feet and 8 inches southwest of the southwestern ramp leading to Interstate 295.

- **SB12 –** Located in the grass right-of-way on the northeastern side of 212th Street between Hillside and 89th Avenues, 35 feet northeast of the southwestern curb line of 212th Street, 195 feet and 4 inches northwest of the northwestern curb line of 89th Avenue.

- **SB13 –** Located in the grass right-of-way on the northwest side of 89th Avenue between 213th Street and 212th Place, 32 feet northwest of the southeastern curb line of 89th Avenue, 26 feet southwest of the southwestern curb line of 213th Street.

- **SB14 –** Located in the grass right-of-way on the southwestern side of Hollis Court Boulevard, between Hillside and 89th Avenues, 70 feet southwest of the northeastern curb line of Hollis Court Boulevard, 31 feet 11 inches northwest of the southeastern curb line of 89th Street.

- **SB15 –** Located in the grass right-of-way on the southeastern side of 89th Road between 212th Street and Hollis Court Boulevard, 39 feet southeast of the northwestern curb line of 89th Road, 71 feet 8 inches southwest of the southwestern curb line of 212th Street.

- **SB16 –** Located in the grass right-of-way on the southwestern side of 212th Place between 89th and 90th Avenues, 294 feet northwest of the northwestern curb line of 90th Avenue, 32 feet 4 inches southwest of the northeastern curb line of 212th Place.

- **SB17 –** Located in the grass right-of-way on the southwestern side of 211th Street between 89th Road and 90th Avenue, 34 feet and 8 inches northwest of the northwestern curb line of 90th Avenue, 85 feet southwest of the northwestern curb line of 211th Street.

Soil from each boring was examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e., odors) of contamination. In addition, a PID was used to screen the soil for VOC vapors at all eight boring locations.

In order to identify representative conditions relative to the presence of PAHs, TCLP metals, PCBs, total petroleum hydrocarbons, RCRA characteristics, and conditions relative to waste disposal in each boring, composite soil samples were collected at each boring location. Based on the DDC protocol regarding soil sample collection for waste classification analysis, composite soil samples were collected from ground surface to the encountered refusal. Composite soil samples were collected by mixing the soil from the column in a decontaminated stainless steel bowl.

In order to identify representative conditions relative to the presence of VOCs, grab samples were to be collected from either the 6-inch interval above the groundwater table (when encountered), the 6-inch interval above the bottom of the proposed excavation (where recovery allowed), or from the 6-inch interval showing the highest potential for contamination based on field observations.

All equipment was decontaminated by rinsing with deionized water, scrubbing with Alconox®, and then rinsed with deionized water a second time between each sample location to prevent any cross-contamination. Following the completion of each boring, the boreholes were backfilled with removed material.

3.2 Laboratory Analyses

All soil samples were analyzed on a 5-day turn-around time (TAT). Soil samples were submitted to Chemtech of Mountainside, New Jersey which is a NYSDOH ELAP-certified analytical laboratory (No. 11376). Field-derived QA/QC samples were not collected for this project. Laboratory analytical reports are included in Appendix C.

The grab soil samples SB10 through SB17 were analyzed for TCL VOCs using USEPA Method 8260C. The composite soil samples were analyzed for PAHs by USEPA Method 8270C, TPH-DRO/GRO by USEPA Method 8015B, PCBs by USEPA Method 8082A/608, TCLP Metals (RCRA 8) by USEPA Method 1311/6010D, RCRA Characteristics, including ignitability, reactivity and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, respectively, as well as Paint Filter Test by USEPA Method 9095B, for waste classification purposes. The USEPA methods described above, or an updated version of the method were used to analyze each sample.

3.3 Data Evaluation

In order to evaluate surface and subsurface soil quality for waste classification purposes, laboratory analytical results of grab and composite soil samples were compared with regulatory standards identified in: NYSDEC Subpart 375-6: Remedial Program Commercial Use (Track 2) Soil Cleanup Objectives (SCOs) and Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

4.0 FINDINGS

This section discusses the analytical data and findings for activities discussed in Section 3.0. Boring logs can be found in Appendix B. A complete laboratory analytical data report is included in Appendix C.

4.1 Field Screening

No visual or olfactory indications of contamination were observed in any of the eight borings, including PID readings. Anthropogenic fill material, including asphalt, was observed in soil boring SB10. A summary of the environmental boring data is presented in Table 1.

4.2 Laboratory Analytical Results

4.2.1 Target Compound List (TCL) Volatile Organic Compounds (VOCs) in Soils

One VOC, acetone, was detected above the laboratory's reporting limits in two of the eight soil samples (SB12 and SB13) collected as part of this Phase II SCI; however, all concentrations were below the applicable regulatory standards. A summary of the VOC detections in soil is provided as Table 2.

4.2.2 Polycyclic Aromatic Hydrocarbons (PAHs) in Soils

PAHs, including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene, were detected above the laboratory's reporting limits in two of the eight soil samples (SB11 and SB17); however, all concentrations were below the applicable regulatory standards. A summary of the PAH detections in soil is provided as Table 3.

4.2.3 Polychlorinated Biphenyls (PCBs) in Soils

No PCBs were detected above the laboratory's reporting limits in any of the eight soil samples collected as part of this Phase II SCI. A summary of the PCB detections in soil is provided as Table 4.

4.2.4 Waste Classification of Soil

TCLP Metals

Waste classification laboratory results indicated that TCLP barium was detected in all eight waste classification samples at concentrations ranging from 0.773 milligrams per liter (mg/L) (SB15) to 1.82 mg/L (SB10). TCLP chromium was detected in all eight waste classification samples with concentrations ranging from 0.0107 J mg/L (SB17) to 0.0959 mg/L (SB11). TCLP lead was detected in four of the eight waste classification samples with concentrations ranging from 0.0195 J mg/L (SB16) to 0.0319 J mg/L (SB13). All detected concentrations were below RCRA Hazardous Waste Levels. Results of the TCLP metals analysis indicate that soil samples collected from the Site do not exhibit evidence of the Hazardous Waste characteristics for Toxicity. A summary of the waste classification parameters is provided as Table 5.

RCRA Parameters (Reactivity, Corrosivity, Ignitability)

The analytical laboratory results of the eight waste classification soil samples show that the RCRA parameters (reactivity, ignitability, or corrosivity) were within the RCRA standards. The pH (corrosivity indicator) of the samples was found to be within the RCRA limits of 2 and 12.5. The flash point was greater than 140 degrees Fahrenheit in all soil samples; therefore, the RCRA characteristics for ignitability were negative. Reactive cyanide and reactive sulfide were not detected in any of the eight soil samples.

Therefore, results of these analyses indicate that the waste classification soil samples collected do not exhibit evidence of hazardous waste characteristics with respect to reactivity, corrosivity and ignitability. A summary of the waste classification parameters is provided as Table 5.

Total Petroleum Hydrocarbons (TPH)

TPH-DRO was detected above the laboratory's reporting limits in all eight waste classification soil samples at concentrations ranging from 0.548 J milligrams per kilogram (mg/kg) (SB13) to 85.5 mg/kg (SB11). TPH-GRO was detected above the laboratory's reporting limits in all eight waste classification soil samples with concentrations ranging from 0.011 J mg/kg (SB15) to 1.170 J mg/kg (SB10). No regulatory standards exist for TPH. A summary of the waste classification parameters is provided as Table 5.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings, conclusions, and recommendations are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the eight soil borings, including PID readings;

- Fill material consisting of dark yellowish brown, moderate brown, moderate yellowish brown to dark yellowish orange, and grayish orange gravelly sand, sand, and silty sand to sandy silt were observed in all eight borings. Silty clay was also observed in SB12 and SB16. No anthropogenic fill (e.g., brick or ash) was observed in any of the borings;

- Bedrock was not encountered in any of the eight boring locations;

- Groundwater was not encountered in any of the eight boring locations;

- One VOC was detected above the laboratory's reporting limits in two of the eight soil samples collected as part of this Phase II SCI; however, all concentrations were below the applicable regulatory standards;

- Several PAHs were detected above the laboratory's reporting limits in two of the eight soil samples; however, all concentrations were below the applicable regulatory standards;

- No PCBs were detected above the laboratory's reporting limits in any of the eight soil samples collected as part of this Phase II SCI;

- Waste classification laboratory results indicate that TCLP barium and TCLP chromium were detected in all eight soil samples, while TCLP lead was detected in four of the eight soil samples; however, all concentrations were below the applicable RCRA Hazardous Waste Levels;

- TPH-DRO was detected above the laboratory's reporting limits in all eight waste classification soil samples at concentrations ranging from 0.548 J mg/kg (SB13) to 85.5 mg/kg (SB11), and TPH-GRO was detected above the laboratory's reporting limits in all eight waste classification soil samples with concentrations ranging from 0.011 J mg/kg (SB15) to 1.170 J mg/kg (SB10). There are no regulatory standards for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material; and,

- The analytical laboratory results of the eight waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards. Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e., VOCs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State

Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

6.0 STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

Report Prepared By:

Chris Calandrillo
Project Scientist

Fameeda Ali, CHMM, ENV SP
Project Manager

STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

Louis Berger derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, Louis Berger has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, Louis Berger has not attempted to verify the accuracy or completeness of any such information.

The data reported, and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by Louis Berger in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the Agreement and the provisions thereof.

TABLES

Table 1. Summary of Environmental Boring Data
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2017-24 Corridor
Hillside Avenue from 211th to 213th Streets, etc., Queens, New York

Boring No.	Sample ID	High PID (ppm)	Sample Interval (ftbg)	Total VOCs (mg/kg)	Total PAHs (mg/kg)	TCLP Metals Exceed (Yes/No)[1]	Depth to Water (ftbg)	Total Depth (ftbg)	Other Comments
SB10	SB10	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB11	SB11	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	2.82 J				
SB12	SB12	<1	5.5 - 6.0	0.068	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB13	SB13	<1	5.5 - 6.0	0.0153 J	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB14	SB14	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB15	SB15	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB16	SB16	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB17	SB17	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	0.78 J				

Notes:

[1] - TCLP metal(s) exceeds Resource Conservation and Recovery Act (RCRA) Hazardous Waste

All soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Toxicity Characteristic Leaching Procedure (TCLP) for Metals (RCRA 8), Total Petroleum Hydrocarbons, and RCRA Characteristics.

N/A = Not applicable

PID = Photoionization detector

ND = Not Detected

NE = Not Encountered

ftbg = feet below grade

J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

Table 2. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2017-24 Corridor
Hillside Avenue from 211th to 213th Streets, etc., Queens, New York

TCL VOCs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth							
		SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17
		8/12/2002	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/10/2022	8/10/2022	8/10/2022
		5.5 - 6.0	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0
Acetone	500	ND	ND	0.068	0.0153 J	ND	ND	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

DDC Project Number: QED1059 Work Order Letter No. OEHS-20201409799-WOL-238

Table 3. Summary of Polycyclic Aromatic Hydrocarbons (PAHs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2017-24 Corridor
Hillside Avenue from 211th to 213th Streets, etc., Queens, New York

PAHs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth							
		SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17
		8/12/2002	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/10/2022	8/10/2022	8/10/2022
		0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0
Benzo[a]anthracene	5.6	ND	0.23	ND	ND	ND	ND	ND	0.0941 J
Benzo[a]pyrene	1	ND	0.34	ND	ND	ND	ND	ND	0.110 J
Benzo[b]fluoranthene	5.6	ND	0.43	ND	ND	ND	ND	ND	0.150 J
Benzo[g,h,i]perylene	500	ND	0.23	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	56	ND	0.12 J	ND	ND	ND	ND	ND	ND
Chrysene	56	ND	0.26	ND	ND	ND	ND	ND	0.0986 J
Fluoranthene	500	ND	0.47	ND	ND	ND	ND	ND	0.19
Indeno[1,2,3-cd]pyrene	5.6	ND	0.18	ND	ND	ND	ND	ND	ND
Phenanthrene	500	ND	0.18	ND	ND	ND	ND	ND	ND
Pyrene	500	ND	0.38	ND	ND	ND	ND	ND	0.140 J

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

DDC Project Number: QED1059 Work Order Letter No. OEHS-20201409799-WOL-238

Table 4. Summary of Polychlorinated Biphenyls (PCBs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2017-24 Corridor
Hillside Avenue from 211th to 213th Streets, etc., Queens, New York

PCBs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth							
		SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17
		8/12/2002	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/10/2022	8/10/2022	8/10/2022
		0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0
Aroclor (Total)*	1	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
* Refers to the total concentration of PCBs in the sample
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)

DDC Project Number: QED1059 Work Order Letter No. OEHS-20201409799-WOL-238

Table 5. Summary of Waste Classification Results in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2017-24 Corridor
Hillside Avenue from 211th to 213th Streets, etc., Queens, New York

Analyte	Resource Conservation and Recovery Act (RCRA) Hazardous Waste Levels	Sample ID, Date Collected, and Depth							
		SB10	SB11	SB12	SB13	SB14	SB15	SB16	SB17
		8/12/2002	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/10/2022	8/10/2022	8/10/2022
		0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0	0 - 6.0
RCRA (Including TCLP Metals)									
pH	2 - 12.5*	7.51	8.34	8.02	7.48	7.34	7.9	7.84	7.23
Ignitability	>140 °F**	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Paint Filter Test	NS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Reactive Cyanide	NS	ND	ND	ND	ND	ND	ND	ND	ND
Reactive Sulfide	NS	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5	ND	ND	ND	ND	ND	ND	ND	ND
Barium	100	1.82	1.14	1.19	1.21	1.18	0.773	1.54	1.28
Cadmium	1	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	5	0.0134 J	0.0959	0.0238 J	0.0112 J	0.0116 J	0.0143 J	0.011 J	0.0107 J
Lead	5	ND	0.0231 J	ND	0.0319 J	ND	ND	0.0195 J	0.0214 J
Mercury	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND	ND	ND	ND
TPH DRO/GRO (mg/kg)									
TPH-DRO	NS	1.19 J	85.5	0.896 J	0.548 J	0.919 J	5.65	0.726 J	1.64 J
TPH-GRO	NS	1.170 J	0.013 J	0.853 J	0.771 J	0.698 J	0.011 J	0.715 J	0.828 J

Notes:
All concentrations are in parts per million, milligrams per kilogram, or milligrams per liter (ppm, mg/kg, or mg/L), unless otherwise noted
TCLP = Toxicity Characteristic Leaching Procedure
NS = No Standard
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
*A solid waste exhibits the characteristic of corrosivity if it has a pH less than or equal to 2 or greater than or equal to 12.5
**A solid waste exhibits the characteristic of ignitability if it has flash point less than 140 °F
°F = Degrees Fahrenheit
NEG = Negative (flash point was not detected below 140 °F) or Negative (Paint was not detected from Paint Filter Test)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

FIGURE 1 – TOPOGRAPHIC CORRIDOR LOCATION MAP

CORRIDOR LOCATION

HILLSIDE AVENUE
89TH AVENUE
90TH AVENUE
213TH STREET
212TH STREET
212TH PLACE
89TH ROAD
211TH STREET
HOLLIS COURT BOULEVARD
INTERSTATE 295
GRAND CENTRAL PKWY
CLEARVIEW EXPY
JAMAICA AVE
HEMPSTEAD AVE

Legend

Approximate Corridor Area

Source: USGS Quadrangles Jamaica and Lynbrook, New York (2020)

HAZ - 525

Department of Design and Construction

Louis Berger

DDC PROJECT NO.: QED1059 WOL NO.:OEHS-20201409799-WOL-238

TOPOGRAPHIC CORRIDOR LOCATION MAP

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 1,000' DATE: May 16, 2022 SHEET: 1

FIGURE 2 – SOIL BORING LOCATION PLAN

Department of Design and Construction

Louis Berger

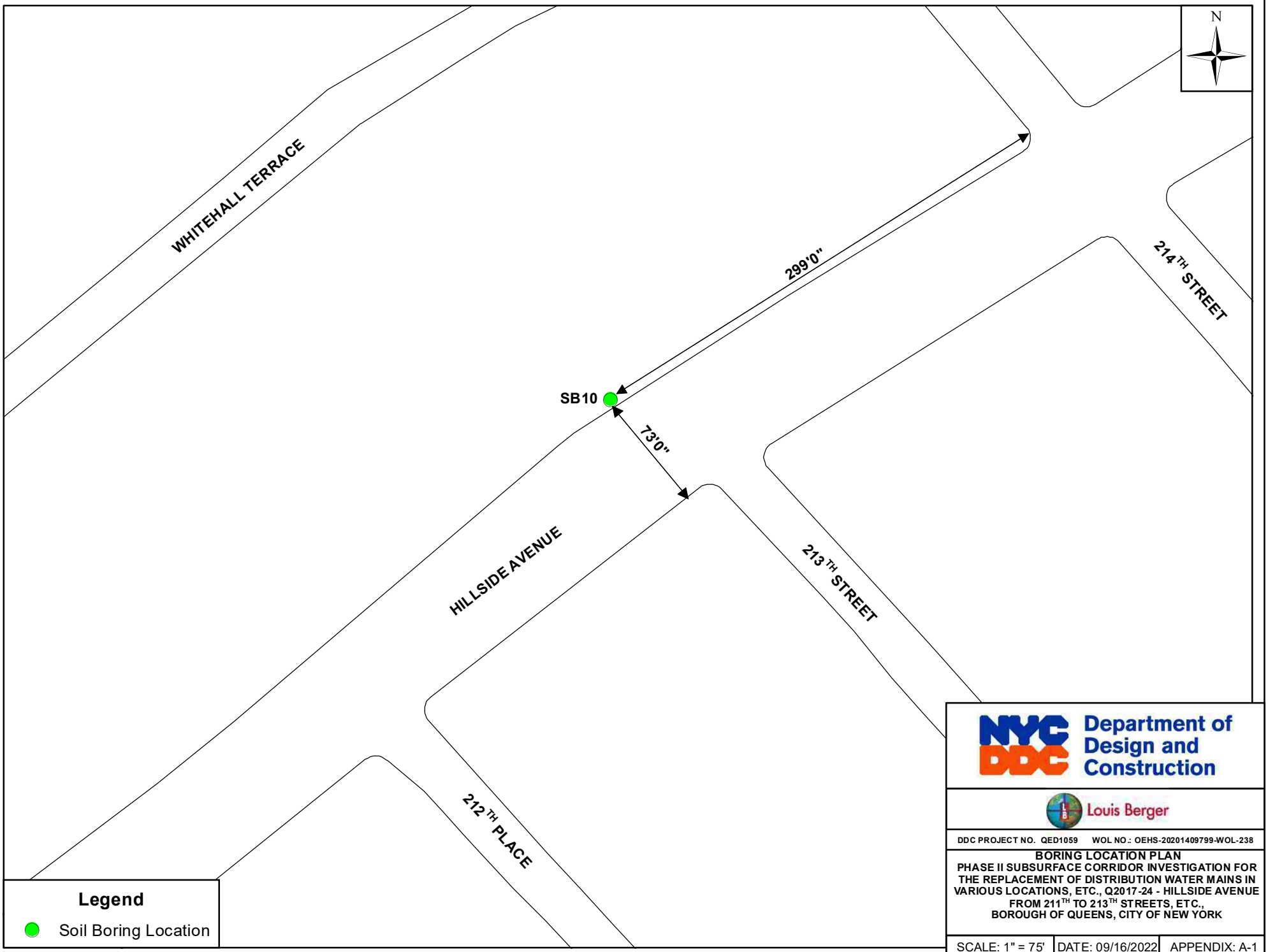
DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

SOIL BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 200'	DATE: 09/16/22	FIGURE: 2

APPENDIX A
BORING LOCATION PLAN



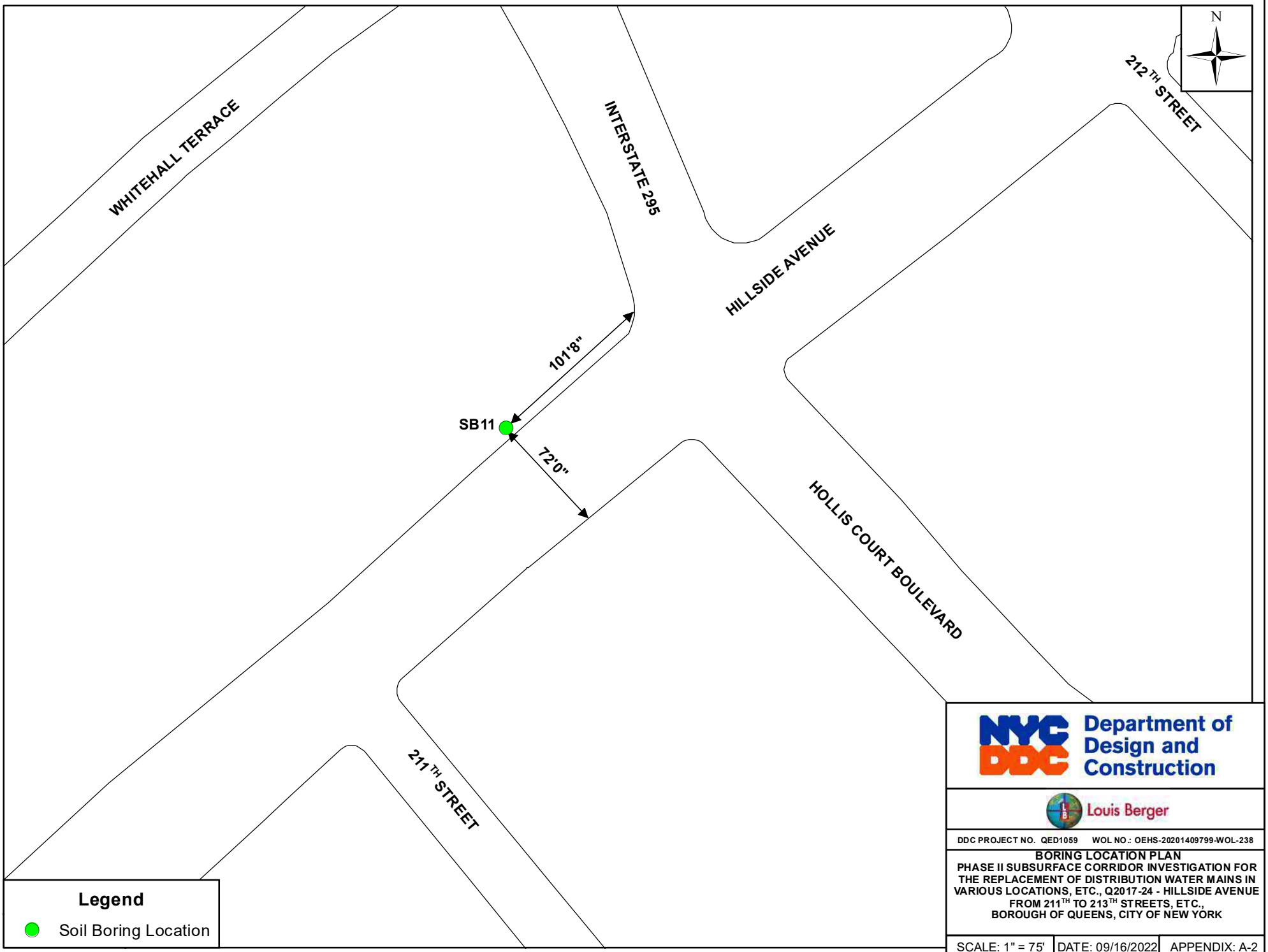
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-1



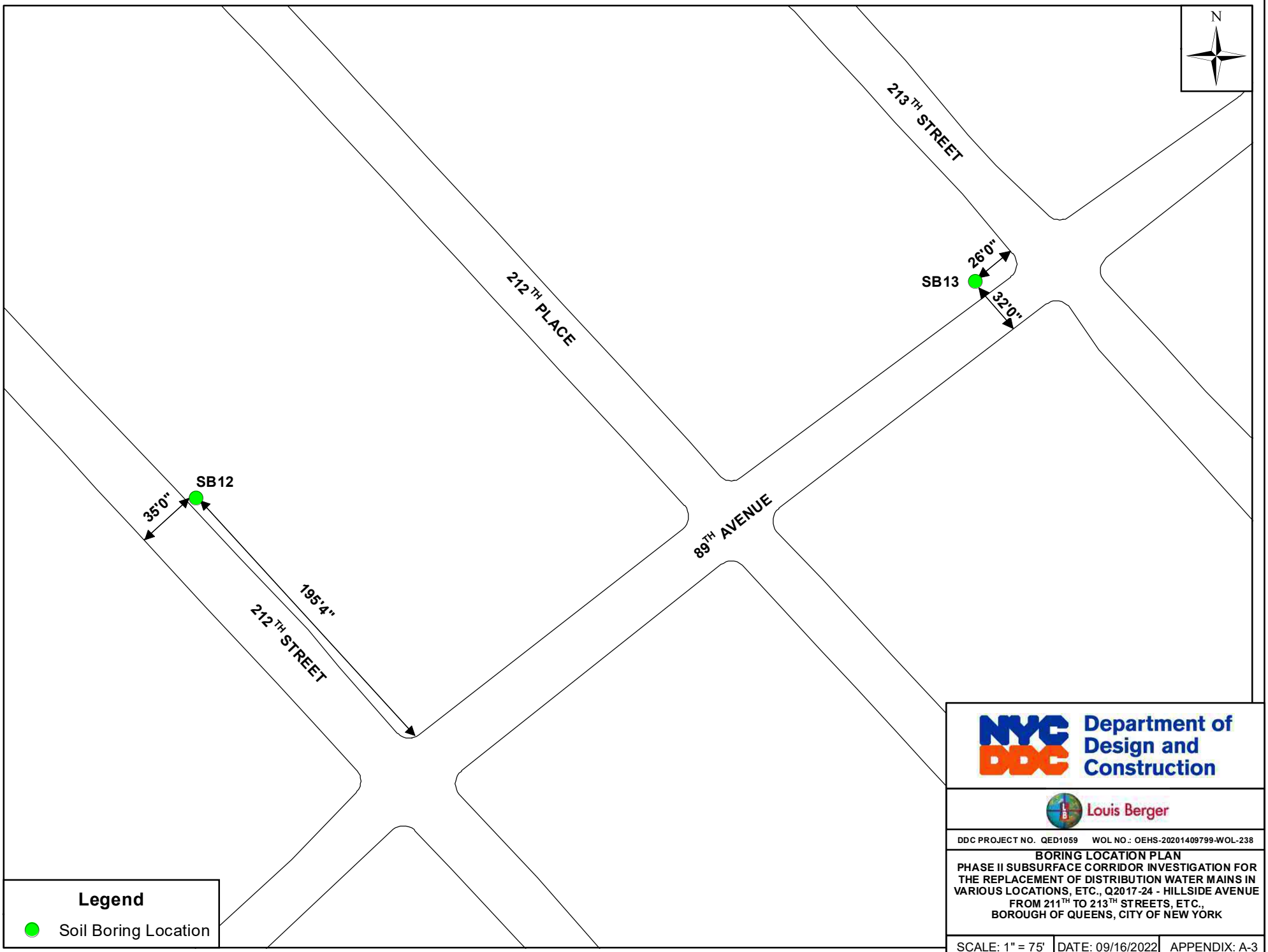
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-2



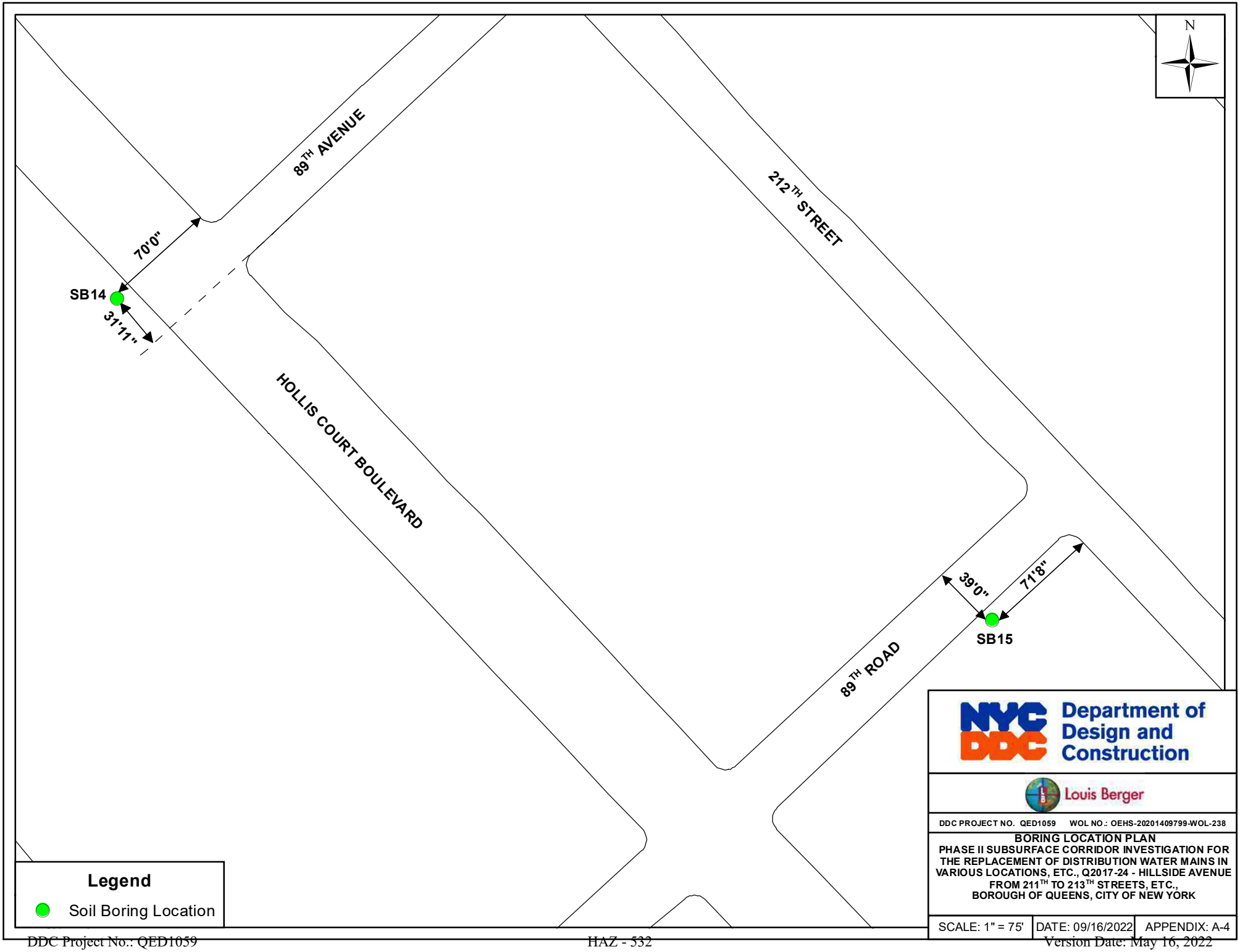
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-3



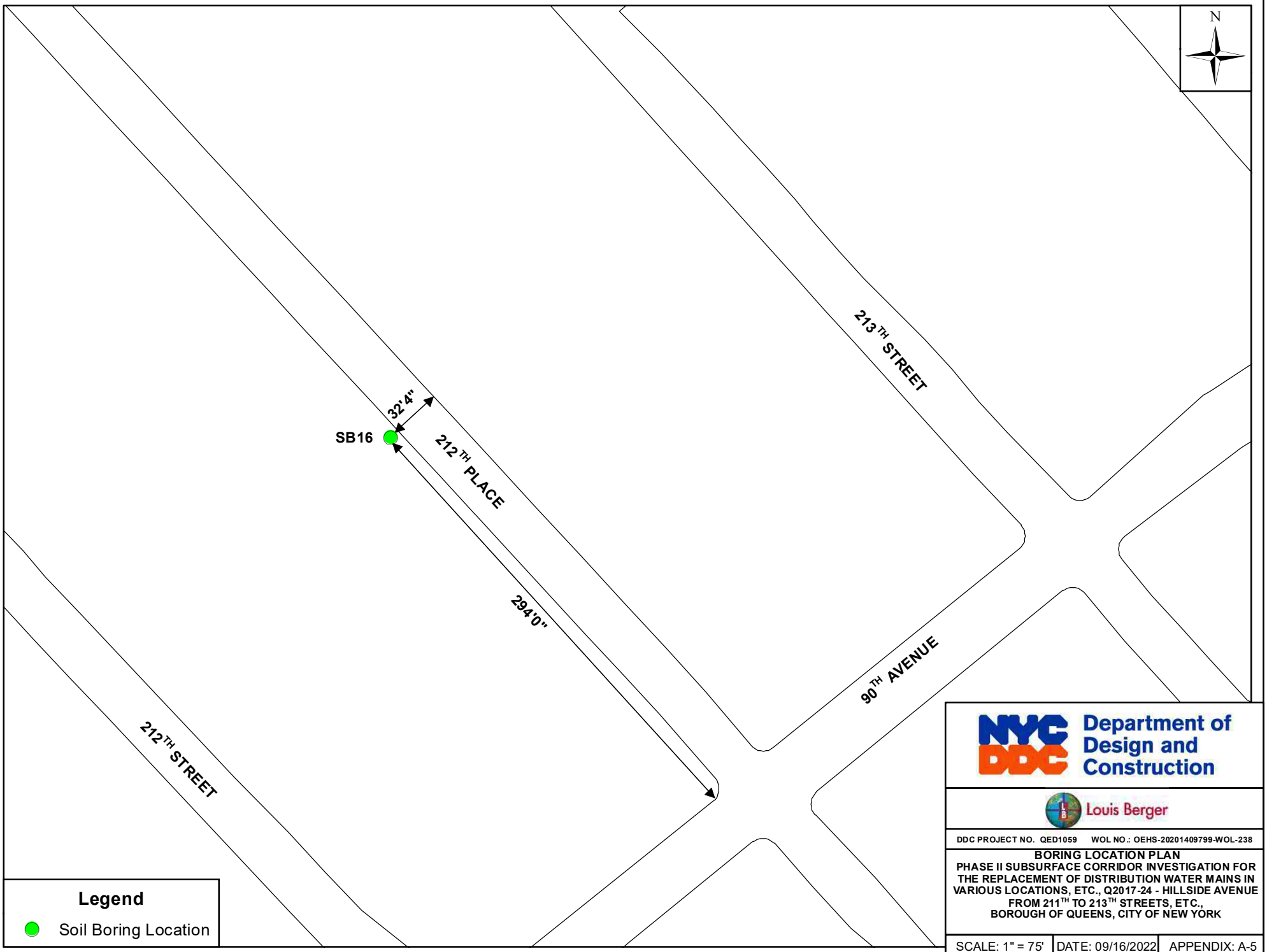
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-4



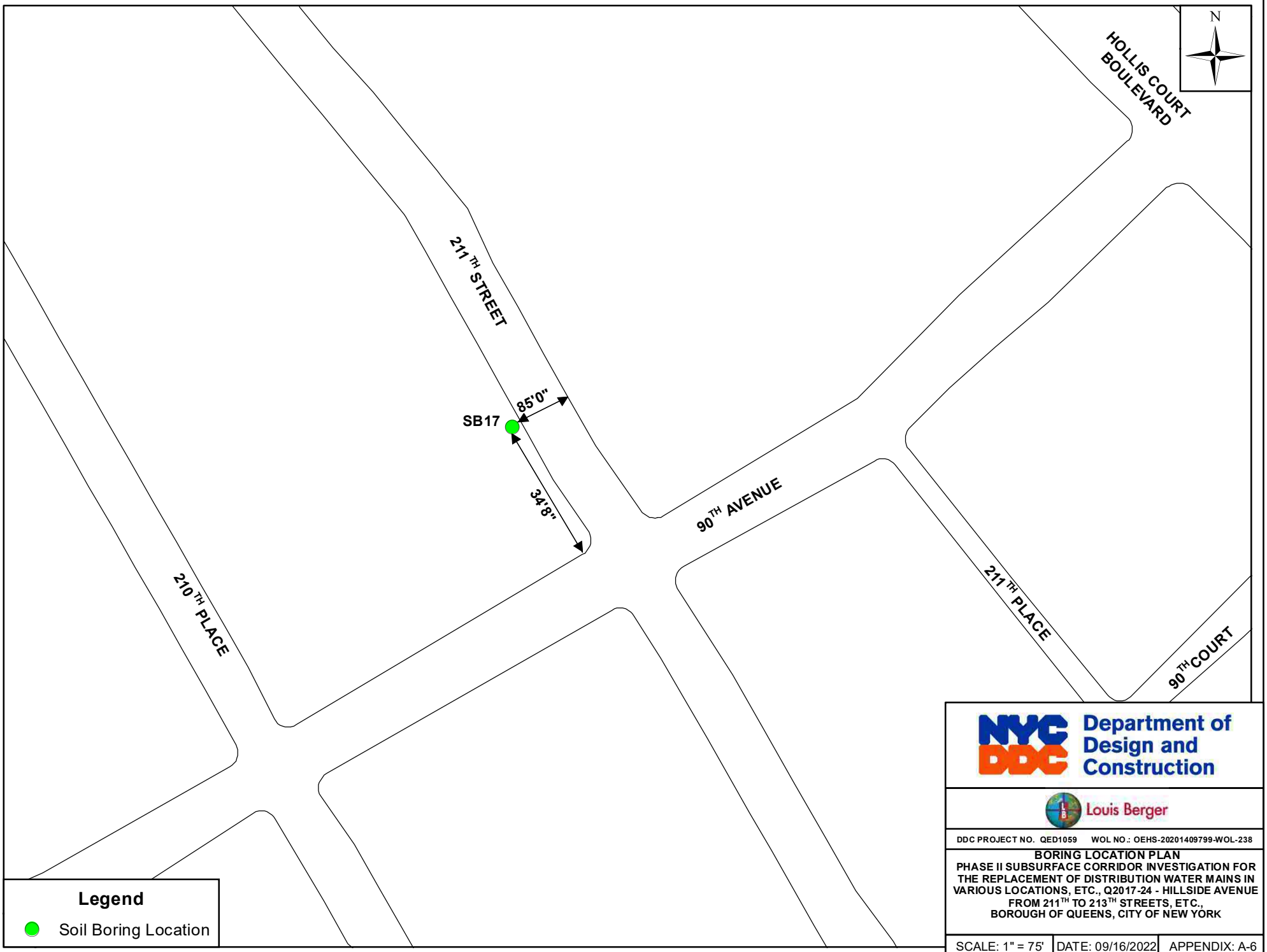
Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-5



Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2017-24 - HILLSIDE AVENUE FROM 211TH TO 213TH STREETS, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-6

APPENDIX B
GEOLOGIC BORING LOGS

Drilling Log

Page 1 of 1

BORING NO.: SB10

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/12/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/12/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 6	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING (ft):** 203736.599852
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1052767.110630
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 4/4), SILT, some coarse to fine Gravel, With Cobbles, dry.	**Gravelly Silt (Fill)**
	1		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, some coarse to fine Gravel, trace Asphalt, dry.	**Gravelly Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, trace coarse to fine Gravel, dry.	**Sand (Fill)**
	3		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, With Cobbles, dry.	
	4		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, moist.	
	5		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, trace coarse to fine Gravel, moist.	**Collected grab sample SB10 from 5.5 to 6 ftbg and composite sample SB10 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB11

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Vactron and Air Knife	**DATE STARTED:**	8/11/2022
BOREHOLE DATA		**DATE FINISHED:**	8/11/2022
Diameter (in):	6	**DRIILER:**	E. Umanzor
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	203157.613847
Depth to Water (ft.):	N/A	**EASTING (ft):**	1052051.934130
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
			FILL			<1	Dark yellowish brown (10YR 4/2), SILT, and coarse to fine Gravel, dry.	**Gravelly Silt (Fill)**
	1		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, trace coarse to fine Gravel, With Cobbles, dry.	**Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, and coarse to fine Gravel, dry.	**Gravelly Sand (Fill)**
	3		FILL			<1	Moderate brown (5YR 3/4), fine SAND, and Silt, some coarse to fine Gravel, dry.	**Gravelly Silty Sand (Fill)**
	4		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, and Silt, trace coarse to fine Gravel, dry.	**Silty Sand (Fill)**
	5		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, and Silt, With Cobbles, dry.	**Collected grab sample SB11 from 5.5 to 6 ftbg and composite sample SB11 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB12

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/11/2022
BOREHOLE DATA		**DATE FINISHED:**	8/11/2022
Diameter (in):	6	**DRIILER:**	E. Umanzor
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	203139.968996
Depth to Water (ft.):	N/A	**EASTING (ft):**	1052687.260250
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Dark yellowish brown (10YR 4/2), SILT, some coarse to fine Gravel, dry.	**Gravelly Silt (Fill)**
	1		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, some coarse to fine Gravel, dry.	**Gravelly Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, and Silty Clay, moist.	**Silty Clayey Sand (Fill)**
	3		FILL			<1	Moderate yellowish brown (10YR 5/4), fine SAND, trace coarse to fine Gravel, moist.	**Sand (Fill)**
	4		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, trace coarse to fine Gravel, moist.	**Sandy Silty Clay (Fill). Collected grab sample SB12 from 5.5 to 6 ftbg and composite sample SB12 from 0 to 6 ftbg.**
	5		FILL			<1	Grayish orange (10YR 7/4), Silty CLAY, and fine Sand, moist.	
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB13

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/11/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/11/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Umanzor
Total Depth (ft.): 6	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING (ft):** 203272.962574
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1053164.721820
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Dark yellowish brown (10YR 4/2), SILT, some coarse to fine Gravel, dry.	**Gravelly Silt (Fill)**
	1		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, With Cobbles, dry.	**Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, trace coarse to fine Gravel, moist.	
	3							
	4		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, trace coarse to fine Gravel, With Cobbles, moist.	
	5		FILL			<1	Moderate yellowish brown (10YR 5/4), medium to fine SAND, moist.	**Collected grab sample SB13 from 5.5 to 6 ftbg and composite sample SB13 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB14

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/11/2022
BOREHOLE DATA		**DATE FINISHED:**	8/11/2022
Diameter (in):	6	**DRIILER:**	E. Umanzor
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	202739.365058
Depth to Water (ft.):	N/A	**EASTING (ft):**	1052542.334410
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Dark yellowish brown (10YR 4/2), SILT, some coarse to fine Gravel, dry.	**Gravelly Silt (Fill)**
	1		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, dry.	**Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, trace coarse to fine Gravel, dry.	
	3							
	4		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, dry.	
	5		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, trace coarse to fine Gravel, dry.	**Collected grab sample SB14 from 5.5 to 6 ftbg and composite sample SB14 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB15

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/10/2022
BOREHOLE DATA		**DATE FINISHED:**	8/10/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	202535.844704
Depth to Water (ft.):	N/A	**EASTING (ft):**	1053095.961930
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate yellowish brown (10YR 5/4), SILT, dry.	**Silt (Fill)**
	1		FILL			<1	Dark yellowish orange (10YR 6/6), fine SAND, trace coarse to fine Gravel, dry.	**Sand (Fill)**
	2		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, trace coarse to fine Gravel, dry.	
	3		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, dry.	**Collected grab sample SB15 from 5.5 to 6 ftbg and composite sample SB15 from 0 to 6 ftbg.**
	4							
	5							
	6						Total Depth of Boring 6 feet.	

Drilling Log

Page 1 of 1

BORING NO.: SB16

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/10/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/10/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 6	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A	**Screen Length (ft):** N/A		**NORTHING (ft):** 202640.809345
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1053435.913920
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Grayish brown (5YR 3/2), SILT, some coarse to fine Gravel, moist.	**Gravelly Silt (Fill)**
	1		FILL			<1	Grayish brown (5YR 3/2), coarse to fine SAND, trace Silty Clay, trace coarse to fine Gravel, moist.	**Silty Clayey Sand (Fill)**
	2		FILL			<1	Moderate brown (5YR 3/4), coarse to fine SAND, some Silt, moist.	**Silty Sand (Fill)**
	3		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, trace coarse Gravel, moist.	**Sand (Fill)**
	4		FILL			<1	Dark yellowish orange (10YR 6/6), fine SAND, trace coarse Gravel, moist.	
	5		FILL			<1	Dark yellowish orange (10YR 6/6), fine SAND, moist.	**Collected grab sample SB16 from 5.5 to 6 ftbg and composite sample SB16 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Louis Berger

Drilling Log

Page 1 of 1

BORING NO.: SB17

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2017-24 Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/10/2022
BOREHOLE DATA		**DATE FINISHED:**	8/10/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	201867.029473
Depth to Water (ft.):	N/A	**EASTING (ft):**	1052824.608790
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 4/4), SILT, trace coarse to fine Sand, dry.	**Sandy Silt (Fill)**
	1		FILL			<1	Grayish brown (5YR 3/2), coarse to fine SAND, some Silt, some coarse to fine Gravel, dry.	**Gravelly Silty Sand (Fill)**
	2		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, some coarse to fine Gravel, With Cobbles, dry.	**Gravelly Sand (Fill)**
	3		FILL			<1	Moderate yellowish brown (10YR 5/4), coarse to fine SAND, and coarse to fine Gravel, With Cobbles, dry.	
	4		FILL			<1	Dark yellowish orange (10YR 6/6), coarse to medium SAND, some coarse to fine Gravel, dry.	
	5		FILL			<1	Dark yellowish orange (10YR 6/6), coarse to medium SAND, some coarse to fine Gravel, dry.	**Collected grab sample SB17 from 5.5 to 6 ftbg and composite sample SB17 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

APPENDIX C
LABORATORY ANALYTICAL RESULTS

CHEMTECH

ANALYTICAL RESULTS SUMMARY

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4189

ATTENTION : Jonathan Ganz

NELAP ACCREDITED TNI LABORATORY

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration		C	MDL	RDL	Units
Client ID:	**SB18**									
N4189-01	SB18	SOIL	unknown10.947	*	6.10		J	0	0	ug/Kg
			Total Tics :			6.10				
			Total Concentration:			6.10				
Client ID:	**SB19**									
N4189-03	SB19	SOIL	Acetone		14.4		J	13.2	27.1	ug/Kg
			Total Voc :			14.4				
			Total Concentration:			14.4				
Client ID:	**SB13**									
N4189-13	SB13	SOIL	Acetone		15.3		J	12.8	26.1	ug/Kg
			Total Voc :			15.3				
			Total Concentration:			15.3				
Client ID:	**SB12RE**									
N4189-15RE	SB12RE	SOIL	Acetone		68.0			13.5	27.7	ug/Kg
			Total Voc :			68.0				
			Total Concentration:			68.0				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-01	SB18	SOIL	Phenanthrene	340.000		91.5	190	ug/Kg
N4189-01	SB18	SOIL	Fluoranthene	360.000		87.3	190	ug/Kg
N4189-01	SB18	SOIL	Pyrene	420.000		81.2	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)anthracene	160.000	J	95	190	ug/Kg
N4189-01	SB18	SOIL	Chrysene	160.000	J	93.6	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(b)fluoranthene	180.000	J	75.5	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)pyrene	170.000	J	74.1	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(g,h,i)perylene	130.000	J	110	190	ug/Kg
			Total Svoc :	**1,920.00**				
			Total Concentration:	**1,920.00**				
Client ID : SB20								
N4189-05	SB20	SOIL	Phenanthrene	180.000	J	94	190	ug/Kg
N4189-05	SB20	SOIL	Fluoranthene	260.000		89.7	190	ug/Kg
N4189-05	SB20	SOIL	Pyrene	220.000		83.4	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)anthracene	150.000	J	97.6	190	ug/Kg
N4189-05	SB20	SOIL	Chrysene	150.000	J	96.1	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(b)fluoranthene	190.000		77.6	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)pyrene	150.000	J	76.1	190	ug/Kg
			Total Svoc :	**1,300.00**				
			Total Concentration:	**1,300.00**				
Client ID : SB17								
N4189-11	SB17	SOIL	Fluoranthene	190.000		82.6	180	ug/Kg
N4189-11	SB17	SOIL	Pyrene	140.000	J	76.8	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)anthracene	94.100	J	89.8	180	ug/Kg
N4189-11	SB17	SOIL	Chrysene	98.600	J	88.5	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(b)fluoranthene	150.000	J	71.4	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)pyrene	110.000	J	70.1	180	ug/Kg
			Total Svoc :	**782.70**				
			Total Concentration:	**782.70**				
Client ID : SB11								
N4189-19	SB11	SOIL	Phenanthrene	180.000		87	180	ug/Kg
N4189-19	SB11	SOIL	Fluoranthene	470.000		83	180	ug/Kg
N4189-19	SB11	SOIL	Pyrene	380.000		77.2	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)anthracene	230.000		90.3	180	ug/Kg
N4189-19	SB11	SOIL	Chrysene	260.000		89	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(b)fluoranthene	430.000		71.8	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(k)fluoranthene	120.000	J	76.6	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)pyrene	340.000		70.5	180	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4189-19	SB11	SOIL	Indeno(1,2,3-cd)pyrene	180.000		110	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(g,h,i)perylene	230.000		100	180	ug/Kg
			Total Svoc :	**2,820.00**				
			Total Concentration:	**2,820.00**				

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID :								
			Total Concentration:	**0.000**				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-02	SB18	TCLP	Barium	1,160.000		77.9	500	ug/L
N4189-02	SB18	TCLP	Chromium	129.000		10.4	50.0	ug/L
Client ID : SB19								
N4189-04	SB19	TCLP	Barium	1,550.000		77.9	500	ug/L
Client ID : SB20								
N4189-06	SB20	TCLP	Barium	1,430.000		77.9	500	ug/L
N4189-06	SB20	TCLP	Chromium	14.000	J	10.4	50.0	ug/L
N4189-06	SB20	TCLP	Lead	34.200	J	19.4	60.0	ug/L
Client ID : SB15								
N4189-08	SB15	TCLP	Barium	773.000		77.9	500	ug/L
N4189-08	SB15	TCLP	Chromium	14.300	J	10.4	50.0	ug/L
Client ID : SB16								
N4189-10	SB16	TCLP	Barium	1,540.000		77.9	500	ug/L
N4189-10	SB16	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4189-10	SB16	TCLP	Lead	19.500	J	19.4	60.0	ug/L
Client ID : SB17								
N4189-12	SB17	TCLP	Barium	1,280.000		77.9	500	ug/L
N4189-12	SB17	TCLP	Chromium	10.700	J	10.4	50.0	ug/L
N4189-12	SB17	TCLP	Lead	21.400	J	19.4	60.0	ug/L
Client ID : SB13								
N4189-14	SB13	TCLP	Barium	1,210.000		77.9	500	ug/L
N4189-14	SB13	TCLP	Chromium	11.200	J	10.4	50.0	ug/L
N4189-14	SB13	TCLP	Lead	31.900	J	19.4	60.0	ug/L
Client ID : SB12								
N4189-16	SB12	TCLP	Barium	1,190.000		77.9	500	ug/L
N4189-16	SB12	TCLP	Chromium	23.800	J	10.4	50.0	ug/L
Client ID : SB14								
N4189-18	SB14	TCLP	Barium	1,180.000		77.9	500	ug/L
N4189-18	SB14	TCLP	Chromium	11.600	J	10.4	50.0	ug/L
Client ID : SB11								
N4189-20	SB11	TCLP	Barium	1,140.000		77.9	500	ug/L
N4189-20	SB11	TCLP	Chromium	95.900		10.4	50.0	ug/L
N4189-20	SB11	TCLP	Lead	23.100	J	19.4	60.0	ug/L

CHEMTECH

DATA PACKAGE

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4189

ATTENTION : Jonathan Ganz

Table Of Contents for N4189

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : N4189

Project ID : QED1059 Phase II SCI

Client : Louis Berger U.S., Inc., A WSP Company

Lab Sample Number	Client Sample Number
N4189-01	SB18
N4189-02	SB18
N4189-03	SB19
N4189-04	SB19
N4189-05	SB20
N4189-06	SB20
N4189-07	SB15
N4189-08	SB15
N4189-09	SB16
N4189-10	SB16
N4189-11	SB17
N4189-12	SB17
N4189-13	SB13
N4189-14	SB13
N4189-15	SB12
N4189-16	SB12
N4189-17	SB14
N4189-18	SB14
N4189-19	SB11
N4189-20	SB11

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis performed on instrument MSVOA_Y were done using GC column Rxi-624Sil MS, which is 30 meters, 0.25 mm id, 1.4 um df, Restek Cat. #13868. The Trap was supplied by Supelco, VOCARB 3000, ATOMAX XYZ Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
samples # SB16 [1,2-Dichloroethane-d4 - 205%, Toluene-d8 - 71%] and
SB17 [1,2-Dichloroethane-d4 - 248%, Dibromofluoromethane - 150%] VIAL A analyzed but didnot purge as a corrective action VIAL B analyzed but surrogate failing therefore lab reported VIAL B as final analysis while sample # SB12 [Dibromofluoromethane - 52%], SB12RE [1,2-Dichloroethane-d4 - 236%, Toluene-d8 - 76%] ,SB14RE [1,2-Dichloroethane-d4 - 184%, Toluene-d8 - 73%] All the failure samples were reanalyzed to confirm the results as per method and reported in the data.

The Internal Standards Areas met the acceptable requirements except for samples # SB12, SB12RE, SB14 and SB14RE All the failure samples were reanalyzed to confirm the results as per method and reported in the data. while sample # SB20 VIAL A analyzed but Internal Standard fail as a corrective action VIAL B analyzed but didnot purge therefore lab reported VIAL A as final analysis while samples # SB16, SB17 VIAL

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922
A analyzed but didnot purge as a corrective action VIAL B analyzed but internal are failing therefore lab reported VIAL B as final analysis

The Retention Times were acceptable for all samples.

The RPD for {VD0815SBSD01} with File ID: VD074097.D met criteria except for Trichlorofluoromethane[51%] due to difference in results of BS and BSD.

The Blank Spike for {VD0815SBS01} with File ID: VD074096.D met requirements for all samples except for Dichlorodifluoromethane[141%] but no positive hit in associated sample therefore no corrective action taken.

The Blank Spike Duplicate for {VD0815SBSD01} with File ID: VD074097.D met requirements for all samples except for Dichlorodifluoromethane[138%], Trichlorofluoromethane[167%] but no positive hits in associated samples therefore no corrective action taken.

The Blank Spike for {VD0816SBS01} with File ID: VD074104.D met requirements for all samples except for Chloromethane[134%] but no positive hit in associated sample therefore no corrective action taken.

The Blank analysis did not indicate the presence of lab contamination.

The %RSD is greater than 20% in the Initial Calibration method (82Y081522S.M) for Dichlorodifluoromethane, Chloromethane, Chloroethane, Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, 1,1-Dichloroethene, Acetone, Carbon Disulfide, Methyl Acetate, Methylene Chloride, Cyclohexane, 1,2-Dichloroethane-d4 these compounds are passing on Linear Regression.

The %RSD is greater than 15% in the Initial Calibration method (82Y081222S.M) for Bromomethane, Methyl Acetate, Methylene Chloride, these compounds are passing on Linear Regression.

The Continuous Calibration File ID VD074102.D met the requirements except for Trichlorofluoromethane but no positive hit in associated samples therefore no corrective action taken.

The Tuning criteria met requirements.

E. Additional Comments:
sample # SB12 & SB12RE not match for acetone due to in-house contamination.

Samples for MS/MSD for VOC analysis were not provided with this set of samples. The Blank Spike Duplicate is reported with the data.

Trip Blank was not provided with this set of samples.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Gasoline Range Organics

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Gasoline Range Organics.

C. Analytical Techniques:
The analysis performed on instrument FID_B were done using GC column RTX502.2 which is 60 meters, 0.53mm ID, 3.0 um df, cat#10909.The analysis of Gasoline Range Organics was based on method 8015D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.
The Blank Spike met requirements for all samples.

The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.
Samples SB18, SB20, SB16, SB17, SB13, SB12 and SB14 were diluted due to bad matrices.

E. Additional Comments:
Samples SB18, SB20, SB16, SB17, SB13, SB12 and SB14 were directly run in methanol as both low level soil vials did not purged.
The soil samples results are based on a dry weight basis.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: SVOC-PAH

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for SVOC-PAH.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column DB-UI 8270D which is 20 meters, 0.18 mm ID, 0.36 um dfThe analysis of SVOC-PAH was based on method 8270E and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
SB16 [2-Fluorobiphenyl - 27%, Nitrobenzene-d5 - 26%],
SB16RE [2-Fluorobiphenyl - 27% and Nitrobenzene-d5 - 26%], All the failure samples in surrogates were reanalyzed to confirm the results as per method and reported in the data.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .

The Continuous Calibration File ID BF129846.D met the requirements except for Benzo(g,h,i)perylene biased high therefore no corrective action taken.

The Tuning criteria met requirements.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

E. Additional Comments:
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: PCB

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_O. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:
The soil samples results are based on a dry weight basis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Diesel Range Organics

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Diesel Range Organics.

C. Analytical Techniques:
The analysis were performed on instrument FID_G. The column is RXI-1MS which is 20 meters, 0.18mm ID, 0.18 um df, catalog 13302.The analysis of Diesel Range Organics was based on method 8015D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for
SB18 [Tetracosane-d50 - 33%],
SB16 [Tetracosane-d50 - 29%], SB16RE [Tetracosane-d50 - 28%],
SB17 [Tetracosane-d50 - 34%] and SB17RE [Tetracosane-d50 - 34%].
The Retention Times were acceptable for all samples.
The MS {N4189-03MS} with File ID: FF011250.D recoveries met the requirements for all compounds except for DRO[68%] due to matrix interference.
The MSD {N4189-03MSD} with File ID: FF011251.D recoveries met the acceptable requirements except for DRO[65%] due to matrix interference.
The RPD met criteria.
The Blank Spike met requirements for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.
Sample SB11 was diluted due to high concentration.

E. Additional Comments:
The soil samples results are based on a dry weight basis.

SB18: Surrogate recoveries fail in original run but re-analysis run surrogate is passing in lower end so both run reported in hardcopy.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Sample SB18 original run reported as screening data

F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_ N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: TCLP Mercury,TCLP ICP Metals

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for TCLP Mercury,TCLP ICP Metals.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:57 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide.

C. Analytical Techniques:
The analysis of Ignitability was based on method 1030, The analysis of Reactive Cyanide was based on method 9012B, The analysis of Reactive Sulfide was based on method 9034, The analysis of Corrosivity was based on method 9045D and The analysis of Paint Filter was based on method 9095B.

D. QA/ QC Samples:
The Holding Times were met for all samples except for SB11 of Corrosivity, for SB12 of Corrosivity. for SB13 of Corrosivity. for SB14 of Corrosivity. for SB15 of Corrosivity. for SB16 of Corrosivity .for SB17 of Corrosivity. for SB18 of Corrosivity.for SB19 of Corrosivity .for SB20 of Corrosivity as samples are receive out of hold.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:57 am, Aug 26, 2022

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value**.** This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **N4189**

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: **SOHIL JODHANI** **Date:** **08/26/2022**

2nd Level QA Review Signature: N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:58 am, Aug 26, 2022

Date:

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-15RE	**SB12RE**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-17RE	**SB14RE**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
Client ID:	**SB18**								
N4189-01	SB18	SOIL	unknown10.947	*	6.10	J	0	0	ug/Kg
			Total Tics :		6.10				
			Total Concentration:		6.10				
Client ID:	**SB19**								
N4189-03	SB19	SOIL	Acetone		14.4	J	13.2	27.1	ug/Kg
			Total Voc :		14.4				
			Total Concentration:		14.4				
Client ID:	**SB13**								
N4189-13	SB13	SOIL	Acetone		15.3	J	12.8	26.1	ug/Kg
			Total Voc :		15.3				
			Total Concentration:		15.3				
Client ID:	**SB12RE**								
N4189-15RE	SB12RE	SOIL	Acetone		68.0		13.5	27.7	ug/Kg
			Total Voc :		68.0				
			Total Concentration:		68.0				

SAMPLE DATA

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.94	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.10	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.97	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.94	5.50	ug/Kg
67-64-1	Acetone	27.4	U	13.4	27.4	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.82	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.77	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.92	5.50	ug/Kg
78-93-3	2-Butanone	27.4	U	8.00	27.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.86	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.89	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.73	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.82	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.88	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.72	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.92	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.71	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.77	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.4	U	5.00	27.4	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.81	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.94	5.50	ug/Kg
591-78-6	2-Hexanone	27.4	U	5.10	27.4	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.82	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.82	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.83	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.71	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.77	5.50	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.50	U	0.86	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.86	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.89	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.73	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.0		50 - 163	112%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		54 - 147	96%	SPK: 50
2037-26-5	Toluene-d8	43.0		78 - 125	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.3		50 - 146	85%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	53300	7.782			
540-36-3	1,4-Difluorobenzene	103000	8.685			
3114-55-4	Chlorobenzene-d5	106000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	47200	13.428			
TENTATIVE IDENTIFIED COMPOUNDS						
	unknown10.947	6.10	J		10.9	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	UQ	0.93	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.99	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.30	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.97	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	UQ	1.10	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.93	5.40	ug/Kg
67-64-1	Acetone	14.4	J	13.2	27.1	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.81	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.8	U	6.50	10.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.76	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	27.1	U	7.90	27.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.86	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.88	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.73	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.81	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.87	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.72	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.76	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.1	U	5.00	27.1	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.80	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.93	5.40	ug/Kg
591-78-6	2-Hexanone	27.1	U	5.10	27.1	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.81	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.81	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.76	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.8	U	1.60	10.8	ug/Kg
95-47-6	o-Xylene	5.40	U	0.86	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.86	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.88	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.73	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	66.0		50 - 163	132%	SPK: 50
1868-53-7	Dibromofluoromethane	50.6		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	39.5		78 - 125	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.2		50 - 146	92%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	113000	7.973			
540-36-3	1,4-Difluorobenzene	202000	8.856			
3114-55-4	Chlorobenzene-d5	192000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	88900	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	U	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	28.1	U	13.7	28.1	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.2	U	6.70	11.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.94	5.60	ug/Kg
78-93-3	2-Butanone	28.1	U	8.20	28.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.94	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.1	U	5.10	28.1	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.1	U	5.30	28.1	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.85	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.2	U	1.70	11.2	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	42.8		50 - 163	86%	SPK: 50
1868-53-7	Dibromofluoromethane	43.3		54 - 147	87%	SPK: 50
2037-26-5	Toluene-d8	40.2		78 - 125	80%	SPK: 50
460-00-4	4-Bromofluorobenzene	31.0		50 - 146	62%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	11900	7.783			
540-36-3	1,4-Difluorobenzene	20500	8.685			
3114-55-4	Chlorobenzene-d5	17700	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	6500	13.422			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	U	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.10	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.6		50 - 163	103%	SPK: 50
1868-53-7	Dibromofluoromethane	45.2		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	42.0		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.3		50 - 146	81%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	75100	7.783			
540-36-3	1,4-Difluorobenzene	146000	8.685			
3114-55-4	Chlorobenzene-d5	149000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	66900	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	UQ	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.97	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	26.5	U	12.9	26.5	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.80	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.99	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.6	U	6.30	10.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.5	U	7.70	26.5	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.80	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.5	U	4.90	26.5	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.5	U	5.00	26.5	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.80	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.80	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.81	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.6	U	1.60	10.6	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	1.00	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	100	*	50 - 163	205%	SPK: 50
1868-53-7	Dibromofluoromethane	60.5		54 - 147	121%	SPK: 50
2037-26-5	Toluene-d8	35.5	*	78 - 125	71%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.2		50 - 146	84%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	38000	7.973			
540-36-3	1,4-Difluorobenzene	67600	8.855			
3114-55-4	Chlorobenzene-d5	70300	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	29600	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	UQ	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.2	U	6.10	10.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.2	U	1.50	10.2	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	120	*	50 - 163	248%	SPK: 50
1868-53-7	Dibromofluoromethane	75.2	*	54 - 147	150%	SPK: 50
2037-26-5	Toluene-d8	39.3		78 - 125	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.1		50 - 146	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	7530	7.973			
540-36-3	1,4-Difluorobenzene	12700	8.861			
3114-55-4	Chlorobenzene-d5	14400	11.637			
3855-82-1	1,4-Dichlorobenzene-d4	6380	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.90	5.20	ug/Kg
74-87-3	Chloromethane	5.20	U	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.95	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.93	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.75	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.90	5.20	ug/Kg
67-64-1	Acetone	15.3	J	12.8	26.1	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.78	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.97	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.5	U	6.20	10.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.73	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.88	5.20	ug/Kg
78-93-3	2-Butanone	26.1	U	7.60	26.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.83	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.85	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.70	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.78	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.84	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.69	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.88	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.76	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.68	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.73	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.1	U	4.80	26.1	ug/Kg
108-88-3	Toluene	5.20	U	0.66	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.77	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.74	5.20	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.90	5.20	ug/Kg
591-78-6	2-Hexanone	26.1	U	4.90	26.1	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.78	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.78	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.79	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.68	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.73	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.5	U	1.50	10.5	ug/Kg
95-47-6	o-Xylene	5.20	U	0.83	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.83	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.85	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.75	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.70	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.67	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.98	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.10	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.4		50 - 163	101%	SPK: 50
1868-53-7	Dibromofluoromethane	45.0		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	41.4		78 - 125	83%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.9		50 - 146	78%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	76300	7.783			
540-36-3	1,4-Difluorobenzene	148000	8.685			
3114-55-4	Chlorobenzene-d5	148000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	66100	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	U	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	28.1	U	13.7	28.1	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.3	U	6.70	11.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.95	5.60	ug/Kg
78-93-3	2-Butanone	28.1	U	8.20	28.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.95	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.1	U	5.20	28.1	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.1	U	5.30	28.1	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.86	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.3	U	1.70	11.3	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.5		50 - 163	115%	SPK: 50
1868-53-7	Dibromofluoromethane	26.0	*	54 - 147	52%	SPK: 50
2037-26-5	Toluene-d8	42.2		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	34.3		50 - 146	69%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	3400	7.789			
540-36-3	1,4-Difluorobenzene	6090	8.685			
3114-55-4	Chlorobenzene-d5	5910	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	2200	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	UQ	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.99	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.80	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	68.0		13.5	27.7	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	11.1	U	6.60	11.1	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.78	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.7	U	8.10	27.7	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.88	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.90	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.89	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.81	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.78	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.7	U	5.10	27.7	ug/Kg
108-88-3	Toluene	5.50	U	0.70	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.79	5.50	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.7	U	5.20	27.7	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.78	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.1	U	1.60	11.1	ug/Kg
95-47-6	o-Xylene	5.50	U	0.88	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.88	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.90	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.80	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.30	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	120	*	50 - 163	236%	SPK: 50
1868-53-7	Dibromofluoromethane	70.9		54 - 147	142%	SPK: 50
2037-26-5	Toluene-d8	37.8	*	78 - 125	76%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.9		50 - 146	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	27200	7.973			
540-36-3	1,4-Difluorobenzene	50000	8.855			
3114-55-4	Chlorobenzene-d5	56800	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	26800	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.89	5.20	ug/Kg
74-87-3	Chloromethane	5.20	U	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.94	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.92	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.74	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.89	5.20	ug/Kg
67-64-1	Acetone	25.8	U	12.6	25.8	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.77	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.96	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.20	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.70	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.72	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.87	5.20	ug/Kg
78-93-3	2-Butanone	25.8	U	7.50	25.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.81	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.70	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.84	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.69	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.77	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.83	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.68	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.87	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.75	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.67	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.72	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.8	U	4.70	25.8	ug/Kg
108-88-3	Toluene	5.20	U	0.65	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.76	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.73	5.20	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.89	5.20	ug/Kg
591-78-6	2-Hexanone	25.8	U	4.80	25.8	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.77	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.77	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.78	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.67	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.72	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.20	U	0.81	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.81	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.84	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.74	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.69	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.65	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.97	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.00	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.1		50 - 163	108%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		54 - 147	97%	SPK: 50
2037-26-5	Toluene-d8	42.5		78 - 125	85%	SPK: 50
460-00-4	4-Bromofluorobenzene	39.8		50 - 146	80%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	38200	7.789			
540-36-3	1,4-Difluorobenzene	72600	8.685			
3114-55-4	Chlorobenzene-d5	75400	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	33000	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.89	5.20	ug/Kg
74-87-3	Chloromethane	5.20	UQ	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.94	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.92	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.75	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.89	5.20	ug/Kg
67-64-1	Acetone	25.9	U	12.7	25.9	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.78	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.97	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.4	U	6.20	10.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.73	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.87	5.20	ug/Kg
78-93-3	2-Butanone	25.9	U	7.60	25.9	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.82	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.84	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.70	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.78	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.83	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.68	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.87	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.76	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.67	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.73	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.9	U	4.80	25.9	ug/Kg
108-88-3	Toluene	5.20	U	0.65	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.77	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.74	5.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.89	5.20	ug/Kg
591-78-6	2-Hexanone	25.9	U	4.90	25.9	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.78	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.78	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.79	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.67	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.73	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.4	U	1.50	10.4	ug/Kg
95-47-6	o-Xylene	5.20	U	0.82	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.82	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.84	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.75	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.70	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.65	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.98	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.00	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	92.0	*	50 - 163	184%	SPK: 50
1868-53-7	Dibromofluoromethane	57.4		54 - 147	115%	SPK: 50
2037-26-5	Toluene-d8	36.5	*	78 - 125	73%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.9		50 - 146	88%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	56000	7.973			
540-36-3	1,4-Difluorobenzene	104000	8.855			
3114-55-4	Chlorobenzene-d5	108000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	44700	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	U	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.10	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.7		50 - 163	109%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		54 - 147	93%	SPK: 50
2037-26-5	Toluene-d8	43.0		78 - 125	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	39.2		50 - 146	78%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	68200	7.783			
540-36-3	1,4-Difluorobenzene	130000	8.685			
3114-55-4	Chlorobenzene-d5	131000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	58800	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	Recovery	Qual	Limits Low	Limits High
N4189-01	SB18	1,2-Dichloroethane-d4	50	56.0	112		50	163
		Dibromofluoromethane	50	47.8	96		54	147
		Toluene-d8	50	43.0	86		78	125
		4-Bromofluorobenzene	50	42.4	85		50	146
N4189-03	SB19	1,2-Dichloroethane-d4	50	66.0	132		50	163
		Dibromofluoromethane	50	50.6	101		54	147
		Toluene-d8	50	39.5	79		78	125
		4-Bromofluorobenzene	50	46.3	92		50	146
N4189-05	SB20	1,2-Dichloroethane-d4	50	42.8	86		50	163
		Dibromofluoromethane	50	43.3	87		54	147
		Toluene-d8	50	40.2	80		78	125
		4-Bromofluorobenzene	50	31.0	62		50	146
N4189-07	SB15	1,2-Dichloroethane-d4	50	51.6	103		50	163
		Dibromofluoromethane	50	45.2	90		54	147
		Toluene-d8	50	42.0	84		78	125
		4-Bromofluorobenzene	50	40.3	81		50	146
N4189-09	SB16	1,2-Dichloroethane-d4	50	102	205	*	50	163
		Dibromofluoromethane	50	60.5	121		54	147
		Toluene-d8	50	35.5	71	*	78	125
		4-Bromofluorobenzene	50	42.2	84		50	146
N4189-11	SB17	1,2-Dichloroethane-d4	50	124	248	*	50	163
		Dibromofluoromethane	50	75.2	150	*	54	147
		Toluene-d8	50	39.3	79		78	125
		4-Bromofluorobenzene	50	51.1	102		50	146
N4189-13	SB13	1,2-Dichloroethane-d4	50	50.4	101		50	163
		Dibromofluoromethane	50	45.0	90		54	147
		Toluene-d8	50	41.4	83		78	125
		4-Bromofluorobenzene	50	38.9	78		50	146
N4189-15	SB12	1,2-Dichloroethane-d4	50	57.5	115		50	163
		Dibromofluoromethane	50	26.0	52	*	54	147
		Toluene-d8	50	42.2	84		78	125
		4-Bromofluorobenzene	50	34.3	69		50	146
N4189-15RE	SB12RE	1,2-Dichloroethane-d4	50	118	236	*	50	163
		Dibromofluoromethane	50	70.9	142		54	147
		Toluene-d8	50	37.8	76	*	78	125
		4-Bromofluorobenzene	50	49.9	100		50	146
N4189-17	SB14	1,2-Dichloroethane-d4	50	54.1	108		50	163
		Dibromofluoromethane	50	48.6	97		54	147
		Toluene-d8	50	42.5	85		78	125
		4-Bromofluorobenzene	50	39.8	80		50	146
N4189-17RE	SB14RE	1,2-Dichloroethane-d4	50	92.0	184	*	50	163
		Dibromofluoromethane	50	57.4	115		54	147
		Toluene-d8	50	36.5	73	*	78	125
		4-Bromofluorobenzene	50	43.9	88		50	146
N4189-19	SB11	1,2-Dichloroethane-d4	50	54.7	109		50	163
		Dibromofluoromethane	50	46.4	93		54	147
		Toluene-d8	50	43.0	86		78	125
		4-Bromofluorobenzene	50	39.2	78		50	146
VD0815SBL01	VD0815SBL01	1,2-Dichloroethane-d4	50	59.9	120		50	163
		Dibromofluoromethane	50	46.8	94		54	147
		Toluene-d8	50	38.9	78		78	125
		4-Bromofluorobenzene	50	44.5	89		50	146

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
VD0815SBS01	VD0815SBS01	1,2-Dichloroethane-d4	50	52.2	104	50	163
		Dibromofluoromethane	50	44.6	89	54	147
		Toluene-d8	50	41.3	83	78	125
		4-Bromofluorobenzene	50	47.8	96	50	146
VD0815SBSD01	VD0815SBSD01	1,2-Dichloroethane-d4	50	54.1	108	50	163
		Dibromofluoromethane	50	45.5	91	54	147
		Toluene-d8	50	41.0	82	78	125
		4-Bromofluorobenzene	50	47.9	96	50	146
VD0816SBL01	VD0816SBL01	1,2-Dichloroethane-d4	50	63.0	126	50	163
		Dibromofluoromethane	50	50.7	101	54	147
		Toluene-d8	50	40.0	80	78	125
		4-Bromofluorobenzene	50	45.4	91	50	146
VD0816SBS01	VD0816SBS01	1,2-Dichloroethane-d4	50	56.6	113	50	163
		Dibromofluoromethane	50	49.1	98	54	147
		Toluene-d8	50	42.1	84	78	125
		4-Bromofluorobenzene	50	50.2	100	50	146
VY0814SBL01	VY0814SBL01	1,2-Dichloroethane-d4	50	57.2	114	50	163
		Dibromofluoromethane	50	55.2	110	54	147
		Toluene-d8	50	52.0	104	78	125
		4-Bromofluorobenzene	50	47.0	94	50	146
VY0814SBS01	VY0814SBS01	1,2-Dichloroethane-d4	50	50.1	100	50	163
		Dibromofluoromethane	50	52.7	105	54	147
		Toluene-d8	50	52.2	104	78	125
		4-Bromofluorobenzene	50	51.9	104	50	146

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074096.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0815SBS01	Dichlorodifluoromethane	20	28.1	ug/Kg	141		*	64	136	
	Chloromethane	20	25.4	ug/Kg	127			70	130	
	Vinyl chloride	20	25.4	ug/Kg	127			72	129	
	Bromomethane	20	22.4	ug/Kg	112			58	141	
	Chloroethane	20	22.7	ug/Kg	114			69	130	
	Trichlorofluoromethane	20	19.7	ug/Kg	99			69	134	
	1,1,2-Trichlorotrifluoroethane	20	20.9	ug/Kg	104			81	123	
	1,1-Dichloroethene	20	21.0	ug/Kg	105			79	121	
	Acetone	100	82.5	ug/Kg	83			60	131	
	Carbon disulfide	20	23.8	ug/Kg	119			60	128	
	Methyl tert-butyl Ether	20	20.8	ug/Kg	104			77	129	
	Methyl Acetate	20	21.6	ug/Kg	108			69	149	
	Methylene Chloride	20	21.1	ug/Kg	106			49	160	
	trans-1,2-Dichloroethene	20	20.9	ug/Kg	104			80	123	
	1,1-Dichloroethane	20	21.2	ug/Kg	106			82	123	
	Cyclohexane	20	20.9	ug/Kg	104			76	122	
	2-Butanone	100	100	ug/Kg	100			69	131	
	Carbon Tetrachloride	20	20.9	ug/Kg	104			76	129	
	cis-1,2-Dichloroethene	20	20.3	ug/Kg	102			82	123	
	Bromochloromethane	20	20.9	ug/Kg	104			62	134	
	Chloroform	20	20.9	ug/Kg	104			82	125	
	1,1,1-Trichloroethane	20	21.0	ug/Kg	105			80	126	
	Methylcyclohexane	20	21.0	ug/Kg	105			77	123	
	Benzene	20	20.8	ug/Kg	104			84	121	
	1,2-Dichloroethane	20	20.5	ug/Kg	103			81	126	
	Trichloroethene	20	21.1	ug/Kg	106			83	122	
	1,2-Dichloropropane	20	20.5	ug/Kg	103			83	122	
	Bromodichloromethane	20	21.1	ug/Kg	106			82	123	
	4-Methyl-2-Pentanone	100	110	ug/Kg	110			70	135	
	Toluene	20	20.9	ug/Kg	104			83	122	
	t-1,3-Dichloropropene	20	20.9	ug/Kg	104			78	124	
	cis-1,3-Dichloropropene	20	20.6	ug/Kg	103			81	122	
	1,1,2-Trichloroethane	20	21.0	ug/Kg	105			82	125	
	2-Hexanone	100	100	ug/Kg	100			66	138	
	Dibromochloromethane	20	20.1	ug/Kg	101			79	125	
	1,2-Dibromoethane	20	20.9	ug/Kg	104			80	125	
	Tetrachloroethene	20	22.5	ug/Kg	113			83	125	
	Chlorobenzene	20	20.8	ug/Kg	104			84	122	
	Ethyl Benzene	20	20.9	ug/Kg	104			82	124	
	m/p-Xylenes	40	41.9	ug/Kg	105			83	124	
	o-Xylene	20	20.7	ug/Kg	104			83	123	
	Styrene	20	20.8	ug/Kg	104			82	124	
	Bromoform	20	21.8	ug/Kg	109			75	127	
	Isopropylbenzene	20	20.7	ug/Kg	104			82	124	
	1,1,2,2-Tetrachloroethane	20	21.6	ug/Kg	108			77	127	
	1,3-Dichlorobenzene	20	20.7	ug/Kg	104			83	122	
	1,4-Dichlorobenzene	20	20.8	ug/Kg	104			84	121	
	1,2-Dichlorobenzene	20	20.2	ug/Kg	101			83	124	
	1,2-Dibromo-3-Chloropropane	20	20.8	ug/Kg	104			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074096.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0815SBS01	1,2,4-Trichlorobenzene	20	18.6	ug/Kg	93			78	127	
	1,2,3-Trichlorobenzene	20	17.5	ug/Kg	88			70	137	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074097.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Qual	Limits Low	Limits High	Limits RPD
VD0815SBSD01	Dichlorodifluoromethane	20	27.5	ug/Kg	138	2	*		64	136	20
	Chloromethane	20	25.6	ug/Kg	128	1			70	130	20
	Vinyl chloride	20	24.8	ug/Kg	124	2			72	129	20
	Bromomethane	20	23.7	ug/Kg	119	6			58	141	20
	Chloroethane	20	25.6	ug/Kg	128	12			69	130	20
	Trichlorofluoromethane	20	33.3	ug/Kg	167	51	*	*	69	134	20
	1,1,2-Trichlorotrifluoroethane	20	19.9	ug/Kg	100	4			81	123	20
	1,1-Dichloroethene	20	21.7	ug/Kg	109	4			79	121	20
	Acetone	100	87.3	ug/Kg	87	5			60	131	20
	Carbon disulfide	20	24.0	ug/Kg	120	1			60	128	20
	Methyl tert-butyl Ether	20	22.8	ug/Kg	114	9			77	129	20
	Methyl Acetate	20	23.0	ug/Kg	115	6			69	149	20
	Methylene Chloride	20	23.7	ug/Kg	119	12			49	160	20
	trans-1,2-Dichloroethene	20	21.7	ug/Kg	109	5			80	123	20
	1,1-Dichloroethane	20	21.9	ug/Kg	110	4			82	123	20
	Cyclohexane	20	21.1	ug/Kg	106	2			76	122	20
	2-Butanone	100	110	ug/Kg	110	10			69	131	20
	Carbon Tetrachloride	20	20.5	ug/Kg	103	1			76	129	20
	cis-1,2-Dichloroethene	20	21.0	ug/Kg	105	3			82	123	20
	Bromochloromethane	20	22.5	ug/Kg	113	8			62	134	20
	Chloroform	20	21.6	ug/Kg	108	4			82	125	20
	1,1,1-Trichloroethane	20	21.0	ug/Kg	105	0			80	126	20
	Methylcyclohexane	20	19.9	ug/Kg	100	5			77	123	20
	Benzene	20	21.0	ug/Kg	105	1			84	121	20
	1,2-Dichloroethane	20	21.7	ug/Kg	109	6			81	126	20
	Trichloroethene	20	20.9	ug/Kg	104	2			83	122	20
	1,2-Dichloropropane	20	21.1	ug/Kg	106	3			83	122	20
	Bromodichloromethane	20	20.8	ug/Kg	104	2			82	123	20
	4-Methyl-2-Pentanone	100	110	ug/Kg	110	0			70	135	20
	Toluene	20	20.9	ug/Kg	104	0			83	122	20
	t-1,3-Dichloropropene	20	21.3	ug/Kg	106	2			78	124	20
	cis-1,3-Dichloropropene	20	21.1	ug/Kg	106	3			81	122	20
	1,1,2-Trichloroethane	20	22.3	ug/Kg	112	6			82	125	20
	2-Hexanone	100	110	ug/Kg	110	10			66	138	20
	Dibromochloromethane	20	21.2	ug/Kg	106	5			79	125	20
	1,2-Dibromoethane	20	21.7	ug/Kg	109	5			80	125	20
	Tetrachloroethene	20	21.1	ug/Kg	106	6			83	125	20
	Chlorobenzene	20	20.5	ug/Kg	103	1			84	122	20
	Ethyl Benzene	20	20.2	ug/Kg	101	3			82	124	20
	m/p-Xylenes	40	41.1	ug/Kg	103	2			83	124	20
	o-Xylene	20	19.7	ug/Kg	99	5			83	123	20
	Styrene	20	20.3	ug/Kg	102	2			82	124	20
	Bromoform	20	21.9	ug/Kg	110	1			75	127	20
	Isopropylbenzene	20	20.4	ug/Kg	102	2			82	124	20
	1,1,2,2-Tetrachloroethane	20	22.9	ug/Kg	115	6			77	127	20
	1,3-Dichlorobenzene	20	20.8	ug/Kg	104	0			83	122	20
	1,4-Dichlorobenzene	20	20.6	ug/Kg	103	1			84	121	20
	1,2-Dichlorobenzene	20	20.1	ug/Kg	101	0			83	124	20
	1,2-Dibromo-3-Chloropropane	20	18.6	ug/Kg	93	11			66	134	20

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074097.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0815SBSD01	1,2,4-Trichlorobenzene	20	18.5	ug/Kg	93	0		78	127	20
	1,2,3-Trichlorobenzene	20	18.1	ug/Kg	91	3		70	137	20

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074104.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0816SBS01	Dichlorodifluoromethane	20	25.8	ug/Kg	129			64	136	
	Chloromethane	20	26.8	ug/Kg	134		*	70	130	
	Vinyl chloride	20	25.6	ug/Kg	128			72	129	
	Bromomethane	20	23.7	ug/Kg	119			58	141	
	Chloroethane	20	25.4	ug/Kg	127			69	130	
	Trichlorofluoromethane	20	21.8	ug/Kg	109			69	134	
	1,1,2-Trichlorotrifluoroethane	20	21.9	ug/Kg	110			81	123	
	1,1-Dichloroethene	20	21.5	ug/Kg	108			79	121	
	Acetone	100	98.5	ug/Kg	99			60	131	
	Carbon disulfide	20	23.1	ug/Kg	116			60	128	
	Methyl tert-butyl Ether	20	21.8	ug/Kg	109			77	129	
	Methyl Acetate	20	24.8	ug/Kg	124			69	149	
	Methylene Chloride	20	28.1	ug/Kg	141			49	160	
	trans-1,2-Dichloroethene	20	22.3	ug/Kg	112			80	123	
	1,1-Dichloroethane	20	22.9	ug/Kg	115			82	123	
	Cyclohexane	20	20.4	ug/Kg	102			76	122	
	2-Butanone	100	110	ug/Kg	110			69	131	
	Carbon Tetrachloride	20	22.0	ug/Kg	110			76	129	
	cis-1,2-Dichloroethene	20	21.0	ug/Kg	105			82	123	
	Bromochloromethane	20	23.3	ug/Kg	117			62	134	
	Chloroform	20	23.3	ug/Kg	117			82	125	
	1,1,1-Trichloroethane	20	22.3	ug/Kg	112			80	126	
	Methylcyclohexane	20	20.1	ug/Kg	101			77	123	
	Benzene	20	22.6	ug/Kg	113			84	121	
	1,2-Dichloroethane	20	22.7	ug/Kg	114			81	126	
	Trichloroethene	20	22.0	ug/Kg	110			83	122	
	1,2-Dichloropropane	20	22.0	ug/Kg	110			83	122	
	Bromodichloromethane	20	22.4	ug/Kg	112			82	123	
	4-Methyl-2-Pentanone	100	120	ug/Kg	120			70	135	
	Toluene	20	21.8	ug/Kg	109			83	122	
	t-1,3-Dichloropropene	20	22.1	ug/Kg	111			78	124	
	cis-1,3-Dichloropropene	20	20.9	ug/Kg	104			81	122	
	1,1,2-Trichloroethane	20	22.9	ug/Kg	115			82	125	
	2-Hexanone	100	110	ug/Kg	110			66	138	
	Dibromochloromethane	20	21.8	ug/Kg	109			79	125	
	1,2-Dibromoethane	20	21.7	ug/Kg	109			80	125	
	Tetrachloroethene	20	20.8	ug/Kg	104			83	125	
	Chlorobenzene	20	21.2	ug/Kg	106			84	122	
	Ethyl Benzene	20	20.8	ug/Kg	104			82	124	
	m/p-Xylenes	40	41.1	ug/Kg	103			83	124	
	o-Xylene	20	20.6	ug/Kg	103			83	123	
	Styrene	20	21.0	ug/Kg	105			82	124	
	Bromoform	20	23.0	ug/Kg	115			75	127	
	Isopropylbenzene	20	20.4	ug/Kg	102			82	124	
	1,1,2,2-Tetrachloroethane	20	22.7	ug/Kg	114			77	127	
	1,3-Dichlorobenzene	20	19.9	ug/Kg	100			83	122	
	1,4-Dichlorobenzene	20	20.5	ug/Kg	103			84	121	
	1,2-Dichlorobenzene	20	20.2	ug/Kg	101			83	124	
	1,2-Dibromo-3-Chloropropane	20	21.3	ug/Kg	106			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074104.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0816SBS01	1,2,4-Trichlorobenzene	20	17.6	ug/Kg	88			78	127	
	1,2,3-Trichlorobenzene	20	17.6	ug/Kg	88			70	137	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VY010004.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VY0814SBS01	Dichlorodifluoromethane	20	23.4	ug/Kg	117			64	136	
	Chloromethane	20	17.7	ug/Kg	89			70	130	
	Vinyl chloride	20	17.2	ug/Kg	86			72	129	
	Bromomethane	20	18.1	ug/Kg	91			58	141	
	Chloroethane	20	17.3	ug/Kg	86			69	130	
	Trichlorofluoromethane	20	19.1	ug/Kg	96			69	134	
	1,1,2-Trichlorotrifluoroethane	20	19.3	ug/Kg	97			81	123	
	1,1-Dichloroethene	20	18.6	ug/Kg	93			79	121	
	Acetone	100	83.9	ug/Kg	84			60	131	
	Carbon disulfide	20	16.4	ug/Kg	82			60	128	
	Methyl tert-butyl Ether	20	18.5	ug/Kg	93			77	129	
	Methyl Acetate	20	15.0	ug/Kg	75			69	149	
	Methylene Chloride	20	20.1	ug/Kg	101			49	160	
	trans-1,2-Dichloroethene	20	18.2	ug/Kg	91			80	123	
	1,1-Dichloroethane	20	17.9	ug/Kg	90			82	123	
	Cyclohexane	20	16.7	ug/Kg	84			76	122	
	2-Butanone	100	80.7	ug/Kg	81			69	131	
	Carbon Tetrachloride	20	20.9	ug/Kg	104			76	129	
	cis-1,2-Dichloroethene	20	18.9	ug/Kg	95			82	123	
	Bromochloromethane	20	15.7	ug/Kg	79			62	134	
	Chloroform	20	19.5	ug/Kg	98			82	125	
	1,1,1-Trichloroethane	20	19.4	ug/Kg	97			80	126	
	Methylcyclohexane	20	17.9	ug/Kg	90			77	123	
	Benzene	20	18.8	ug/Kg	94			84	121	
	1,2-Dichloroethane	20	19.3	ug/Kg	97			81	126	
	Trichloroethene	20	19.2	ug/Kg	96			83	122	
	1,2-Dichloropropane	20	18.0	ug/Kg	90			83	122	
	Bromodichloromethane	20	19.9	ug/Kg	100			82	123	
	4-Methyl-2-Pentanone	100	83.1	ug/Kg	83			70	135	
	Toluene	20	19.7	ug/Kg	99			83	122	
	t-1,3-Dichloropropene	20	19.1	ug/Kg	96			78	124	
	cis-1,3-Dichloropropene	20	19.3	ug/Kg	97			81	122	
	1,1,2-Trichloroethane	20	19.5	ug/Kg	98			82	125	
	2-Hexanone	100	81.7	ug/Kg	82			66	138	
	Dibromochloromethane	20	20.4	ug/Kg	102			79	125	
	1,2-Dibromoethane	20	19.5	ug/Kg	98			80	125	
	Tetrachloroethene	20	20.4	ug/Kg	102			83	125	
	Chlorobenzene	20	19.8	ug/Kg	99			84	122	
	Ethyl Benzene	20	19.7	ug/Kg	99			82	124	
	m/p-Xylenes	40	40.7	ug/Kg	102			83	124	
	o-Xylene	20	19.4	ug/Kg	97			83	123	
	Styrene	20	20.1	ug/Kg	101			82	124	
	Bromoform	20	20.3	ug/Kg	102			75	127	
	Isopropylbenzene	20	19.6	ug/Kg	98			82	124	
	1,1,2,2-Tetrachloroethane	20	18.3	ug/Kg	92			77	127	
	1,3-Dichlorobenzene	20	21.0	ug/Kg	105			83	122	
	1,4-Dichlorobenzene	20	20.1	ug/Kg	101			84	121	
	1,2-Dichlorobenzene	20	21.2	ug/Kg	106			83	124	
	1,2-Dibromo-3-Chloropropane	20	17.6	ug/Kg	88			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VY010004.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VY0814SBS01	1,2,4-Trichlorobenzene	20	20.4	ug/Kg	102			78	127	
	1,2,3-Trichlorobenzene	20	20.4	ug/Kg	102			70	137	

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0815SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074095.D Lab Sample ID: VD0815SBL01

Date Analyzed: 08/15/2022 Time Analyzed: 17:40

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0815SBS01	VD0815SBS01	VD074096.D	08/15/2022
VD0815SBSD01	VD0815SBSD01	VD074097.D	08/15/2022
SB19	N4189-03	VD074098.D	08/15/2022

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0816SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074103.D Lab Sample ID: VD0816SBL01

Date Analyzed: 08/16/2022 Time Analyzed: 15:57

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0816SBS01	VD0816SBS01	VD074104.D	08/16/2022
SB16	N4189-09	VD074109.D	08/16/2022
SB17	N4189-11	VD074110.D	08/16/2022
SB12RE	N4189-15RE	VD074111.D	08/16/2022
SB14RE	N4189-17RE	VD074112.D	08/16/2022

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VY0814SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010003.D Lab Sample ID: VY0814SBL01

Date Analyzed: 08/14/2022 Time Analyzed: 17:24

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VY0814SBS01	VY0814SBS01	VY010004.D	08/14/2022
SB18	N4189-01	VY010006.D	08/14/2022
SB20	N4189-05	VY010008.D	08/14/2022
SB15	N4189-07	VY010009.D	08/14/2022
SB13	N4189-13	VY010012.D	08/14/2022
SB12	N4189-15	VY010013.D	08/14/2022
SB14	N4189-17	VY010014.D	08/14/2022
SB11	N4189-19	VY010015.D	08/14/2022

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074086.D BFB Injection Date: 08/15/2022

Instrument ID: MSVOA_D BFB Injection Time: 08:42

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.1
75	30.0 - 60.0% of mass 95	57.3
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	1.2 (1.5) 1
174	50.0 - 100.0% of mass 95	83.4
175	5.0 - 9.0% of mass 174	6.2 (7.5) 1
176	95.0 - 101.0% of mass 174	80.6 (96.6) 1
177	5.0 - 9.0% of mass 176	5.6 (7) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VD074087.D	08/15/2022	09:25
VSTDICC010	VSTDICC010	VD074088.D	08/15/2022	10:51
VSTDICC020	VSTDICC020	VD074089.D	08/15/2022	11:19
VSTDICCC050	VSTDICCC050	VD074090.D	08/15/2022	12:35
VSTDICC100	VSTDICC100	VD074091.D	08/15/2022	13:04
VSTDICC150	VSTDICC150	VD074092.D	08/15/2022	13:32
VD0815SBL01	VD0815SBL01	VD074095.D	08/15/2022	17:40
VD0815SBS01	VD0815SBS01	VD074096.D	08/15/2022	18:08
VD0815SBSD01	VD0815SBSD01	VD074097.D	08/15/2022	18:37
SB19	N4189-03	VD074098.D	08/15/2022	19:06

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074101.D BFB Injection Date: 08/16/2022

Instrument ID: MSVOA_D BFB Injection Time: 13:41

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.5
75	30.0 - 60.0% of mass 95	54.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	1.4 (1.7) 1
174	50.0 - 100.0% of mass 95	80.9
175	5.0 - 9.0% of mass 174	6.6 (8.2) 1
176	95.0 - 101.0% of mass 174	80.1 (98.9) 1
177	5.0 - 9.0% of mass 176	5.3 (6.6) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VD074102.D	08/16/2022	14:52
VD0816SBL01	VD0816SBL01	VD074103.D	08/16/2022	15:57
VD0816SBS01	VD0816SBS01	VD074104.D	08/16/2022	16:25
SB16	N4189-09	VD074109.D	08/16/2022	18:50
SB17	N4189-11	VD074110.D	08/16/2022	19:18
SB12RE	N4189-15RE	VD074111.D	08/16/2022	19:47
SB14RE	N4189-17RE	VD074112.D	08/16/2022	20:16

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY009981.D BFB Injection Date: 08/12/2022

Instrument ID: MSVOA_Y BFB Injection Time: 09:06

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	52.2
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	1.3 (1.5) 1
174	50.0 - 100.0% of mass 95	86.8
175	5.0 - 9.0% of mass 174	6.5 (7.5) 1
176	95.0 - 101.0% of mass 174	82.5 (95) 1
177	5.0 - 9.0% of mass 176	6.2 (7.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VY009983.D	08/12/2022	13:25
VSTDICC010	VSTDICC010	VY009984.D	08/12/2022	14:11
VSTDICC020	VSTDICC020	VY009985.D	08/12/2022	14:34
VSTDICCC050	VSTDICCC050	VY009986.D	08/12/2022	14:57
VSTDICC075	VSTDICC075	VY009987.D	08/12/2022	15:19
VSTDICC100	VSTDICC100	VY009988.D	08/12/2022	15:42

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010001.D BFB Injection Date: 08/14/2022

Instrument ID: MSVOA_Y BFB Injection Time: 15:48

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.6
75	30.0 - 60.0% of mass 95	46.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1.1 (1.5) 1
174	50.0 - 100.0% of mass 95	76.6
175	5.0 - 9.0% of mass 174	6.2 (8) 1
176	95.0 - 101.0% of mass 174	73.1 (95.4) 1
177	5.0 - 9.0% of mass 176	4.8 (6.5) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VY010002.D	08/14/2022	16:28
VY0814SBL01	VY0814SBL01	VY010003.D	08/14/2022	17:24
VY0814SBS01	VY0814SBS01	VY010004.D	08/14/2022	17:52
SB18	N4189-01	VY010006.D	08/14/2022	18:40
SB20	N4189-05	VY010008.D	08/14/2022	19:27
SB15	N4189-07	VY010009.D	08/14/2022	19:50
SB13	N4189-13	VY010012.D	08/14/2022	21:00
SB12	N4189-15	VY010013.D	08/14/2022	21:24
SB14	N4189-17	VY010014.D	08/14/2022	21:47
SB11	N4189-19	VY010015.D	08/14/2022	22:11

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074090.D Date Analyzed: 08/15/2022

Instrument ID: MSVOA_D Time Analyzed: 12:35

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	164497	7.97	268762	8.86	250251	11.63
UPPER LIMIT	328994	8.467	537524	9.355	500502	12.132
LOWER LIMIT	82248.5	7.467	134381	8.355	125126	11.132
EPA SAMPLE NO.						
SB19	113200	7.97	202299	8.86	192463	11.63
VD0815SBL01	128903	7.97	224273	8.86	210647	11.63
VD0815SBS01	154610	7.97	253223	8.86	233972	11.63
VD0815SBSD01	150142	7.97	247874	8.86	235022	11.63

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074090.D Date Analyzed: 08/15/2022

Instrument ID: MSVOA_D Time Analyzed: 12:35

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #	RT #				
12 HOUR STD	166350	13.561				
UPPER LIMIT	332700	14.061				
LOWER LIMIT	83175	13.061				
EPA SAMPLE NO.						
SB19	88944	13.56				
VD0815SBL01	93718	13.56				
VD0815SBS01	121467	13.56				
VD0815SBSD01	119200	13.56				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074102.D Date Analyzed: 08/16/2022

Instrument ID: MSVOA_D Time Analyzed: 14:52

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #		RT #	IS2 AREA #		RT #	IS3 AREA #		RT #
12 HOUR STD	147564		7.97	231892		8.86	221085		11.63
UPPER LIMIT	295128		8.467	463784		9.356	442170		12.132
LOWER LIMIT	73782		7.467	115946		8.356	110543		11.132
EPA SAMPLE NO.									
SB16	38015	*	7.97	67647	*	8.86	70315	*	11.63
SB17	7529	*	7.97	12675	*	8.86	14392	*	11.64
SB12RE	27171	*	7.97	50001	*	8.86	56750	*	11.63
SB14RE	55973	*	7.97	103556	*	8.86	108357	*	11.63
VD0816SBL01	118624		7.97	209662		8.86	193982		11.63
VD0816SBS01	127614		7.97	209749		8.86	199342		11.63

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074102.D Date Analyzed: 08/16/2022

Instrument ID: MSVOA_D Time Analyzed: 14:52

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #		RT #				
12 HOUR STD	119567		13.561				
UPPER LIMIT	239134		14.061				
LOWER LIMIT	59783.5		13.061				
EPA SAMPLE NO.							
SB16	29609	*	13.56				
SB17	6377	*	13.56				
SB12RE	26843	*	13.56				
SB14RE	44657	*	13.56				
VD0816SBL01	84341		13.56				
VD0816SBS01	105791		13.56				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010002.D Date Analyzed: 08/14/2022

Instrument ID: MSVOA_Y Time Analyzed: 16:28

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #		RT #	IS2 AREA #		RT #	IS3 AREA #		RT #
12 HOUR STD	104500		7.78	169460		8.69	152999		11.49
UPPER LIMIT	209000		8.283	338920		9.185	305998		11.989
LOWER LIMIT	52250		7.283	84730		8.185	76499.5		10.989
EPA SAMPLE NO.									
SB18	53318		7.78	103133		8.69	106172		11.49
SB20	11887	*	7.78	20548	*	8.69	17711	*	11.49
SB15	75073		7.78	146364		8.69	149193		11.49
SB13	76264		7.78	147909		8.69	147964		11.49
SB12	3402	*	7.79	6093	*	8.69	5912	*	11.49
SB14	38244	*	7.79	72617	*	8.69	75412	*	11.49
SB11	68224		7.78	130182		8.69	131022		11.49
VY0814SBL01	87933		7.78	159417		8.69	143173		11.49
VY0814SBS01	103699		7.78	172434		8.69	155522		11.49

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010002.D Date Analyzed: 08/14/2022

Instrument ID: MSVOA_Y Time Analyzed: 16:28

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #		RT #				
12 HOUR STD	75236		13.428				
UPPER LIMIT	150472		13.928				
LOWER LIMIT	37618		12.928				
EPA SAMPLE NO.							
SB18	47194		13.43				
SB20	6500	*	13.42				
SB15	66933		13.42				
SB13	66057		13.42				
SB12	2197	*	13.42				
SB14	33004	*	13.42				
SB11	58835		13.42				
VY0814SBL01	64130		13.42				
VY0814SBS01	77375		13.42				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	59.9		50 - 163	120%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		54 - 147	94%	SPK: 50
2037-26-5	Toluene-d8	38.9		78 - 125	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		50 - 146	89%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	129000	7.967			
540-36-3	1,4-Difluorobenzene	224000	8.856			
3114-55-4	Chlorobenzene-d5	211000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	93700	13.561			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	63.0		50 - 163	126%	SPK: 50
1868-53-7	Dibromofluoromethane	50.7		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	40.1		78 - 125	80%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		50 - 146	91%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	119000	7.973			
540-36-3	1,4-Difluorobenzene	210000	8.855			
3114-55-4	Chlorobenzene-d5	194000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	84300	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.2		50 - 163	114%	SPK: 50
1868-53-7	Dibromofluoromethane	55.2		54 - 147	110%	SPK: 50
2037-26-5	Toluene-d8	52.0		78 - 125	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.0		50 - 146	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	87900	7.783			
540-36-3	1,4-Difluorobenzene	159000	8.685			
3114-55-4	Chlorobenzene-d5	143000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	64100	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	28.1		0.86	5.00	ug/Kg
74-87-3	Chloromethane	25.4		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	25.4		0.91	5.00	ug/Kg
74-83-9	Bromomethane	22.4		1.20	5.00	ug/Kg
75-00-3	Chloroethane	22.7		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	19.7		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	20.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.0		0.86	5.00	ug/Kg
67-64-1	Acetone	82.5		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	23.8		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	20.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	21.6		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	21.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	20.9		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	21.2		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	20.9		0.84	5.00	ug/Kg
78-93-3	2-Butanone	100		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.9		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	20.3		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	20.9		0.81	5.00	ug/Kg
67-66-3	Chloroform	20.9		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	21.0		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	21.0		0.80	5.00	ug/Kg
71-43-2	Benzene	20.8		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	20.5		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	21.1		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	20.5		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	21.1		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		4.60	25.0	ug/Kg
108-88-3	Toluene	20.9		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.9		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.6		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	21.0		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	100		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	20.1		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	20.9		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	22.5		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	20.8		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.9		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.9		1.50	10.0	ug/Kg
95-47-6	o-Xylene	20.7		0.79	5.00	ug/Kg
100-42-5	Styrene	20.8		0.79	5.00	ug/Kg
75-25-2	Bromoform	21.8		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.7		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	21.6		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.7		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.8		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	20.8		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	18.6		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	17.5		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	52.2		50 - 163	104%	SPK: 50
1868-53-7	Dibromofluoromethane	44.6		54 - 147	89%	SPK: 50
2037-26-5	Toluene-d8	41.3		78 - 125	83%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.8		50 - 146	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	155000	7.973			
540-36-3	1,4-Difluorobenzene	253000	8.855			
3114-55-4	Chlorobenzene-d5	234000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	121000	13.555			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	25.8		0.86	5.00	ug/Kg
74-87-3	Chloromethane	26.8		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	25.6		0.91	5.00	ug/Kg
74-83-9	Bromomethane	23.7		1.20	5.00	ug/Kg
75-00-3	Chloroethane	25.4		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	21.8		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	21.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.5		0.86	5.00	ug/Kg
67-64-1	Acetone	98.5		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	23.1		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	21.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	24.8		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	28.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	22.3		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	22.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	20.4		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	22.0		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	21.0		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	23.3		0.81	5.00	ug/Kg
67-66-3	Chloroform	23.3		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	22.3		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	20.1		0.80	5.00	ug/Kg
71-43-2	Benzene	22.6		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	22.7		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	22.0		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	22.0		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	22.4		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	120		4.60	25.0	ug/Kg
108-88-3	Toluene	21.8		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	22.1		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.9		0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	22.9		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	110		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	21.8		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	21.7		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	20.8		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	21.2		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.8		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.1		1.50	10.0	ug/Kg
95-47-6	o-Xylene	20.6		0.79	5.00	ug/Kg
100-42-5	Styrene	21.0		0.79	5.00	ug/Kg
75-25-2	Bromoform	23.0		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.4		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	22.7		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	19.9		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.5		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	21.3		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	17.6		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	17.6		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.6		50 - 163	113%	SPK: 50
1868-53-7	Dibromofluoromethane	49.1		54 - 147	98%	SPK: 50
2037-26-5	Toluene-d8	42.1		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.2		50 - 146	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	128000	7.967			
540-36-3	1,4-Difluorobenzene	210000	8.856			
3114-55-4	Chlorobenzene-d5	199000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	106000	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	23.4		0.86	5.00	ug/Kg
74-87-3	Chloromethane	17.7		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	17.2		0.91	5.00	ug/Kg
74-83-9	Bromomethane	18.1		1.20	5.00	ug/Kg
75-00-3	Chloroethane	17.3		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	19.1		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	19.3		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	18.6		0.86	5.00	ug/Kg
67-64-1	Acetone	83.9		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	16.4		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	18.5		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	15.0		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	20.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	18.2		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	17.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	16.7		0.84	5.00	ug/Kg
78-93-3	2-Butanone	80.7		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.9		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	18.9		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	15.7		0.81	5.00	ug/Kg
67-66-3	Chloroform	19.5		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	19.4		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	17.9		0.80	5.00	ug/Kg
71-43-2	Benzene	18.8		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	19.3		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	19.2		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	18.0		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	19.9		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	83.1		4.60	25.0	ug/Kg
108-88-3	Toluene	19.7		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	19.1		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	19.3		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	19.5		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	81.7		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	20.4		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	19.5		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	20.4		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	19.8		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	19.7		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	40.7		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.4		0.79	5.00	ug/Kg
100-42-5	Styrene	20.1		0.79	5.00	ug/Kg
75-25-2	Bromoform	20.3		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	19.6		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	18.3		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	21.0		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.1		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	21.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	17.6		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	20.4		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	20.4		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.2		50 - 163	100%	SPK: 50
1868-53-7	Dibromofluoromethane	52.7		54 - 147	105%	SPK: 50
2037-26-5	Toluene-d8	52.2		78 - 125	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.9		50 - 146	104%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	104000	7.783			
540-36-3	1,4-Difluorobenzene	172000	8.685			
3114-55-4	Chlorobenzene-d5	156000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	77400	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	27.5		0.86	5.00	ug/Kg
74-87-3	Chloromethane	25.6		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	24.8		0.91	5.00	ug/Kg
74-83-9	Bromomethane	23.7		1.20	5.00	ug/Kg
75-00-3	Chloroethane	25.6		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	33.3		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	19.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.7		0.86	5.00	ug/Kg
67-64-1	Acetone	87.3		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	24.0		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	22.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	23.0		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	23.7		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	21.7		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	21.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	21.1		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.5		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	21.0		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	22.5		0.81	5.00	ug/Kg
67-66-3	Chloroform	21.6		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	21.0		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	19.9		0.80	5.00	ug/Kg
71-43-2	Benzene	21.0		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	21.7		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	20.9		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	21.1		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	20.8		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		4.60	25.0	ug/Kg
108-88-3	Toluene	20.9		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	21.3		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	21.1		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	22.3		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	110		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	21.2		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	21.7		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	21.1		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	20.5		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.2		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.1		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.7		0.79	5.00	ug/Kg
100-42-5	Styrene	20.3		0.79	5.00	ug/Kg
75-25-2	Bromoform	21.9		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.4		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	22.9		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.8		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.6		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.1		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	18.6		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	18.5		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	18.1		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.1		50 - 163	108%	SPK: 50
1868-53-7	Dibromofluoromethane	45.5		54 - 147	91%	SPK: 50
2037-26-5	Toluene-d8	41.0		78 - 125	82%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.9		50 - 146	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	150000	7.973			
540-36-3	1,4-Difluorobenzene	248000	8.855			
3114-55-4	Chlorobenzene-d5	235000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	119000	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Calibration Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074087.D RRF010 = VD074088.D RRF020 = VD074089.D
RRF050 = VD074090.D RRF100 = VD074091.D RRF150 = VD074092.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.715	0.594	0.549	0.356	0.323	0.303	0.473	35.9
Chloromethane	0.710	0.715	0.664	0.454	0.419	0.381	0.557	27.8
Vinyl Chloride	0.855	0.872	0.875	0.657	0.603	0.571	0.739	19.5
Bromomethane	0.687	0.657	0.715	0.480	0.505	0.495	0.590	18.3
Chloroethane	0.674	0.799	0.771	0.555	0.491	0.467	0.626	22.8
Trichlorofluoromethane	1.561	1.406	0.990	0.800	0.734	0.706	1.033	35.4
1,1,2-Trichlorotrifluoroethane	0.875	0.555	0.596	0.482	0.434	0.418	0.560	30.1
1,1-Dichloroethene	0.675	0.449	0.487	0.391	0.373	0.366	0.457	25.6
Acetone	0.155	0.095	0.089	0.096	0.078	0.076	0.098	29.5
Carbon Disulfide	1.384	1.377	1.365	0.922	0.890	0.861	1.133	23.5
Methyl tert-butyl Ether	1.030	0.970	1.041	1.014	1.017	0.987	1.010	2.6
Methyl Acetate	0.379	0.233	0.233	0.203	0.194	0.188	0.238	30
Methylene Chloride	1.248	0.938	0.796	0.528	0.461	0.433	0.734	43.8
trans-1,2-Dichloroethene	0.553	0.551	0.538	0.469	0.454	0.441	0.501	10.4
1,1-Dichloroethane	0.969	0.936	0.936	0.831	0.792	0.754	0.870	10.2
Cyclohexane	0.962	0.778	0.801	0.635	0.601	0.578	0.726	20.4
2-Butanone	0.160	0.128	0.130	0.121	0.117	0.110	0.128	13.7
Carbon Tetrachloride	0.505	0.521	0.543	0.486	0.482	0.481	0.503	5
cis-1,2-Dichloroethene	0.684	0.611	0.612	0.555	0.550	0.530	0.591	9.6
Bromochloromethane	0.375	0.335	0.355	0.309	0.297	0.278	0.325	11.3
Chloroform	1.125	1.083	1.094	0.978	0.931	0.888	1.017	9.6
1,1,1-Trichloroethane	1.018	1.057	1.028	0.932	0.876	0.839	0.959	9.3
Methylcyclohexane	0.496	0.482	0.512	0.469	0.462	0.462	0.480	4.2
Benzene	1.343	1.270	1.302	1.146	1.181	1.146	1.231	6.9
1,2-Dichloroethane	0.405	0.382	0.404	0.362	0.349	0.331	0.372	8.1
Trichloroethene	0.408	0.373	0.378	0.336	0.336	0.333	0.361	8.5
1,2-Dichloropropane	0.313	0.309	0.319	0.285	0.285	0.278	0.298	5.9
Bromodichloromethane	0.515	0.499	0.517	0.466	0.468	0.450	0.486	5.8
4-Methyl-2-Pentanone	0.157	0.155	0.165	0.161	0.172	0.165	0.162	3.8
Toluene	0.780	0.782	0.843	0.783	0.833	0.810	0.805	3.5
t-1,3-Dichloropropene	0.391	0.394	0.439	0.411	0.429	0.422	0.414	4.6
cis-1,3-Dichloropropene	0.483	0.458	0.501	0.465	0.488	0.479	0.479	3.3
1,1,2-Trichloroethane	0.243	0.260	0.264	0.245	0.254	0.243	0.252	3.6

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Calibration Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074087.D RRF010 = VD074088.D RRF020 = VD074089.D
RRF050 = VD074090.D RRF100 = VD074091.D RRF150 = VD074092.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.101	0.104	0.112	0.115	0.120	0.115	0.111	6.6
Dibromochloromethane	0.348	0.345	0.345	0.329	0.343	0.331	0.340	2.4
1,2-Dibromoethane	0.264	0.232	0.248	0.235	0.250	0.237	0.244	5
Tetrachloroethene	0.287	0.356	0.349	0.310	0.299	0.297	0.316	9.2
Chlorobenzene	1.020	1.010	1.019	0.942	0.945	0.933	0.978	4.3
Ethyl Benzene	1.628	1.633	1.707	1.676	1.712	1.691	1.675	2.2
m/p-Xylenes	0.632	0.643	0.706	0.679	0.691	0.683	0.672	4.3
o-Xylene	0.547	0.564	0.644	0.631	0.644	0.646	0.613	7.4
Styrene	0.977	1.003	1.084	1.085	1.137	1.123	1.068	6
Bromoform	0.158	0.206	0.208	0.209	0.217	0.211	0.201	10.8
Isopropylbenzene	3.122	3.053	3.332	2.593	3.350	3.407	3.143	9.6
1,1,2,2-Tetrachloroethane	0.666	0.599	0.611	0.443	0.570	0.560	0.575	13
1,3-Dichlorobenzene	1.809	1.613	1.744	1.533	1.625	1.622	1.658	6.1
1,4-Dichlorobenzene	1.836	1.674	1.734	1.551	1.595	1.574	1.661	6.6
1,2-Dichlorobenzene	1.473	1.417	1.483	1.359	1.746	1.405	1.481	9.3
1,2-Dibromo-3-Chloropropane	0.103	0.109	0.106	0.082	0.105	0.090	0.099	10.5
1,2,4-Trichlorobenzene	0.850	0.835	0.873	0.939	1.314	0.889	0.950	19.1
1,2,3-Trichlorobenzene	0.810	0.711	0.762	0.823	1.150	0.785	0.840	18.7
1,2-Dichloroethane-d4	0.630	0.524	0.512	0.392	0.352	0.329	0.457	25.8
Dibromofluoromethane	0.385	0.341	0.338	0.301	0.277	0.275	0.320	13.4
Toluene-d8	1.164	1.102	1.121	0.830	0.805	0.799	0.970	18.1
4-Bromofluorobenzene	0.418	0.398	0.403	0.403	0.392	0.390	0.401	2.5

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Calibration Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF005 = VY009983.D RRF010 = VY009984.D RRF020 = VY009985.D
RRF050 = VY009986.D RRF075 = VY009987.D RRF100 = VY009988.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.533	0.455	0.518	0.414	0.369	0.403	0.449	14.7
Chloromethane	0.332	0.317	0.343	0.326	0.331	0.329	0.330	2.5
Vinyl Chloride	0.336	0.352	0.356	0.342	0.349	0.349	0.347	2.2
Bromomethane	0.368	0.320	0.256	0.242	0.239	0.236	0.277	19.7
Chloroethane	0.274	0.260	0.218	0.211	0.206	0.208	0.230	12.9
Trichlorofluoromethane	0.991	0.903	0.843	0.813	0.803	0.810	0.861	8.6
1,1,2-Trichlorotrifluoroethane	0.592	0.581	0.541	0.536	0.531	0.537	0.553	4.7
1,1-Dichloroethene	0.566	0.560	0.531	0.522	0.520	0.523	0.537	3.9
Acetone	0.152	0.127	0.108	0.128	0.113	0.102	0.122	14.9
Carbon Disulfide	1.787	1.909	1.752	1.700	1.674	1.663	1.747	5.3
Methyl tert-butyl Ether	1.293	1.259	1.281	1.356	1.346	1.336	1.312	3
Methyl Acetate	0.561	0.411	0.329	0.345	0.333	0.322	0.384	24.2
Methylene Chloride	1.400	0.821	0.775	0.655	0.603	0.598	0.809	37.6
trans-1,2-Dichloroethene	0.620	0.623	0.583	0.588	0.589	0.577	0.597	3.3
1,1-Dichloroethane	1.073	1.017	0.921	0.940	0.939	0.903	0.966	6.8
Cyclohexane	1.061	0.935	0.867	0.856	0.875	0.852	0.908	8.9
2-Butanone	0.235	0.200	0.171	0.186	0.180	0.162	0.189	13.7
Carbon Tetrachloride	0.411	0.443	0.477	0.467	0.450	0.481	0.455	5.7
cis-1,2-Dichloroethene	0.652	0.646	0.637	0.644	0.642	0.625	0.641	1.5
Bromochloromethane	0.427	0.418	0.350	0.386	0.385	0.349	0.386	8.5
Chloroform	1.027	1.051	0.986	0.990	0.968	0.970	0.999	3.3
1,1,1-Trichloroethane	0.851	0.842	0.851	0.851	0.837	0.858	0.849	0.9
Methylcyclohexane	0.489	0.538	0.544	0.573	0.566	0.581	0.549	6.1
Benzene	1.366	1.441	1.393	1.396	1.344	1.335	1.379	2.8
1,2-Dichloroethane	0.351	0.367	0.354	0.367	0.349	0.355	0.357	2.2
Trichloroethene	0.368	0.371	0.370	0.385	0.367	0.380	0.373	2
1,2-Dichloropropane	0.337	0.351	0.327	0.331	0.325	0.315	0.331	3.7
Bromodichloromethane	0.418	0.447	0.442	0.459	0.442	0.449	0.443	3
4-Methyl-2-Pentanone	0.222	0.245	0.221	0.242	0.234	0.226	0.231	4.5
Toluene	0.753	0.845	0.839	0.872	0.829	0.846	0.830	4.9
t-1,3-Dichloropropene	0.424	0.441	0.447	0.478	0.466	0.474	0.455	4.6
cis-1,3-Dichloropropene	0.476	0.521	0.525	0.554	0.537	0.544	0.526	5.1
1,1,2-Trichloroethane	0.269	0.297	0.292	0.293	0.277	0.280	0.285	3.8

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Calibration Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF005 = VY009983.D RRF010 = VY009984.D RRF020 = VY009985.D
RRF050 = VY009986.D RRF075 = VY009987.D RRF100 = VY009988.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
2-Hexanone	0.144	0.162	0.152	0.173	0.167	0.161	0.160	6.6
Dibromochloromethane	0.292	0.316	0.334	0.347	0.329	0.334	0.325	5.9
1,2-Dibromoethane	0.261	0.269	0.276	0.284	0.272	0.275	0.273	2.8
Tetrachloroethene	0.357	0.331	0.380	0.378	0.371	0.375	0.365	5.1
Chlorobenzene	1.009	1.035	1.014	1.025	1.001	1.006	1.015	1.2
Ethyl Benzene	1.557	1.677	1.707	1.780	1.756	1.761	1.706	4.8
m/p-Xylenes	0.580	0.661	0.682	0.694	0.675	0.671	0.661	6.2
o-Xylene	0.632	0.589	0.615	0.647	0.638	0.637	0.626	3.4
Styrene	1.011	1.027	1.064	1.119	1.099	1.084	1.067	3.9
Bromoform	0.242	0.223	0.221	0.233	0.225	0.226	0.228	3.4
Isopropylbenzene	3.068	3.223	3.324	3.490	3.436	3.593	3.356	5.7
1,1,2,2-Tetrachloroethane	0.834	0.808	0.771	0.772	0.728	0.734	0.775	5.3
1,3-Dichlorobenzene	1.390	1.724	1.675	1.633	1.567	1.612	1.600	7.2
1,4-Dichlorobenzene	1.711	1.676	1.674	1.657	1.609	1.653	1.664	2
1,2-Dichlorobenzene	1.276	1.409	1.503	1.516	1.443	1.489	1.439	6.2
1,2-Dibromo-3-Chloropropane	0.130	0.127	0.119	0.126	0.121	0.123	0.124	3.3
1,2,4-Trichlorobenzene	0.630	0.823	0.793	0.883	0.875	0.909	0.819	12.4
1,2,3-Trichlorobenzene	0.566	0.744	0.703	0.790	0.785	0.806	0.732	12.2
1,2-Dichloroethane-d4	0.546	0.516	0.505	0.504	0.485	0.487	0.507	4.4
Dibromofluoromethane	0.303	0.297	0.309	0.321	0.301	0.305	0.306	2.8
Toluene-d8	1.094	1.172	1.199	1.233	1.155	1.182	1.173	4
4-Bromofluorobenzene	0.445	0.441	0.417	0.442	0.416	0.417	0.430	3.3

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date/Time: 08/16/2022 14:52

Lab File ID: VD074102.D Init. Calib. Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.473	0.349		-26.22	20
Chloromethane	0.557	0.449	0.1	-19.39	20
Vinyl Chloride	0.739	0.631		-14.61	20
Bromomethane	0.590	0.475		-19.49	20
Chloroethane	0.626	0.548		-12.46	20
Trichlorofluoromethane	1.033	1.336		29.33	20
1,1,2-Trichlorotrifluoroethane	0.560	0.490		-12.5	20
1,1-Dichloroethene	0.457	0.383		-16.19	20
Acetone	0.098	0.090		-8.16	20
Carbon Disulfide	1.133	0.816		-27.98	20
Methyl tert-butyl Ether	1.010	1.064		5.35	20
Methyl Acetate	0.238	0.215		-9.66	20
Methylene Chloride	0.734	0.550		-25.07	20
trans-1,2-Dichloroethene	0.501	0.449		-10.38	20
1,1-Dichloroethane	0.870	0.861	0.1	-1.03	20
Cyclohexane	0.726	0.590		-18.73	20
2-Butanone	0.128	0.129		0.78	20
Carbon Tetrachloride	0.503	0.511		1.59	20
cis-1,2-Dichloroethene	0.591	0.567		-4.06	20
Bromochloromethane	0.325	0.297		-8.61	20
Chloroform	1.017	1.022		0.49	20
1,1,1-Trichloroethane	0.959	0.954		-0.52	20
Methylcyclohexane	0.480	0.444		-7.5	20
Benzene	1.231	1.227		-0.32	20
1,2-Dichloroethane	0.372	0.372		0	20
Trichloroethene	0.361	0.348		-3.6	20
1,2-Dichloropropane	0.298	0.306		2.68	20
Bromodichloromethane	0.486	0.504		3.7	20
4-Methyl-2-Pentanone	0.162	0.185		14.2	20
Toluene	0.805	0.838		4.1	20
t-1,3-Dichloropropene	0.414	0.433		4.59	20
cis-1,3-Dichloropropene	0.479	0.492		2.71	20
1,1,2-Trichloroethane	0.252	0.271		7.54	20
2-Hexanone	0.111	0.129		16.22	20
Dibromochloromethane	0.340	0.362		6.47	20
1,2-Dibromoethane	0.244	0.258		5.74	20
Tetrachloroethene	0.316	0.305		-3.48	20
Chlorobenzene	0.978	0.997	0.3	1.94	20
Ethyl Benzene	1.675	1.763		5.25	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date/Time: 08/16/2022 14:52

Lab File ID: VD074102.D Init. Calib. Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.672	0.704		4.76	20
o-Xylene	0.613	0.662		7.99	20
Styrene	1.068	1.185		10.95	20
Bromoform	0.201	0.227	0.1	12.94	20
Isopropylbenzene	3.143	3.354		6.71	20
1,1,2,2-Tetrachloroethane	0.575	0.604	0.3	5.04	20
1,3-Dichlorobenzene	1.658	1.709		3.08	20
1,4-Dichlorobenzene	1.661	1.693		1.93	20
1,2-Dichlorobenzene	1.481	1.462		-1.28	20
1,2-Dibromo-3-Chloropropane	0.099	0.097		-2.02	20
1,2,4-Trichlorobenzene	0.950	0.861		-9.37	20
1,2,3-Trichlorobenzene	0.840	0.787		-6.31	20
1,2-Dichloroethane-d4	0.457	0.369		-19.26	20
Dibromofluoromethane	0.320	0.294		-8.13	20
Toluene-d8	0.970	0.799		-17.63	20
4-Bromofluorobenzene	0.401	0.401		0	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date/Time: 08/14/2022 16:28

Lab File ID: VY010002.D Init. Calib. Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.449	0.426		-5.12	20
Chloromethane	0.330	0.291	0.1	-11.82	20
Vinyl Chloride	0.347	0.321		-7.49	20
Bromomethane	0.277	0.249		-10.11	20
Chloroethane	0.230	0.203		-11.74	20
Trichlorofluoromethane	0.861	0.794		-7.78	20
1,1,2-Trichlorotrifluoroethane	0.553	0.511		-7.59	20
1,1-Dichloroethene	0.537	0.488		-9.13	20
Acetone	0.122	0.127		4.1	20
Carbon Disulfide	1.747	1.611		-7.78	20
Methyl tert-butyl Ether	1.312	1.232		-6.1	20
Methyl Acetate	0.384	0.281		-26.82	20
Methylene Chloride	0.809	0.632		-21.88	20
trans-1,2-Dichloroethene	0.597	0.576		-3.52	20
1,1-Dichloroethane	0.966	0.890	0.1	-7.87	20
Cyclohexane	0.908	0.784		-13.66	20
2-Butanone	0.189	0.160		-15.34	20
Carbon Tetrachloride	0.455	0.477		4.84	20
cis-1,2-Dichloroethene	0.641	0.622		-2.96	20
Bromochloromethane	0.386	0.344		-10.88	20
Chloroform	0.999	0.970		-2.9	20
1,1,1-Trichloroethane	0.849	0.841		-0.94	20
Methylcyclohexane	0.549	0.554		0.91	20
Benzene	1.379	1.358		-1.52	20
1,2-Dichloroethane	0.357	0.354		-0.84	20
Trichloroethene	0.373	0.381		2.14	20
1,2-Dichloropropane	0.331	0.313		-5.44	20
Bromodichloromethane	0.443	0.447		0.9	20
4-Methyl-2-Pentanone	0.231	0.199		-13.85	20
Toluene	0.830	0.856		3.13	20
t-1,3-Dichloropropene	0.455	0.449		-1.32	20
cis-1,3-Dichloropropene	0.526	0.533		1.33	20
1,1,2-Trichloroethane	0.285	0.280		-1.75	20
2-Hexanone	0.160	0.148		-7.5	20
Dibromochloromethane	0.325	0.335		3.08	20
1,2-Dibromoethane	0.273	0.276		1.1	20
Tetrachloroethene	0.365	0.380		4.11	20
Chlorobenzene	1.015	1.031	0.3	1.58	20
Ethyl Benzene	1.706	1.773		3.93	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date/Time: 08/14/2022 16:28

Lab File ID: VY010002.D Init. Calib. Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.661	0.693		4.84	20
o-Xylene	0.626	0.652		4.15	20
Styrene	1.067	1.125		5.44	20
Bromoform	0.228	0.229	0.1	0.44	20
Isopropylbenzene	3.356	3.485		3.84	20
1,1,2,2-Tetrachloroethane	0.775	0.706	0.3	-8.9	20
1,3-Dichlorobenzene	1.600	1.625		1.56	20
1,4-Dichlorobenzene	1.664	1.675		0.66	20
1,2-Dichlorobenzene	1.439	1.483		3.06	20
1,2-Dibromo-3-Chloropropane	0.124	0.106		-14.52	20
1,2,4-Trichlorobenzene	0.819	0.864		5.49	20
1,2,3-Trichlorobenzene	0.732	0.774		5.74	20
1,2-Dichloroethane-d4	0.507	0.486		-4.14	20
Dibromofluoromethane	0.306	0.322		5.23	20
Toluene-d8	1.173	1.234		5.2	20
4-Bromofluorobenzene	0.430	0.441		2.56	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027953.D	50	08/13/22 13:41	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	845	J	196	2430	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.0		50 - 150	90%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027926.D	1	08/12/22 18:09	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	17.0	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	17.2		50 - 150	86%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027955.D	50	08/13/22 14:54	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	719	J	200	2490	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	15.8		50 - 150	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027938.D	1	08/13/22 2:46	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	11.0	J	4.00	47.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.5		50 - 150	67%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027957.D	50	08/13/22 16:06	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	715	J	189	2350	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.0		50 - 150	95%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027945.D	50	08/13/22 7:38	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	828	J	186	2320	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.1		50 - 150	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027948.D	50	08/13/22 9:26	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	771	J	189	2350	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	15.1		50 - 150	75%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027949.D	50	08/13/22 10:03	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	853	J	201	2500	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.7		50 - 150	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027950.D	50	08/13/22 10:39	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	698	J	186	2320	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.1		50 - 150	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	4 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027934.D	1	08/13/22 0:19	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	13.0	J	4.00	47.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.8		50 - 150	69%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

EPA SAMPLE NO.	S1 AAA-TFT	S2	S3	S4	TOT OUT
VBF0812S1	87				0
VBF0812S2	104				0
BSF0812S1	113				0
SB19	86				0
SB11	69				0
SB15	67				0
SB17	91				0
SB17MS	103				0
SB17MSD	111				0
SB13	75				0
SB12	93				0
SB14	96				0
SB18	90				0
SB20	79				0
SB16	95				0

	QC LIMITS
AAA-TFT	For Water : 50-150 For Soil : 50-150

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB17MS **Datafile:** FB027946.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	9317	828	8391	81%		50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB17MSD **Datafile:** FB027947.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	9298	828	9408	92%		50-150

MS/MSD % Recovery RPD : 12.8

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATI

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Matrix Spike - EPA Sample No : BSF0812S1 **Datafile:** FB027922.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
GRO	180	0	171	95	50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0812S2

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FB027921.D Lab Sample ID: VBF0812S2

Date Analyzed: 08/12/22 Time Analyzed: 15:04

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB17	N4189-11	FB027945.D	08/13/22
SB17MS	N4189-11MS	FB027946.D	08/13/22
SB17MSD	N4189-11MSD	FB027947.D	08/13/22
SB13	N4189-13	FB027948.D	08/13/22
SB12	N4189-15	FB027949.D	08/13/22
SB14	N4189-17	FB027950.D	08/13/22
SB18	N4189-01	FB027953.D	08/13/22
SB20	N4189-05	FB027955.D	08/13/22
SB16	N4189-09	FB027957.D	08/13/22

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0812S1

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FB027920.D Lab Sample ID: VBF0812S1

Date Analyzed: 08/12/22 Time Analyzed: 14:27

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
BSF0812S1	BSF0812S1	FB027922.D	08/12/22
SB19	N4189-03	FB027926.D	08/12/22
SB11	N4189-19	FB027934.D	08/13/22
SB15	N4189-07	FB027938.D	08/13/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0812S1	SDG No.:	N4189
Lab Sample ID:	VBF0812S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027920.D	1	08/12/22 14:27	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	45.0	U	4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	17.4		50 - 150	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0812S2	SDG No.:	N4189
Lab Sample ID:	VBF0812S2	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027921.D	50	08/12/22 15:04	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	2250	U	181	2250	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	20.7		50 - 150	104%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	BSF0812S1	SDG No.:	N4189
Lab Sample ID:	BSF0812S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027922.D	1	08/12/22 15:41	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	171		4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	22.6		50 - 150	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17MS	SDG No.:	N4189
Lab Sample ID:	N4189-11MS	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027946.D	50	08/13/22 8:14	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	8390		187	2330	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	20.7		50 - 150	103%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17MSD	SDG No.:	N4189
Lab Sample ID:	N4189-11MSD	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027947.D	50	08/13/22 8:50	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	9410		187	2330	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	22.1		50 - 150	111%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FB080922		Test : Gasoline Range Organics	
Concentration (PPB)	**Area Count**	**Reference Factor**	**File ID**
45	797213	17716	FB027882.D
90	1841782	20464	FB027883.D
180	3821591	21231	FB027884.D
450	8535867	18969	FB027885.D
900	19847181	22052	FB027886.D

AVG RF : 20086 **% RSD : 8.689** **AVG RT : 8.7968**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027919.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3419331	18996	20086	5.427

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027930.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3399198	18884	20086	5.984

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027941.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3352275	18624	20086	7.279

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027952.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3173464	17630	20086	12.227

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027958.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3551690	19732	20086	1.762

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** FID_B

GC Column: RTX-502.2 **ID:** 0.53 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **8.7968**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 13:49	FB027919.D	8.791	
VBF0812S1	VBF0812S1	12 Aug 2022 14:27	FB027920.D	8.794	
VBF0812S2	VBF0812S2	12 Aug 2022 15:04	FB027921.D	8.795	
BSF0812S1	BSF0812S1	12 Aug 2022 15:41	FB027922.D	8.796	
SB19	N4189-03	12 Aug 2022 18:09	FB027926.D	8.797	
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 20:38	FB027930.D	8.796	
SB11	N4189-19	13 Aug 2022 00:19	FB027934.D	8.792	
SB15	N4189-07	13 Aug 2022 2:46	FB027938.D	8.792	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 4:36	FB027941.D	8.790	
SB17	N4189-11	13 Aug 2022 7:38	FB027945.D	8.785	
SB17MS	N4189-11MS	13 Aug 2022 8:14	FB027946.D	8.786	
SB17MSD	N4189-11MSD	13 Aug 2022 8:50	FB027947.D	8.786	
SB13	N4189-13	13 Aug 2022 9:26	FB027948.D	8.786	
SB12	N4189-15	13 Aug 2022 10:03	FB027949.D	8.787	
SB14	N4189-17	13 Aug 2022 10:39	FB027950.D	8.787	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 11:52	FB027952.D	8.788	
SB18	N4189-01	13 Aug 2022 13:41	FB027953.D	8.788	
SB20	N4189-05	13 Aug 2022 14:54	FB027955.D	8.789	
SB16	N4189-09	13 Aug 2022 16:06	FB027957.D	8.788	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 16:43	FB027958.D	8.790	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	8.6968	8.8968

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-01	SB18	SOIL	Phenanthrene	340.000		91.5	190	ug/Kg
N4189-01	SB18	SOIL	Fluoranthene	360.000		87.3	190	ug/Kg
N4189-01	SB18	SOIL	Pyrene	420.000		81.2	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)anthracene	160.000	J	95	190	ug/Kg
N4189-01	SB18	SOIL	Chrysene	160.000	J	93.6	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(b)fluoranthene	180.000	J	75.5	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)pyrene	170.000	J	74.1	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(g,h,i)perylene	130.000	J	110	190	ug/Kg
			Total Svoc :	**1,920.00**				
			Total Concentration:	**1,920.00**				
Client ID : SB20								
N4189-05	SB20	SOIL	Phenanthrene	180.000	J	94	190	ug/Kg
N4189-05	SB20	SOIL	Fluoranthene	260.000		89.7	190	ug/Kg
N4189-05	SB20	SOIL	Pyrene	220.000		83.4	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)anthracene	150.000	J	97.6	190	ug/Kg
N4189-05	SB20	SOIL	Chrysene	150.000	J	96.1	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(b)fluoranthene	190.000		77.6	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)pyrene	150.000	J	76.1	190	ug/Kg
			Total Svoc :	**1,300.00**				
			Total Concentration:	**1,300.00**				
Client ID : SB17								
N4189-11	SB17	SOIL	Fluoranthene	190.000		82.6	180	ug/Kg
N4189-11	SB17	SOIL	Pyrene	140.000	J	76.8	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)anthracene	94.100	J	89.8	180	ug/Kg
N4189-11	SB17	SOIL	Chrysene	98.600	J	88.5	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(b)fluoranthene	150.000	J	71.4	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)pyrene	110.000	J	70.1	180	ug/Kg
			Total Svoc :	**782.70**				
			Total Concentration:	**782.70**				
Client ID : SB11								
N4189-19	SB11	SOIL	Phenanthrene	180.000		87	180	ug/Kg
N4189-19	SB11	SOIL	Fluoranthene	470.000		83	180	ug/Kg
N4189-19	SB11	SOIL	Pyrene	380.000		77.2	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)anthracene	230.000		90.3	180	ug/Kg
N4189-19	SB11	SOIL	Chrysene	260.000		89	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(b)fluoranthene	430.000		71.8	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(k)fluoranthene	120.000	J	76.6	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)pyrene	340.000		70.5	180	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4189-19	SB11	SOIL	Indeno(1,2,3-cd)pyrene	180.000		110	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(g,h,i)perylene	230.000		100	180	ug/Kg
			Total Svoc :	**2,820.00**				
			Total Concentration:	**2,820.00**				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.8
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129872.D	1	08/13/22 08:50	08/18/22 13:07	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	80.9	190	ug/Kg
208-96-8	Acenaphthylene	190	U	75.2	190	ug/Kg
83-32-9	Acenaphthene	190	U	86.3	190	ug/Kg
86-73-7	Fluorene	190	U	86.2	190	ug/Kg
85-01-8	Phenanthrene	340		91.5	190	ug/Kg
120-12-7	Anthracene	190	U	91.9	190	ug/Kg
206-44-0	Fluoranthene	360		87.3	190	ug/Kg
129-00-0	Pyrene	420		81.2	190	ug/Kg
56-55-3	Benzo(a)anthracene	160	J	95.0	190	ug/Kg
218-01-9	Chrysene	160	J	93.6	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	J	75.5	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	80.5	190	ug/Kg
50-32-8	Benzo(a)pyrene	170	J	74.1	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	130	J	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	30.5		27 - 109	31%	SPK: 100
321-60-8	2-Fluorobiphenyl	31.9		30 - 103	32%	SPK: 100
1718-51-0	Terphenyl-d14	34.1		21 - 107	34%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	134000	6.792			
1146-65-2	Naphthalene-d8	532000	8.075			
15067-26-2	Acenaphthene-d10	279000	9.833			
1517-22-2	Phenanthrene-d10	432000	11.321			
1719-03-5	Chrysene-d12	213000	13.968			
1520-96-3	Perylene-d12	265000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.8
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129872.D	1	08/13/22 08:50	08/18/22 13:07	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129873.D	1	08/13/22 08:50	08/18/22 13:39	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	80.7	190	ug/Kg
208-96-8	Acenaphthylene	190	U	75.0	190	ug/Kg
83-32-9	Acenaphthene	190	U	86.2	190	ug/Kg
86-73-7	Fluorene	190	U	86.1	190	ug/Kg
85-01-8	Phenanthrene	190	U	91.3	190	ug/Kg
120-12-7	Anthracene	190	U	91.7	190	ug/Kg
206-44-0	Fluoranthene	190	U	87.1	190	ug/Kg
129-00-0	Pyrene	190	U	81.0	190	ug/Kg
56-55-3	Benzo(a)anthracene	190	U	94.8	190	ug/Kg
218-01-9	Chrysene	190	U	93.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190	U	75.3	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	80.4	190	ug/Kg
50-32-8	Benzo(a)pyrene	190	U	73.9	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	62.5		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.4		30 - 103	55%	SPK: 100
1718-51-0	Terphenyl-d14	61.3		21 - 107	61%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	129000	6.792			
1146-65-2	Naphthalene-d8	504000	8.075			
15067-26-2	Acenaphthene-d10	272000	9.827			
1517-22-2	Phenanthrene-d10	452000	11.321			
1719-03-5	Chrysene-d12	236000	13.968			
1520-96-3	Perylene-d12	264000	15.427			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129873.D	1	08/13/22 08:50	08/18/22 13:39	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.1
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129839.D	1	08/13/22 08:50	08/17/22 11:53	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	83.1	190	ug/Kg
208-96-8	Acenaphthylene	190	U	77.2	190	ug/Kg
83-32-9	Acenaphthene	190	U	88.7	190	ug/Kg
86-73-7	Fluorene	190	U	88.6	190	ug/Kg
85-01-8	Phenanthrene	180	J	94.0	190	ug/Kg
120-12-7	Anthracene	190	U	94.4	190	ug/Kg
206-44-0	Fluoranthene	260		89.7	190	ug/Kg
129-00-0	Pyrene	220		83.4	190	ug/Kg
56-55-3	Benzo(a)anthracene	150	J	97.6	190	ug/Kg
218-01-9	Chrysene	150	J	96.1	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190		77.6	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	82.7	190	ug/Kg
50-32-8	Benzo(a)pyrene	150	J	76.1	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	50.8		27 - 109	51%	SPK: 100
321-60-8	2-Fluorobiphenyl	52.2		30 - 103	52%	SPK: 100
1718-51-0	Terphenyl-d14	36.4		21 - 107	36%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	140000	6.822			
1146-65-2	Naphthalene-d8	540000	8.104			
15067-26-2	Acenaphthene-d10	250000	9.863			
1517-22-2	Phenanthrene-d10	314000	11.351			
1719-03-5	Chrysene-d12	264000	14.004			
1520-96-3	Perylene-d12	220000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.1
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129839.D	1	08/13/22 08:50	08/17/22 11:53	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129875.D	1	08/13/22 08:50	08/18/22 14:44	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.7	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.3	180	ug/Kg
83-32-9	Acenaphthene	180	U	81.9	180	ug/Kg
86-73-7	Fluorene	180	U	81.8	180	ug/Kg
85-01-8	Phenanthrene	180	U	86.8	180	ug/Kg
120-12-7	Anthracene	180	U	87.2	180	ug/Kg
206-44-0	Fluoranthene	180	U	82.8	180	ug/Kg
129-00-0	Pyrene	180	U	77.0	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	90.1	180	ug/Kg
218-01-9	Chrysene	180	U	88.7	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	71.6	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.4	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	70.3	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	100	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	47.7		27 - 109	48%	SPK: 100
321-60-8	2-Fluorobiphenyl	50.4		30 - 103	50%	SPK: 100
1718-51-0	Terphenyl-d14	51.3		21 - 107	51%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	128000	6.793			
1146-65-2	Naphthalene-d8	517000	8.075			
15067-26-2	Acenaphthene-d10	269000	9.834			
1517-22-2	Phenanthrene-d10	409000	11.322			
1719-03-5	Chrysene-d12	217000	13.969			
1520-96-3	Perylene-d12	258000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129875.D	1	08/13/22 08:50	08/18/22 14:44	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129862.D	1	08/13/22 08:50	08/18/22 00:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.3	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.8	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.6	180	ug/Kg
86-73-7	Fluorene	180	U	83.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.6	180	ug/Kg
120-12-7	Anthracene	180	U	89.0	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.6	180	ug/Kg
129-00-0	Pyrene	180	U	78.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.0	180	ug/Kg
218-01-9	Chrysene	180	U	90.6	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	25.8	*	27 - 109	26%	SPK: 100
321-60-8	2-Fluorobiphenyl	26.9	*	30 - 103	27%	SPK: 100
1718-51-0	Terphenyl-d14	28.6		21 - 107	29%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	529000	8.092			
15067-26-2	Acenaphthene-d10	268000	9.845			
1517-22-2	Phenanthrene-d10	429000	11.339			
1719-03-5	Chrysene-d12	219000	13.986			
1520-96-3	Perylene-d12	245000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129862.D	1	08/13/22 08:50	08/18/22 00:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129874.D	1	08/13/22 08:50	08/18/22 14:12	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.3	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.8	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.6	180	ug/Kg
86-73-7	Fluorene	180	U	83.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.6	180	ug/Kg
120-12-7	Anthracene	180	U	89.0	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.6	180	ug/Kg
129-00-0	Pyrene	180	U	78.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.0	180	ug/Kg
218-01-9	Chrysene	180	U	90.6	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	25.8	*	27 - 109	26%	SPK: 100
321-60-8	2-Fluorobiphenyl	26.7	*	30 - 103	27%	SPK: 100
1718-51-0	Terphenyl-d14	30.9		21 - 107	31%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	129000	6.793			
1146-65-2	Naphthalene-d8	521000	8.075			
15067-26-2	Acenaphthene-d10	274000	9.828			
1517-22-2	Phenanthrene-d10	455000	11.322			
1719-03-5	Chrysene-d12	220000	13.969			
1520-96-3	Perylene-d12	250000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129874.D	1	08/13/22 08:50	08/18/22 14:12	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.4
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129843.D	1	08/13/22 08:50	08/17/22 13:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.5	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.1	180	ug/Kg
83-32-9	Acenaphthene	180	U	81.6	180	ug/Kg
86-73-7	Fluorene	180	U	81.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	86.5	180	ug/Kg
120-12-7	Anthracene	180	U	86.9	180	ug/Kg
206-44-0	Fluoranthene	190		82.6	180	ug/Kg
129-00-0	Pyrene	140	J	76.8	180	ug/Kg
56-55-3	Benzo(a)anthracene	94.1	J	89.8	180	ug/Kg
218-01-9	Chrysene	98.6	J	88.5	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	150	J	71.4	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.2	180	ug/Kg
50-32-8	Benzo(a)pyrene	110	J	70.1	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	100	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	58.0		27 - 109	58%	SPK: 100
321-60-8	2-Fluorobiphenyl	64.1		30 - 103	64%	SPK: 100
1718-51-0	Terphenyl-d14	46.3		21 - 107	46%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	140000	6.822			
1146-65-2	Naphthalene-d8	536000	8.104			
15067-26-2	Acenaphthene-d10	249000	9.863			
1517-22-2	Phenanthrene-d10	309000	11.351			
1719-03-5	Chrysene-d12	270000	14.004			
1520-96-3	Perylene-d12	229000	15.474			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.4
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129843.D	1	08/13/22 08:50	08/17/22 13:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129870.D	1	08/13/22 08:50	08/18/22 12:04	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.4	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.9	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.7	180	ug/Kg
86-73-7	Fluorene	180	U	83.6	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.7	180	ug/Kg
120-12-7	Anthracene	180	U	89.1	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.7	180	ug/Kg
129-00-0	Pyrene	180	U	78.7	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.1	180	ug/Kg
218-01-9	Chrysene	180	U	90.7	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.2	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.1	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	38.4		27 - 109	38%	SPK: 100
321-60-8	2-Fluorobiphenyl	40.5		30 - 103	40%	SPK: 100
1718-51-0	Terphenyl-d14	47.1		21 - 107	47%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	137000	6.793			
1146-65-2	Naphthalene-d8	556000	8.075			
15067-26-2	Acenaphthene-d10	294000	9.828			
1517-22-2	Phenanthrene-d10	522000	11.322			
1719-03-5	Chrysene-d12	297000	13.969			
1520-96-3	Perylene-d12	245000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129870.D	1	08/13/22 08:50	08/18/22 12:04	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.5
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129863.D	1	08/13/22 08:50	08/18/22 01:29	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	83.3	190	ug/Kg
208-96-8	Acenaphthylene	190	U	77.4	190	ug/Kg
83-32-9	Acenaphthene	190	U	88.9	190	ug/Kg
86-73-7	Fluorene	190	U	88.8	190	ug/Kg
85-01-8	Phenanthrene	190	U	94.2	190	ug/Kg
120-12-7	Anthracene	190	U	94.7	190	ug/Kg
206-44-0	Fluoranthene	190	U	90.0	190	ug/Kg
129-00-0	Pyrene	190	U	83.6	190	ug/Kg
56-55-3	Benzo(a)anthracene	190	U	97.9	190	ug/Kg
218-01-9	Chrysene	190	U	96.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190	U	77.8	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	83.0	190	ug/Kg
50-32-8	Benzo(a)pyrene	190	U	76.3	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	69.1		27 - 109	69%	SPK: 100
321-60-8	2-Fluorobiphenyl	74.6		30 - 103	75%	SPK: 100
1718-51-0	Terphenyl-d14	49.5		21 - 107	49%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	480000	8.092			
15067-26-2	Acenaphthene-d10	210000	9.845			
1517-22-2	Phenanthrene-d10	279000	11.339			
1719-03-5	Chrysene-d12	260000	13.986			
1520-96-3	Perylene-d12	256000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.5
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129863.D	1	08/13/22 08:50	08/18/22 01:29	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129859.D	1	08/13/22 08:50	08/17/22 23:23	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	77.0	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.6	180	ug/Kg
83-32-9	Acenaphthene	180	U	82.3	180	ug/Kg
86-73-7	Fluorene	180	U	82.2	180	ug/Kg
85-01-8	Phenanthrene	180	U	87.2	180	ug/Kg
120-12-7	Anthracene	180	U	87.6	180	ug/Kg
206-44-0	Fluoranthene	180	U	83.2	180	ug/Kg
129-00-0	Pyrene	180	U	77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	90.5	180	ug/Kg
218-01-9	Chrysene	180	U	89.1	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	71.9	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.7	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	62.4		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	62.7		30 - 103	63%	SPK: 100
1718-51-0	Terphenyl-d14	64.5		21 - 107	64%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	526000	8.092			
15067-26-2	Acenaphthene-d10	281000	9.845			
1517-22-2	Phenanthrene-d10	480000	11.339			
1719-03-5	Chrysene-d12	308000	13.986			
1520-96-3	Perylene-d12	225000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129859.D	1	08/13/22 08:50	08/17/22 23:23	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129864.D	1	08/13/22 08:50	08/18/22 02:01	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.9	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.5	180	ug/Kg
83-32-9	Acenaphthene	180	U	82.1	180	ug/Kg
86-73-7	Fluorene	180	U	82.0	180	ug/Kg
85-01-8	Phenanthrene	180		87.0	180	ug/Kg
120-12-7	Anthracene	180	U	87.4	180	ug/Kg
206-44-0	Fluoranthene	470		83.0	180	ug/Kg
129-00-0	Pyrene	380		77.2	180	ug/Kg
56-55-3	Benzo(a)anthracene	230		90.3	180	ug/Kg
218-01-9	Chrysene	260		89.0	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	430		71.8	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	120	J	76.6	180	ug/Kg
50-32-8	Benzo(a)pyrene	340		70.5	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	230		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	68.0		27 - 109	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	73.7		30 - 103	74%	SPK: 100
1718-51-0	Terphenyl-d14	58.0		21 - 107	58%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	127000	6.81			
1146-65-2	Naphthalene-d8	494000	8.092			
15067-26-2	Acenaphthene-d10	234000	9.845			
1517-22-2	Phenanthrene-d10	329000	11.339			
1719-03-5	Chrysene-d12	260000	13.992			
1520-96-3	Perylene-d12	207000	15.463			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129864.D	1	08/13/22 08:50	08/18/22 02:01	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%) Low	Limits (%) High
N4189-01	SB18	Nitrobenzene-d5	100	30.5	31		27	109
		2-Fluorobiphenyl	100	31.9	32		30	103
		Terphenyl-d14	100	34.1	34		21	107
N4189-03	SB19	Nitrobenzene-d5	100	62.5	62		27	109
		2-Fluorobiphenyl	100	55.4	55		30	103
		Terphenyl-d14	100	61.3	61		21	107
N4189-05	SB20	Nitrobenzene-d5	100	50.8	51		27	109
		2-Fluorobiphenyl	100	52.2	52		30	103
		Terphenyl-d14	100	36.4	36		21	107
N4189-07	SB15	Nitrobenzene-d5	100	47.7	48		27	109
		2-Fluorobiphenyl	100	50.4	50		30	103
		Terphenyl-d14	100	51.3	51		21	107
N4189-09	SB16	Nitrobenzene-d5	100	25.8	26	*	27	109
		2-Fluorobiphenyl	100	26.9	27	*	30	103
		Terphenyl-d14	100	28.6	29		21	107
N4189-09RE	SB16RE	Nitrobenzene-d5	100	25.8	26	*	27	109
		2-Fluorobiphenyl	100	26.7	27	*	30	103
		Terphenyl-d14	100	30.9	31		21	107
N4189-11	SB17	Nitrobenzene-d5	100	58.0	58		27	109
		2-Fluorobiphenyl	100	64.1	64		30	103
		Terphenyl-d14	100	46.3	46		21	107
N4189-13	SB13	Nitrobenzene-d5	100	38.4	38		27	109
		2-Fluorobiphenyl	100	40.5	40		30	103
		Terphenyl-d14	100	47.1	47		21	107
N4189-15	SB12	Nitrobenzene-d5	100	69.1	69		27	109
		2-Fluorobiphenyl	100	74.6	75		30	103
		Terphenyl-d14	100	49.5	49		21	107
N4189-17	SB14	Nitrobenzene-d5	100	62.4	62		27	109
		2-Fluorobiphenyl	100	62.7	63		30	103
		Terphenyl-d14	100	64.5	64		21	107
N4189-17MS	SB14MS	Nitrobenzene-d5	100	80.5	81		27	109
		2-Fluorobiphenyl	100	80.2	80		30	103
		Terphenyl-d14	100	91.2	91		21	107
N4189-17MSD	SB14MSD	Nitrobenzene-d5	100	80.2	80		27	109
		2-Fluorobiphenyl	100	82.1	82		30	103
		Terphenyl-d14	100	90.7	91		21	107
N4189-19	SB11	Nitrobenzene-d5	100	68.0	68		27	109
		2-Fluorobiphenyl	100	73.7	74		30	103
		Terphenyl-d14	100	58.0	58		21	107
PB146986BL	PB146986BL	Nitrobenzene-d5	100	79.6	80		27	109
		2-Fluorobiphenyl	100	79.9	80		30	103
		Terphenyl-d14	100	69.3	69		21	107
PB146986BS	PB146986BS	Nitrobenzene-d5	100	80.2	80		27	109
		2-Fluorobiphenyl	100	78.8	79		30	103
		Terphenyl-d14	100	91.7	92		21	107

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4189-17MS		**Client Sample ID: SB14MS**						**DataFile: BF129860.D**			
Naphthalene	1700	0	1600	ug/Kg	94				72	110	
Acenaphthylene	1700	0	1600	ug/Kg	94				79	118	
Acenaphthene	1700	0	1600	ug/Kg	94				70	121	
Fluorene	1700	0	1600	ug/Kg	94				68	116	
Phenanthrene	1700	0	1600	ug/Kg	94				72	113	
Anthracene	1700	0	1600	ug/Kg	94				62	124	
Fluoranthene	1700	0	1500	ug/Kg	88				59	125	
Pyrene	1700	0	1800	ug/Kg	106				52	128	
Benzo(a)anthracene	1700	0	1600	ug/Kg	94				71	114	
Chrysene	1700	0	1600	ug/Kg	94				57	121	
Benzo(b)fluoranthene	1700	0	1500	ug/Kg	88				67	121	
Benzo(k)fluoranthene	1700	0	1500	ug/Kg	88				74	114	
Benzo(a)pyrene	1700	0	1700	ug/Kg	100				70	142	
Indeno(1,2,3-cd)pyrene	1700	0	1800	ug/Kg	106				61	125	
Dibenz(a,h)anthracene	1700	0	1900	ug/Kg	112				67	130	
Benzo(g,h,i)perylene	1700	0	2000	ug/Kg	118				53	140	

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4189-17MSD		**Client Sample ID: SB14MSD**						**DataFile: BF129861.D**			
Naphthalene	1700	0	1600	ug/Kg	94		0		72	110	20
Acenaphthylene	1700	0	1600	ug/Kg	94		0		79	118	20
Acenaphthene	1700	0	1600	ug/Kg	94		0		70	121	20
Fluorene	1700	0	1600	ug/Kg	94		0		68	116	20
Phenanthrene	1700	0	1600	ug/Kg	94		0		72	113	20
Anthracene	1700	0	1600	ug/Kg	94		0		62	124	20
Fluoranthene	1700	0	1400	ug/Kg	82		7		59	125	20
Pyrene	1700	0	1800	ug/Kg	106		0		52	128	20
Benzo(a)anthracene	1700	0	1600	ug/Kg	94		0		71	114	20
Chrysene	1700	0	1600	ug/Kg	94		0		57	121	20
Benzo(b)fluoranthene	1700	0	1500	ug/Kg	88		0		67	121	20
Benzo(k)fluoranthene	1700	0	1500	ug/Kg	88		0		74	114	20
Benzo(a)pyrene	1700	0	1700	ug/Kg	100		0		70	142	20
Indeno(1,2,3-cd)pyrene	1700	0	1900	ug/Kg	112		6		61	125	20
Dibenz(a,h)anthracene	1700	0	1900	ug/Kg	112		0		67	130	20
Benzo(g,h,i)perylene	1700	0	2000	ug/Kg	118		0		53	140	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E **DataFile:** BF129969.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB146986BS	Naphthalene	1700	1300	ug/Kg	76				62	100	
	Acenaphthylene	1700	1300	ug/Kg	76				63	101	
	Acenaphthene	1700	1300	ug/Kg	76				57	104	
	Fluorene	1700	1300	ug/Kg	76				61	101	
	Phenanthrene	1700	1300	ug/Kg	76				59	103	
	Anthracene	1700	1400	ug/Kg	82				61	105	
	Fluoranthene	1700	1300	ug/Kg	76				57	107	
	Pyrene	1700	1500	ug/Kg	88				59	103	
	Benzo(a)anthracene	1700	1300	ug/Kg	76				60	102	
	Chrysene	1700	1300	ug/Kg	76				59	101	
	Benzo(b)fluoranthene	1700	1300	ug/Kg	76				62	109	
	Benzo(k)fluoranthene	1700	1400	ug/Kg	82				62	109	
	Benzo(a)pyrene	1700	1500	ug/Kg	88				63	103	
	Indeno(1,2,3-cd)pyrene	1700	1700	ug/Kg	100				63	101	
	Dibenz(a,h)anthracene	1700	1800	ug/Kg	106				61	112	
	Benzo(g,h,i)perylene	1700	1900	ug/Kg	112				57	116	

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146986BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129869.D Lab Sample ID: PB146986BL

Instrument ID: BNA_F Date Extracted: 08/13/2022

Matrix: (soil/water) SOIL Date Analyzed: 08/18/2022

Level: (low/med) LOW Time Analyzed: 11:22

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB13	N4189-13	BF129870.D	08/18/2022
SB18	N4189-01	BF129872.D	08/18/2022
SB19	N4189-03	BF129873.D	08/18/2022
SB15	N4189-07	BF129875.D	08/18/2022
PB146986BS	PB146986BS	BF129969.D	08/24/2022
SB20	N4189-05	BF129839.D	08/17/2022
SB16	N4189-09	BF129862.D	08/18/2022
SB17	N4189-11	BF129843.D	08/17/2022
SB14	N4189-17	BF129859.D	08/17/2022
SB14MS	N4189-17MS	BF129860.D	08/17/2022
SB12	N4189-15	BF129863.D	08/18/2022
SB14MSD	N4189-17MSD	BF129861.D	08/18/2022
SB11	N4189-19	BF129864.D	08/18/2022

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129760.D DFTPP Injection Date: 08/14/2022

Instrument ID: BNA_F DFTPP Injection Time: 13:35

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	35.6
68	Less than 2.0% of mass 69	0.6 (1.7) 1
69	Mass 69 relative abundance	36.3
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	50.7
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 60.0% of mass 198	30.4
365	Greater than 1% of mass 198	4
441	Present, but less than mass 443	16.1
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.9 (18.9) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDICC005	SSTDICC005	BF129761.D	08/14/2022	14:06
SSTDICC010	SSTDICC010	BF129762.D	08/14/2022	14:37
SSTDICC020	SSTDICC020	BF129763.D	08/14/2022	15:08
SSTDICCC040	SSTDICCC040	BF129764.D	08/14/2022	15:41
SSTDICC050	SSTDICC050	BF129765.D	08/14/2022	16:12
SSTDICC060	SSTDICC060	BF129766.D	08/14/2022	16:43
SSTDICC080	SSTDICC080	BF129767.D	08/14/2022	17:15

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129834.D DFTPP Injection Date: 08/17/2022

Instrument ID: BNA_F DFTPP Injection Time: 09:11

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	36.9
68	Less than 2.0% of mass 69	0.7 (1.9) 1
69	Mass 69 relative abundance	37.4
70	Less than 2.0% of mass 69	0.2 (0.6) 1
127	10.0 - 80.0% of mass 198	52.2
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 60.0% of mass 198	29.1
365	Greater than 1% of mass 198	3.8
441	Present, but less than mass 443	15.5
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.7 (18.7) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129835.D	08/17/2022	09:42
SB20	N4189-05	BF129839.D	08/17/2022	11:53
SB17	N4189-11	BF129843.D	08/17/2022	13:58

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129845.D DFTPP Injection Date: 08/17/2022

Instrument ID: BNA_F DFTPP Injection Time: 15:45

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.8 (1.9) 1
69	Mass 69 relative abundance	39.9
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	53.5
197	Less than 2.0% of mass 198	0.1
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	27.6
365	Greater than 1% of mass 198	3.7
441	Present, but less than mass 443	13.3
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	16.1 (19.7) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129846.D	08/17/2022	16:17
SB14	N4189-17	BF129859.D	08/17/2022	23:23
SB14MS	N4189-17MS	BF129860.D	08/17/2022	23:55
SB14MSD	N4189-17MSD	BF129861.D	08/18/2022	00:26
SB16	N4189-09	BF129862.D	08/18/2022	00:58
SB12	N4189-15	BF129863.D	08/18/2022	01:29
SB11	N4189-19	BF129864.D	08/18/2022	02:01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129867.D DFTPP Injection Date: 08/18/2022

Instrument ID: BNA_F DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	39.8
68	Less than 2.0% of mass 69	0.7 (1.7) 1
69	Mass 69 relative abundance	40.2
70	Less than 2.0% of mass 69	0.1 (0.3) 1
127	10.0 - 80.0% of mass 198	53.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	27.6
365	Greater than 1% of mass 198	3.7
441	Present, but less than mass 443	12.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	15 (18.5) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129868.D	08/18/2022	10:50
PB146986BL	PB146986BL	BF129869.D	08/18/2022	11:22
SB13	N4189-13	BF129870.D	08/18/2022	12:04
SB18	N4189-01	BF129872.D	08/18/2022	13:07
SB19	N4189-03	BF129873.D	08/18/2022	13:39
SB16RE	N4189-09RE	BF129874.D	08/18/2022	14:12
SB15	N4189-07	BF129875.D	08/18/2022	14:44

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129966.D DFTPP Injection Date: 08/24/2022

Instrument ID: BNA_F DFTPP Injection Time: 09:21

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	38.7
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	54
197	Less than 2.0% of mass 198	0.4
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	29.6
365	Greater than 1% of mass 198	4.4
441	Present, but less than mass 443	14.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	17.2 (18.6) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129967.D	08/24/2022	11:09
PB146986BS	PB146986BS	BF129969.D	08/24/2022	12:18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129835.D Time Analyzed: 09:42

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	158646	6.822	622310	8.11	340878	9.87
	UPPER LIMIT	317292	7.322	1244620	8.61	681756	10.369
	LOWER LIMIT	79323	6.322	311155	7.61	170439	9.369
	EPA SAMPLE NO.						
01	SB20	140155	6.82	539866	8.10	249649	9.86
02	SB17	139583	6.82	536295	8.10	248664	9.86

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129835.D Time Analyzed: 09:42

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	600593	11.357	387109	14.01	289027	15.48
	UPPER LIMIT	1201190	11.857	774218	14.51	578054	15.98
	LOWER LIMIT	300297	10.857	193555	13.51	144514	14.98
	EPA SAMPLE NO.						
01	SB20	314367	11.35	264451	14.00	219856	15.48
02	SB17	309191	11.35	269688	14.00	228742	15.47

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129846.D Time Analyzed: 16:17

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	121447	6.81	452320	8.10	226697	9.85
	UPPER LIMIT	242894	7.31	904640	8.598	453394	10.351
	LOWER LIMIT	60723.5	6.31	226160	7.598	113349	9.351
	EPA SAMPLE NO.						
01	SB16	130880	6.81	528633	8.09	268187	9.85
02	SB12	130849	6.81	480170	8.09	209632	9.85
03	SB14	130528	6.81	526007	8.09	280802	9.85
04	SB14MS	138782	6.81	549726	8.09	281416	9.85
05	SB14MSD	137932	6.81	544329	8.10	270839	9.85
06	SB11	126662	6.81	494345	8.09	233671	9.85

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129846.D Time Analyzed: 16:17

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	373426	11.339	213621	13.992	213654	15.457
	UPPER LIMIT	746852	11.839	427242	14.492	427308	15.957
	LOWER LIMIT	186713	10.839	106811	13.492	106827	14.957
	EPA SAMPLE NO.						
01	SB16	429023	11.34	218663	13.99	245210	15.45
02	SB12	278504	11.34	259773	13.99	256261	15.45
03	SB14	480047	11.34	307774	13.99	225167	15.45
04	SB14MS	455183	11.34	243432	13.99	244283	15.45
05	SB14MSD	440649	11.34	225641	13.99	242404	15.45
06	SB11	329042	11.34	259987	13.99	206585	15.46

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/18/2022

Lab File ID: BF129868.D Time Analyzed: 10:50

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	140690	6.792	533803	8.08	274773	9.83
	UPPER LIMIT	281380	7.292	1067610	8.58	549546	10.333
	LOWER LIMIT	70345	6.292	266902	7.58	137387	9.333
	EPA SAMPLE NO.						
01	PB146986BL	155273	6.79	618070	8.08	324429	9.83
02	SB13	136973	6.79	556300	8.08	293898	9.83
03	SB18	133559	6.79	532277	8.08	279463	9.83
04	SB19	129269	6.79	504103	8.08	271828	9.83
05	SB16RE	128557	6.79	520840	8.08	274433	9.83
06	SB15	128482	6.79	516862	8.08	269162	9.83

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/18/2022

Lab File ID: BF129868.D Time Analyzed: 10:50

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	471556	11.321	315370	13.974	241403	15.427
	UPPER LIMIT	943112	11.821	630740	14.474	482806	15.927
	LOWER LIMIT	235778	10.821	157685	13.474	120702	14.927
	EPA SAMPLE NO.						
01	PB146986BL	574627	11.32	480635	13.97	447800	15.43
02	SB13	521937	11.32	296612	13.97	245300	15.43
03	SB18	432444	11.32	212811	13.97	265070	15.43
04	SB19	451900	11.32	236351	13.97	263948	15.43
05	SB16RE	454836	11.32	220119	13.97	249928	15.43
06	SB15	408800	11.32	217022	13.97	258268	15.43

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/24/2022

Lab File ID: BF129967.D Time Analyzed: 11:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	118946	6.769	461065	8.05	253993	9.81
	UPPER LIMIT	237892	7.269	922130	8.551	507986	10.31
	LOWER LIMIT	59473	6.269	230533	7.551	126997	9.31
	EPA SAMPLE NO.						
01	PB146986BS	136395	6.77	565482	8.05	300301	9.81

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/24/2022

Lab File ID: BF129967.D Time Analyzed: 11:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	433190	11.298	283746	13.945	209548	15.392
	UPPER LIMIT	866380	11.798	567492	14.445	419096	15.892
	LOWER LIMIT	216595	10.798	141873	13.445	104774	14.892
	EPA SAMPLE NO.						
01	PB146986BS	509891	11.30	303639	13.95	231074	15.39

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BL	SDG No.:	N4189
Lab Sample ID:	PB146986BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129869.D	1	08/13/22 08:50	08/18/22 11:22	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	170	U	73.9	170	ug/Kg
208-96-8	Acenaphthylene	170	U	68.7	170	ug/Kg
83-32-9	Acenaphthene	170	U	78.8	170	ug/Kg
86-73-7	Fluorene	170	U	78.7	170	ug/Kg
85-01-8	Phenanthrene	170	U	83.5	170	ug/Kg
120-12-7	Anthracene	170	U	83.9	170	ug/Kg
206-44-0	Fluoranthene	170	U	79.7	170	ug/Kg
129-00-0	Pyrene	170	U	74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	170	U	86.7	170	ug/Kg
218-01-9	Chrysene	170	U	85.4	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	170	U	69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	170	U	73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	170	U	67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	170	U	100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	170	U	100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	170	U	96.8	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	79.6		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	79.9		30 - 103	80%	SPK: 100
1718-51-0	Terphenyl-d14	69.3		21 - 107	69%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	155000	6.793			
1146-65-2	Naphthalene-d8	618000	8.075			
15067-26-2	Acenaphthene-d10	324000	9.828			
1517-22-2	Phenanthrene-d10	575000	11.322			
1719-03-5	Chrysene-d12	481000	13.969			
1520-96-3	Perylene-d12	448000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BL	SDG No.:	N4189
Lab Sample ID:	PB146986BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129869.D	1	08/13/22 08:50	08/18/22 11:22	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BS	SDG No.:	N4189
Lab Sample ID:	PB146986BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129969.D	1	08/13/22 08:50	08/24/22 12:18	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1300		73.9	170	ug/Kg
208-96-8	Acenaphthylene	1300		68.7	170	ug/Kg
83-32-9	Acenaphthene	1300		78.9	170	ug/Kg
86-73-7	Fluorene	1300		78.8	170	ug/Kg
85-01-8	Phenanthrene	1300		83.6	170	ug/Kg
120-12-7	Anthracene	1400		84.0	170	ug/Kg
206-44-0	Fluoranthene	1300		79.8	170	ug/Kg
129-00-0	Pyrene	1500		74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	1300		86.8	170	ug/Kg
218-01-9	Chrysene	1300		85.5	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	1300		69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	1400		73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	1500		67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1700		100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1800		100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1900		96.9	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.2		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	78.8		30 - 103	79%	SPK: 100
1718-51-0	Terphenyl-d14	91.7		21 - 107	92%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	136000	6.769			
1146-65-2	Naphthalene-d8	565000	8.051			
15067-26-2	Acenaphthene-d10	300000	9.81			
1517-22-2	Phenanthrene-d10	510000	11.298			
1719-03-5	Chrysene-d12	304000	13.945			
1520-96-3	Perylene-d12	231000	15.392			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BS	SDG No.:	N4189
Lab Sample ID:	PB146986BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129969.D	1	08/13/22 08:50	08/24/22 12:18	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MS	SDG No.:	N4189
Lab Sample ID:	N4189-17MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129860.D	1	08/13/22 08:50	08/17/22 23:55	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		77.1	180	ug/Kg
208-96-8	Acenaphthylene	1600		71.7	180	ug/Kg
83-32-9	Acenaphthene	1600		82.3	180	ug/Kg
86-73-7	Fluorene	1600		82.2	180	ug/Kg
85-01-8	Phenanthrene	1600		87.2	180	ug/Kg
120-12-7	Anthracene	1600		87.6	180	ug/Kg
206-44-0	Fluoranthene	1500		83.3	180	ug/Kg
129-00-0	Pyrene	1800		77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	1600		90.6	180	ug/Kg
218-01-9	Chrysene	1600		89.2	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	1500		72.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	1500		76.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	1700		70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1800		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1900		110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	2000		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.5		27 - 109	81%	SPK: 100
321-60-8	2-Fluorobiphenyl	80.2		30 - 103	80%	SPK: 100
1718-51-0	Terphenyl-d14	91.2		21 - 107	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	139000	6.81			
1146-65-2	Naphthalene-d8	550000	8.092			
15067-26-2	Acenaphthene-d10	281000	9.851			
1517-22-2	Phenanthrene-d10	455000	11.339			
1719-03-5	Chrysene-d12	243000	13.992			
1520-96-3	Perylene-d12	244000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MS	SDG No.:	N4189
Lab Sample ID:	N4189-17MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129860.D	1	08/13/22 08:50	08/17/22 23:55	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MSD	SDG No.:	N4189
Lab Sample ID:	N4189-17MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129861.D	1	08/13/22 08:50	08/18/22 00:26	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		77.1	180	ug/Kg
208-96-8	Acenaphthylene	1600		71.6	180	ug/Kg
83-32-9	Acenaphthene	1600		82.3	180	ug/Kg
86-73-7	Fluorene	1600		82.2	180	ug/Kg
85-01-8	Phenanthrene	1600		87.2	180	ug/Kg
120-12-7	Anthracene	1600		87.6	180	ug/Kg
206-44-0	Fluoranthene	1400		83.2	180	ug/Kg
129-00-0	Pyrene	1800		77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	1600		90.5	180	ug/Kg
218-01-9	Chrysene	1600		89.2	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	1500		72.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	1500		76.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	1700		70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1900		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1900		110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	2000		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.2		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	82.1		30 - 103	82%	SPK: 100
1718-51-0	Terphenyl-d14	90.7		21 - 107	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	138000	6.81			
1146-65-2	Naphthalene-d8	544000	8.098			
15067-26-2	Acenaphthene-d10	271000	9.851			
1517-22-2	Phenanthrene-d10	441000	11.339			
1719-03-5	Chrysene-d12	226000	13.986			
1520-96-3	Perylene-d12	242000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MSD	SDG No.:	N4189
Lab Sample ID:	N4189-17MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129861.D	1	08/13/22 08:50	08/18/22 00:26	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Mon Aug 15 02:28:31 2022
Response Via : Initial Calibration

Calibration Files
5 =BF129761.D 10 =BF129762.D 20 =BF129763.D 40 =BF129764.D 50 =BF129765.D 60 =BF129766.D 80 =BF129767.D

		Compound	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------								
2)		1,4-Dioxane	0.530	0.525	0.524	0.468	0.482	0.491	0.469	0.498	5.48
3)		Pyridine	1.196	1.381	1.402	1.227	1.278	1.366	1.279	1.304	6.15
4)		n-Nitrosodimet...	0.611	0.611	0.607	0.583	0.602	0.609	0.585	0.601	2.06
5)	S	2-Fluorophenol	1.334	1.333	1.292	1.114	1.163	1.155	1.064	1.208	9.14
6)		Aniline	1.899	1.948	1.843	1.584	1.652	1.638	1.505	1.724	9.91
7)	S	Phenol-d6	1.699	1.697	1.609	1.387	1.439	1.433	1.326	1.513	10.11
8)		2-Chlorophenol	1.479	1.476	1.429	1.250	1.293	1.289	1.196	1.345	8.55
9)		Benzaldehyde		1.103	0.999	0.809	0.812	0.742		0.893	16.95
10)	C	Phenol	1.804	1.876	1.782	1.526	1.601	1.572	1.455	1.659	9.64
11)		bis(2-Chloroet...	1.322	1.388	1.323	1.177	1.229	1.221	1.161	1.260	6.75
12)		1,3-Dichlorobe...	1.583	1.583	1.529	1.346	1.408	1.399	1.313	1.452	7.73
13)	C	1,4-Dichlorobe...	1.623	1.661	1.572	1.361	1.428	1.418	1.321	1.483	9.03
14)		1,2-Dichlorobe...	1.528	1.563	1.460	1.269	1.319	1.299	1.207	1.378	10.03
15)		Benzyl Alcohol	1.228	1.289	1.231	1.051	1.100	1.098	0.997	1.142	9.46
16)		2,2'-oxybis(1-...	1.856	1.936	1.807	1.568	1.614	1.584	1.453	1.688	10.53
17)		2-Methylphenol	1.183	1.198	1.140	0.992	1.042	1.039	0.965	1.080	8.64
18)		Hexachloroethane	0.601	0.596	0.583	0.515	0.541	0.550	0.513	0.557	6.60
19)	P	n-Nitroso-di-n...	1.021	1.072	1.019	0.897	0.930	0.917	0.837	0.956	8.69
20)		3+4-Methylphenols	1.606	1.652	1.565	1.342	1.397	1.353	1.232	1.449	10.91
21)	I	Naphthalene-d8	----------ISTD----------								
22)		Acetophenone	0.520	0.522	0.511	0.445	0.474	0.470	0.469	0.487	6.21
23)	S	Nitrobenzene-d5	0.384	0.393	0.390	0.344	0.367	0.369	0.368	0.374	4.54
24)		Nitrobenzene	0.397	0.399	0.389	0.348	0.366	0.370	0.368	0.377	4.98
25)		Isophorone	0.659	0.674	0.664	0.595	0.634	0.636	0.639	0.643	4.05
26)	C	2-Nitrophenol	0.178	0.192	0.193	0.174	0.187	0.187	0.186	0.185	3.75
27)		2,4-Dimethylph...	0.275	0.284	0.275	0.248	0.262	0.259	0.259	0.266	4.66
28)		bis(2-Chloroet...	0.389	0.393	0.391	0.354	0.362	0.373	0.367	0.375	4.16
29)	C	2,4-Dichloroph...	0.294	0.304	0.306	0.273	0.285	0.290	0.283	0.291	4.09
30)		1,2,4-Trichlor...	0.323	0.326	0.321	0.282	0.297	0.298	0.298	0.307	5.50
31)		Naphthalene	1.123	1.131	1.117	0.955	1.007	1.000	0.987	1.046	7.17
32)		Benzoic acid		0.078	0.093	0.109	0.121	0.132	0.145	0.113	22.06
33)		4-Chloroaniline	0.429	0.441	0.435	0.381	0.406	0.397	0.390	0.411	5.70
34)	C	Hexachlorobuta...	0.193	0.193	0.195	0.174	0.185	0.185	0.182	0.187	3.98
35)		Caprolactam	0.092	0.093	0.095	0.084	0.089	0.090	0.090	0.090	3.74
36)	C	4-Chloro-3-met...	0.322	0.332	0.327	0.289	0.307	0.311	0.307	0.313	4.66
37)		2-Methylnaphth...	0.721	0.741	0.722	0.634	0.676	0.662	0.650	0.686	6.00
38)		1-Methylnaphth...	0.717	0.728	0.704	0.610	0.644	0.639	0.628	0.667	7.15

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.579	0.596	0.585	0.512	0.536	0.551	0.535	0.556	5.55
41)	P	Hexachlorocycl...		0.040	0.079	0.119	0.129	0.158	0.179	0.117	43.53
42)	S	2,4,6-Tribromo...	0.208	0.209	0.211	0.188	0.195	0.197	0.198	0.201	4.33
43)	C	2,4,6-Trichlor...	0.357	0.373	0.377	0.339	0.357	0.368	0.358	0.361	3.55
44)		2,4,5-Trichlor...	0.380	0.395	0.408	0.370	0.385	0.398	0.385	0.389	3.25
45)	S	2-Fluorobiphenyl	1.453	1.485	1.424	1.198	1.243	1.234	1.181	1.317	9.98
46)		1,1'-Biphenyl	1.639	1.655	1.622	1.398	1.445	1.456	1.421	1.519	7.46
47)		2-Chloronaphth...	1.274	1.305	1.280	1.101	1.163	1.156	1.137	1.202	6.78
48)		2-Nitroaniline	0.378	0.398	0.403	0.357	0.375	0.376	0.372	0.380	4.12
49)		Acenaphthylene	1.961	1.996	1.976	1.680	1.743	1.735	1.669	1.823	8.09
50)		Dimethylphthalate	1.525	1.551	1.508	1.319	1.372	1.392	1.368	1.434	6.40
51)		2,6-Dinitrotol...	0.314	0.330	0.333	0.293	0.309	0.302	0.296	0.311	5.08
52)	C	Acenaphthene	1.182	1.212	1.173	1.019	1.059	1.063	1.034	1.106	7.20
53)		3-Nitroaniline	0.355	0.368	0.364	0.321	0.336	0.334	0.328	0.344	5.34
54)	P	2,4-Dinitrophenol		0.084	0.111	0.122	0.130	0.143		0.118	18.98
55)		Dibenzofuran	1.831	1.851	1.800	1.501	1.580	1.568	1.500	1.662	9.54
56)	P	4-Nitrophenol	0.110	0.140	0.160	0.152	0.162	0.176	0.172	0.153	14.73
57)		2,4-Dinitrotol...	0.428	0.439	0.442	0.365	0.395	0.388	0.369	0.404	8.00
58)		Fluorene	1.530	1.540	1.492	1.256	1.315	1.317	1.263	1.387	9.20
59)		2,3,4,6-Tetrac...	0.264	0.281	0.297	0.276	0.286	0.295	0.298	0.285	4.41
60)		Diethylphthalate	1.543	1.570	1.546	1.305	1.374	1.365	1.304	1.430	8.30
61)		4-Chlorophenyl...	0.664	0.687	0.661	0.570	0.595	0.600	0.582	0.623	7.48
62)		4-Nitroaniline	0.358	0.372	0.374	0.319	0.345	0.337	0.324	0.347	6.31
63)		Azobenzene	1.435	1.493	1.461	1.255	1.323	1.317	1.282	1.366	6.93
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...	0.088	0.109	0.122	0.119	0.123	0.132	0.130	0.117	12.80
66)	c	n-Nitrosodiphe...	0.694	0.726	0.712	0.619	0.648	0.673	0.652	0.675	5.67
67)		4-Bromophenyl-...	0.237	0.248	0.243	0.217	0.228	0.238	0.231	0.234	4.40
68)		Hexachlorobenzene	0.258	0.265	0.269	0.234	0.246	0.255	0.248	0.254	4.73
69)		Atrazine	0.222	0.225	0.221	0.188	0.200	0.202	0.192	0.207	7.36
70)	C	Pentachlorophenol		0.049	0.060	0.066	0.070	0.078		0.065	16.99
71)		Phenanthrene	1.196	1.220	1.182	1.020	1.078	1.086	1.036	1.117	7.26
72)		Anthracene	1.194	1.211	1.185	1.018	1.065	1.088	1.015	1.111	7.59
73)		Carbazole	1.104	1.105	1.086	0.910	0.977	0.965	0.911	1.008	8.73
74)		Di-n-butylphth...	1.397	1.424	1.403	1.179	1.257	1.252	1.173	1.298	8.35
75)	C	Fluoranthene	1.273	1.281	1.246	1.026	1.105	1.066	1.004	1.143	10.55
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine		0.653	0.567	0.483	0.483	0.461		0.529	15.18
78)		Pyrene	1.622	1.724	1.747	1.706	1.702	1.855	1.810	1.738	4.40
79)	S	Terphenyl-d14	1.168	1.235	1.218	1.161	1.154	1.266	1.211	1.202	3.52
80)		Butylbenzylpht...	0.715	0.741	0.757	0.700	0.739	0.757	0.739	0.735	2.87
81)		Benzo(a)anthra...	1.431	1.456	1.429	1.267	1.338	1.362	1.347	1.376	4.85
82)		3,3'-Dichlorob...	0.481	0.489	0.465	0.382	0.399	0.396	0.371	0.426	11.79
83)		Chrysene	1.360	1.374	1.330	1.179	1.261	1.262	1.249	1.288	5.41
84)		Bis(2-ethylhex...	0.888	0.925	0.897	0.797	0.864	0.875	0.862	0.873	4.53
85)	c	Di-n-octyl pht...	1.213	1.213	1.170	1.087	1.161	1.268	1.319	1.204	6.29

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

86)	I	Perylene-d12	----------ISTD----------							
87)		Indeno(1,2,3-c...	1.118	1.230	1.342	1.389	1.401	1.555	1.577	1.373	11.98
88)		Benzo(b)fluora...	1.444	1.486	1.451	1.285	1.372	1.315	1.234	1.370	6.95
89)		Benzo(k)fluora...	1.393	1.437	1.440	1.141	1.261	1.266	1.257	1.313	8.53
90)	C	Benzo(a)pyrene	1.116	1.135	1.122	0.993	1.047	1.082	1.054	1.078	4.70
91)		Dibenzo(a,h)an...	0.908	0.997	1.124	1.161	1.163	1.278	1.300	1.133	12.48
92)		Benzo(g,h,i)pe...	0.856	0.985	1.105	1.163	1.175	1.303	1.325	1.130	14.78

(#) = Out of Range

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/17/2022 09:42

Lab File ID: BF129835.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.179		-2.4	
Phenol-d6	1.513	1.465		-3.2	
Nitrobenzene-d5	0.374	0.366		-2.1	
Naphthalene	1.046	1.012		-3.3	
2-Fluorobiphenyl	1.317	1.248		-5.2	
Acenaphthylene	1.823	1.757		-3.6	
Acenaphthene	1.106	1.077		-2.6	20.0
Fluorene	1.387	1.352		-2.5	
2,4,6-Tribromophenol	0.201	0.207		3.0	
Phenanthrene	1.117	1.094		-2.1	
Anthracene	1.111	1.082		-2.6	
Fluoranthene	1.143	1.125		-1.7	20.0
Pyrene	1.738	1.756		1.0	
Terphenyl-d14	1.202	1.211		0.7	
Benzo(a)anthracene	1.376	1.351		-1.8	
Chrysene	1.288	1.237		-4.0	
Benzo(b)fluoranthene	1.370	1.290		-5.8	
Benzo(k)fluoranthene	1.313	1.300		-1.0	
Benzo(a)pyrene	1.078	1.049		-2.7	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.458		6.2	
Dibenzo(a,h)anthracene	1.133	1.217		7.4	
Benzo(g,h,i)perylene	1.130	1.211		7.2	

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/17/2022 16:17

Lab File ID: BF129846.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.241		2.7	
Phenol-d6	1.513	1.502		-0.7	
Nitrobenzene-d5	0.374	0.371		-0.8	
Naphthalene	1.046	1.024		-2.1	
2-Fluorobiphenyl	1.317	1.293		-1.8	
Acenaphthylene	1.823	1.812		-0.6	
Acenaphthene	1.106	1.074		-2.9	20.0
Fluorene	1.387	1.347		-2.9	
2,4,6-Tribromophenol	0.201	0.188		-6.5	
Phenanthrene	1.117	1.112		-0.4	
Anthracene	1.111	1.086		-2.3	
Fluoranthene	1.143	1.076		-5.9	20.0
Pyrene	1.738	1.875		7.9	
Terphenyl-d14	1.202	1.210		0.7	
Benzo(a)anthracene	1.376	1.337		-2.8	
Chrysene	1.288	1.282		-0.5	
Benzo(b)fluoranthene	1.370	1.166		-14.9	
Benzo(k)fluoranthene	1.313	1.203		-8.4	
Benzo(a)pyrene	1.078	1.026		-4.8	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.606		17.0	
Dibenzo(a,h)anthracene	1.133	1.290		13.9	
Benzo(g,h,i)perylene	1.130	1.363		20.6	

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/18/2022 10:50

Lab File ID: BF129868.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.211		0.2	
Phenol-d6	1.513	1.486		-1.8	
Nitrobenzene-d5	0.374	0.372		-0.5	
Naphthalene	1.046	1.022		-2.3	
2-Fluorobiphenyl	1.317	1.303		-1.1	
Acenaphthylene	1.823	1.792		-1.7	
Acenaphthene	1.106	1.093		-1.2	20.0
Fluorene	1.387	1.343		-3.2	
2,4,6-Tribromophenol	0.201	0.196		-2.5	
Phenanthrene	1.117	1.104		-1.2	
Anthracene	1.111	1.076		-3.2	
Fluoranthene	1.143	1.125		-1.6	20.0
Pyrene	1.738	1.698		-2.3	
Terphenyl-d14	1.202	1.154		-4.0	
Benzo(a)anthracene	1.376	1.333		-3.1	
Chrysene	1.288	1.243		-3.5	
Benzo(b)fluoranthene	1.370	1.387		1.2	
Benzo(k)fluoranthene	1.313	1.187		-9.7	
Benzo(a)pyrene	1.078	1.051		-2.5	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.467		6.8	
Dibenzo(a,h)anthracene	1.133	1.223		7.9	
Benzo(g,h,i)perylene	1.130	1.236		9.4	

All other compounds must meet a minimum RRF of 0.010.

Form VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/24/2022 11:09

Lab File ID: BF129967.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.201		-0.6	
Phenol-d6	1.513	1.485		-1.9	
Nitrobenzene-d5	0.374	0.382		2.1	
Naphthalene	1.046	1.024		-2.1	
2-Fluorobiphenyl	1.317	1.292		-1.9	
Acenaphthylene	1.823	1.773		-2.7	
Acenaphthene	1.106	1.076		-2.7	20.0
Fluorene	1.387	1.365		-1.6	
2,4,6-Tribromophenol	0.201	0.197		-2.0	
Phenanthrene	1.117	1.107		-0.9	
Anthracene	1.111	1.102		-0.8	
Fluoranthene	1.143	1.145		0.2	20.0
Pyrene	1.738	1.743		0.3	
Terphenyl-d14	1.202	1.224		1.8	
Benzo(a)anthracene	1.376	1.340		-2.6	
Chrysene	1.288	1.272		-1.2	
Benzo(b)fluoranthene	1.370	1.336		-2.5	
Benzo(k)fluoranthene	1.313	1.275		-2.9	
Benzo(a)pyrene	1.078	1.061		-1.6	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.518		10.6	
Dibenzo(a,h)anthracene	1.133	1.256		10.9	
Benzo(g,h,i)perylene	1.130	1.277		13.0	

All other compounds must meet a minimum RRF of 0.010.

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID :								
			Total Concentration:	0.000				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088977.D	1	08/15/22 08:55	08/15/22 16:48	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.6	U	3.30	18.6	ug/kg
11104-28-2	Aroclor-1221	18.6	U	5.10	18.6	ug/kg
11141-16-5	Aroclor-1232	18.6	U	4.30	18.6	ug/kg
53469-21-9	Aroclor-1242	18.6	U	2.60	18.6	ug/kg
12672-29-6	Aroclor-1248	18.6	U	3.30	18.6	ug/kg
11097-69-1	Aroclor-1254	18.6	U	4.60	18.6	ug/kg
37324-23-5	Aroclor-1262	18.6	U	3.60	18.6	ug/kg
11100-14-4	Aroclor-1268	18.6	U	6.30	18.6	ug/kg
11096-82-5	Aroclor-1260	18.6	U	3.50	18.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.8		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.5		32 - 176	92%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088978.D	1	08/15/22 08:55	08/15/22 17:05	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.6	U	3.30	18.6	ug/kg
11104-28-2	Aroclor-1221	18.6	U	5.10	18.6	ug/kg
11141-16-5	Aroclor-1232	18.6	U	4.30	18.6	ug/kg
53469-21-9	Aroclor-1242	18.6	U	2.60	18.6	ug/kg
12672-29-6	Aroclor-1248	18.6	U	3.30	18.6	ug/kg
11097-69-1	Aroclor-1254	18.6	U	4.60	18.6	ug/kg
37324-23-5	Aroclor-1262	18.6	U	3.60	18.6	ug/kg
11100-14-4	Aroclor-1268	18.6	U	6.30	18.6	ug/kg
11096-82-5	Aroclor-1260	18.6	U	3.50	18.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.9		40 - 162	105%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.3		32 - 176	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088979.D	1	08/15/22 08:55	08/15/22 17:23	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.1	U	3.40	19.1	ug/kg
11104-28-2	Aroclor-1221	19.1	U	5.30	19.1	ug/kg
11141-16-5	Aroclor-1232	19.1	U	4.40	19.1	ug/kg
53469-21-9	Aroclor-1242	19.1	U	2.70	19.1	ug/kg
12672-29-6	Aroclor-1248	19.1	U	3.40	19.1	ug/kg
11097-69-1	Aroclor-1254	19.1	U	4.70	19.1	ug/kg
37324-23-5	Aroclor-1262	19.1	U	3.70	19.1	ug/kg
11100-14-4	Aroclor-1268	19.1	U	6.40	19.1	ug/kg
11096-82-5	Aroclor-1260	19.1	U	3.60	19.1	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.9		40 - 162	105%	SPK: 20
2051-24-3	Decachlorobiphenyl	17.4		32 - 176	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088980.D	1	08/15/22 08:55	08/15/22 17:40	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.6	U	3.20	17.6	ug/kg
11104-28-2	Aroclor-1221	17.6	U	4.90	17.6	ug/kg
11141-16-5	Aroclor-1232	17.6	U	4.10	17.6	ug/kg
53469-21-9	Aroclor-1242	17.6	U	2.50	17.6	ug/kg
12672-29-6	Aroclor-1248	17.6	U	3.10	17.6	ug/kg
11097-69-1	Aroclor-1254	17.6	U	4.40	17.6	ug/kg
37324-23-5	Aroclor-1262	17.6	U	3.50	17.6	ug/kg
11100-14-4	Aroclor-1268	17.6	U	5.90	17.6	ug/kg
11096-82-5	Aroclor-1260	17.6	U	3.40	17.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.8		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.3		32 - 176	106%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088981.D	1	08/15/22 08:55	08/15/22 17:57	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.0	U	3.20	18.0	ug/kg
11104-28-2	Aroclor-1221	18.0	U	5.00	18.0	ug/kg
11141-16-5	Aroclor-1232	18.0	U	4.20	18.0	ug/kg
53469-21-9	Aroclor-1242	18.0	U	2.60	18.0	ug/kg
12672-29-6	Aroclor-1248	18.0	U	3.20	18.0	ug/kg
11097-69-1	Aroclor-1254	18.0	U	4.50	18.0	ug/kg
37324-23-5	Aroclor-1262	18.0	U	3.50	18.0	ug/kg
11100-14-4	Aroclor-1268	18.0	U	6.10	18.0	ug/kg
11096-82-5	Aroclor-1260	18.0	U	3.40	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.6		40 - 162	103%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.4		32 - 176	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088982.D	1	08/15/22 08:55	08/15/22 18:15	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.5	U	3.10	17.5	ug/kg
11104-28-2	Aroclor-1221	17.5	U	4.80	17.5	ug/kg
11141-16-5	Aroclor-1232	17.5	U	4.10	17.5	ug/kg
53469-21-9	Aroclor-1242	17.5	U	2.50	17.5	ug/kg
12672-29-6	Aroclor-1248	17.5	U	3.10	17.5	ug/kg
11097-69-1	Aroclor-1254	17.5	U	4.30	17.5	ug/kg
37324-23-5	Aroclor-1262	17.5	U	3.40	17.5	ug/kg
11100-14-4	Aroclor-1268	17.5	U	5.90	17.5	ug/kg
11096-82-5	Aroclor-1260	17.5	U	3.30	17.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	23.0		40 - 162	115%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.4		32 - 176	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088983.D	1	08/15/22 08:55	08/15/22 18:32	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.0	U	3.20	18.0	ug/kg
11104-28-2	Aroclor-1221	18.0	U	5.00	18.0	ug/kg
11141-16-5	Aroclor-1232	18.0	U	4.20	18.0	ug/kg
53469-21-9	Aroclor-1242	18.0	U	2.60	18.0	ug/kg
12672-29-6	Aroclor-1248	18.0	U	3.20	18.0	ug/kg
11097-69-1	Aroclor-1254	18.0	U	4.50	18.0	ug/kg
37324-23-5	Aroclor-1262	18.0	U	3.50	18.0	ug/kg
11100-14-4	Aroclor-1268	18.0	U	6.10	18.0	ug/kg
11096-82-5	Aroclor-1260	18.0	U	3.40	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.7		40 - 162	103%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.1		32 - 176	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088989.D	1	08/15/22 08:55	08/15/22 20:46	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.2	U	3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.70	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	19.2	U	3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.8		40 - 162	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.2		32 - 176	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088990.D	1	08/15/22 08:55	08/15/22 21:03	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.8	U	3.20	17.8	ug/kg
11104-28-2	Aroclor-1221	17.8	U	4.90	17.8	ug/kg
11141-16-5	Aroclor-1232	17.8	U	4.10	17.8	ug/kg
53469-21-9	Aroclor-1242	17.8	U	2.50	17.8	ug/kg
12672-29-6	Aroclor-1248	17.8	U	3.10	17.8	ug/kg
11097-69-1	Aroclor-1254	17.8	U	4.40	17.8	ug/kg
37324-23-5	Aroclor-1262	17.8	U	3.50	17.8	ug/kg
11100-14-4	Aroclor-1268	17.8	U	6.00	17.8	ug/kg
11096-82-5	Aroclor-1260	17.8	U	3.40	17.8	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.9		40 - 162	114%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.5		32 - 176	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088991.D	1	08/15/22 08:55	08/15/22 21:21	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.7	U	3.20	17.7	ug/kg
11104-28-2	Aroclor-1221	17.7	U	4.90	17.7	ug/kg
11141-16-5	Aroclor-1232	17.7	U	4.10	17.7	ug/kg
53469-21-9	Aroclor-1242	17.7	U	2.50	17.7	ug/kg
12672-29-6	Aroclor-1248	17.7	U	3.10	17.7	ug/kg
11097-69-1	Aroclor-1254	17.7	U	4.40	17.7	ug/kg
37324-23-5	Aroclor-1262	17.7	U	3.50	17.7	ug/kg
11100-14-4	Aroclor-1268	17.7	U	6.00	17.7	ug/kg
11096-82-5	Aroclor-1260	17.7	U	3.40	17.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	24.0		40 - 162	120%	SPK: 20
2051-24-3	Decachlorobiphenyl	26.8		32 - 176	134%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
I.BLK-PO088545.D	PIBLK-PO088545.D	Tetrachloro-m-xylene	1	20	18.8	94		60	140
		Decachlorobiphenyl	1	20	19.0	95		60	140
		Tetrachloro-m-xylene	2	20	18.6	93		60	140
		Decachlorobiphenyl	2	20	18.6	93		60	140
I.BLK-PO088973.D	PIBLK-PO088973.D	Tetrachloro-m-xylene	1	20	20.1	101		60	140
		Decachlorobiphenyl	1	20	21.3	106		60	140
		Tetrachloro-m-xylene	2	20	18.5	93		60	140
		Decachlorobiphenyl	2	20	18.5	92		60	140
PB147017BL	PB147017BL	Tetrachloro-m-xylene	1	20	20.4	102		40	162
		Decachlorobiphenyl	1	20	22.7	113		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	19.6	98		32	176
PB147017BS	PB147017BS	Tetrachloro-m-xylene	1	20	20.1	100		40	162
		Decachlorobiphenyl	1	20	22.1	111		32	176
		Tetrachloro-m-xylene	2	20	17.1	85		40	162
		Decachlorobiphenyl	2	20	19.1	95		32	176
N4189-01	SB18	Tetrachloro-m-xylene	1	20	20.8	104		40	162
		Decachlorobiphenyl	1	20	18.5	92		32	176
		Tetrachloro-m-xylene	2	20	19.2	96		40	162
		Decachlorobiphenyl	2	20	15.9	80		32	176
N4189-03	SB19	Tetrachloro-m-xylene	1	20	20.9	105		40	162
		Decachlorobiphenyl	1	20	18.3	91		32	176
		Tetrachloro-m-xylene	2	20	19.4	97		40	162
		Decachlorobiphenyl	2	20	16.4	82		32	176
N4189-05	SB20	Tetrachloro-m-xylene	1	20	20.9	105		40	162
		Decachlorobiphenyl	1	20	17.4	87		32	176
		Tetrachloro-m-xylene	2	20	19.1	95		40	162
		Decachlorobiphenyl	2	20	14.7	73		32	176
N4189-07	SB15	Tetrachloro-m-xylene	1	20	20.8	104		40	162
		Decachlorobiphenyl	1	20	21.3	106		32	176
		Tetrachloro-m-xylene	2	20	19.3	96		40	162
		Decachlorobiphenyl	2	20	18.2	91		32	176
N4189-09	SB16	Tetrachloro-m-xylene	1	20	20.6	103		40	162
		Decachlorobiphenyl	1	20	19.4	97		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	17.4	87		32	176
N4189-11	SB17	Tetrachloro-m-xylene	1	20	23.0	115		40	162
		Decachlorobiphenyl	1	20	23.4	117		32	176
		Tetrachloro-m-xylene	2	20	21.2	106		40	162
		Decachlorobiphenyl	2	20	20.0	100		32	176
N4189-13	SB13	Tetrachloro-m-xylene	1	20	20.7	103		40	162
		Decachlorobiphenyl	1	20	19.1	96		32	176
		Tetrachloro-m-xylene	2	20	19.1	95		40	162

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
N4189-13	SB13	Decachlorobiphenyl	2	20	16.6	83		32	176
I.BLK-PO088988.D	PIBLK-PO088988.D	Tetrachloro-m-xylene	1	20	20.3	102		60	140
		Decachlorobiphenyl	1	20	21.6	108		60	140
		Tetrachloro-m-xylene	2	20	18.8	94		60	140
		Decachlorobiphenyl	2	20	18.9	94		60	140
N4189-15	SB12	Tetrachloro-m-xylene	1	20	18.8	94		40	162
		Decachlorobiphenyl	1	20	18.2	91		32	176
		Tetrachloro-m-xylene	2	20	17.4	87		40	162
		Decachlorobiphenyl	2	20	15.9	80		32	176
N4189-17	SB14	Tetrachloro-m-xylene	1	20	22.9	114		40	162
		Decachlorobiphenyl	1	20	23.5	117		32	176
		Tetrachloro-m-xylene	2	20	21.1	106		40	162
		Decachlorobiphenyl	2	20	20.2	101		32	176
N4189-19	SB11	Tetrachloro-m-xylene	1	20	24.0	120		40	162
		Decachlorobiphenyl	1	20	26.8	134		32	176
		Tetrachloro-m-xylene	2	20	21.5	108		40	162
		Decachlorobiphenyl	2	20	21.8	109		32	176
N4200-10MS	S5MS	Tetrachloro-m-xylene	1	20	22.0	110		40	162
		Decachlorobiphenyl	1	20	20.3	101		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	17.1	86		32	176
N4200-10MSD	S5MSD	Tetrachloro-m-xylene	1	20	21.8	109		40	162
		Decachlorobiphenyl	1	20	20.1	100		32	176
		Tetrachloro-m-xylene	2	20	18.4	92		40	162
		Decachlorobiphenyl	2	20	16.9	85		32	176
I.BLK-PO089003.D	PIBLK-PO089003.D	Tetrachloro-m-xylene	1	20	20.7	104		60	140
		Decachlorobiphenyl	1	20	22.1	111		60	140
		Tetrachloro-m-xylene	2	20	18.9	95		60	140
		Decachlorobiphenyl	2	20	19.0	95		60	140

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PO088997.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**S5MS**											
N4200-10MS	AR1016	188.3	0	204	ug/kg	108				55	134	
	AR1260	188.3	0	178	ug/kg	95				40	175	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PO088998.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**S5MSD**											
N4200-10MSD	AR1016	188.4	0	202	ug/kg	107		1		55	134	20
	AR1260	188.4	0	178	ug/kg	94		1		40	175	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **Datafile :** PO088975.D

Lab Sample ID	Parameter	Spike	Result	Units	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB147017BS	AR1016	166.6	154	ug/kg	92				71	120	
	AR1260	166.6	143	ug/kg	86				65	130	

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB147017BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab Sample ID: PB147017BL Lab File ID: PO088974.D

Matrix: (soil/water) Solid Extraction: (Type) SOXH

Sulfur Cleanup: (Y/N) N Date Extracted: 08/15/2022

Date Analyzed (1): 08/15/2022 Date Analyzed (2): 08/15/2022

Time Analyzed (1): 15:56 Time Analyzed (2): 15:56

Instrument ID (1): ECD_O Instrument ID (2): ECD_O

GC Column (1): ZB-MR1 ID: 0.32 (mm) GC Column (2): ZB-MR2 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED 1	DATE ANALYZED 2
PB147017BS	PB147017BS	PO088975.D	08/15/2022	08/15/2022
SB18	N4189-01	PO088977.D	08/15/2022	08/15/2022
SB19	N4189-03	PO088978.D	08/15/2022	08/15/2022
SB20	N4189-05	PO088979.D	08/15/2022	08/15/2022
SB15	N4189-07	PO088980.D	08/15/2022	08/15/2022
SB16	N4189-09	PO088981.D	08/15/2022	08/15/2022
SB17	N4189-11	PO088982.D	08/15/2022	08/15/2022
SB13	N4189-13	PO088983.D	08/15/2022	08/15/2022
SB12	N4189-15	PO088989.D	08/15/2022	08/15/2022
SB14	N4189-17	PO088990.D	08/15/2022	08/15/2022
SB11	N4189-19	PO088991.D	08/15/2022	08/15/2022
S5MS	N4200-10MS	PO088997.D	08/15/2022	08/15/2022
S5MSD	N4200-10MSD	PO088998.D	08/15/2022	08/15/2022

COMMENTS:

CALIBRATION SUMMARY

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 (mm)

LAB FILE ID: RT 1000 = PO088546.D RT 750 = PO088547.D

RT 500 = PO088548.D RT 250 = PO088549.D RT 050 = PO088550.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	5.62	5.62	5.62	5.62	5.62	5.62	5.52	5.72
Aroclor-1016-2	(2)	5.64	5.64	5.64	5.64	5.64	5.64	5.54	5.74
Aroclor-1016-3	(3)	5.70	5.70	5.70	5.70	5.70	5.70	5.60	5.80
Aroclor-1016-4	(4)	5.80	5.80	5.80	5.80	5.80	5.80	5.70	5.90
Aroclor-1016-5	(5)	6.10	6.10	6.10	6.10	6.10	6.10	6.00	6.20
Aroclor-1260-1	(1)	7.23	7.23	7.23	7.23	7.23	7.23	7.13	7.33
Aroclor-1260-2	(2)	7.49	7.49	7.49	7.49	7.49	7.49	7.39	7.59
Aroclor-1260-3	(3)	7.85	7.85	7.85	7.85	7.85	7.85	7.75	7.95
Aroclor-1260-4	(4)	8.07	8.07	8.08	8.07	8.07	8.07	7.97	8.17
Aroclor-1260-5	(5)	8.40	8.40	8.40	8.40	8.40	8.40	8.30	8.50
Decachlorobiphenyl		10.28	10.28	10.28	10.28	10.28	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1242-1	(1)	5.62	5.61	5.61	5.62	5.62	5.62	5.52	5.72
Aroclor-1242-2	(2)	5.64	5.64	5.64	5.64	5.64	5.64	5.54	5.74
Aroclor-1242-3	(3)	5.70	5.70	5.70	5.70	5.70	5.70	5.60	5.80
Aroclor-1242-4	(4)	5.80	5.80	5.80	5.80	5.80	5.80	5.70	5.90
Aroclor-1242-5	(5)	6.54	6.54	6.54	6.54	6.54	6.54	6.44	6.64
Decachlorobiphenyl		10.28	10.28	10.28	10.28	10.28	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1248-1	(1)	5.61	5.61	5.61	5.61	5.61	5.61	5.51	5.71
Aroclor-1248-2	(2)	5.89	5.89	5.89	5.89	5.89	5.89	5.79	5.99
Aroclor-1248-3	(3)	6.10	6.10	6.10	6.10	6.10	6.10	6.00	6.20
Aroclor-1248-4	(4)	6.50	6.50	6.50	6.50	6.50	6.50	6.40	6.60
Aroclor-1248-5	(5)	6.54	6.54	6.54	6.54	6.54	6.54	6.44	6.64
Decachlorobiphenyl		10.28	10.27	10.27	10.27	10.28	10.27	10.17	10.37
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1254-1	(1)	6.47	6.48	6.48	6.47	6.48	6.48	6.38	6.58
Aroclor-1254-2	(2)	6.69	6.69	6.70	6.69	6.69	6.70	6.60	6.80
Aroclor-1254-3	(3)	7.06	7.06	7.07	7.06	7.06	7.06	6.96	7.16
Aroclor-1254-4	(4)	7.35	7.35	7.35	7.35	7.35	7.35	7.25	7.45
Aroclor-1254-5	(5)	7.77	7.77	7.77	7.77	7.77	7.77	7.67	7.87
Decachlorobiphenyl		10.27	10.28	10.28	10.27	10.27	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1268-1	(1)	8.72	8.72	8.72	8.72	8.72	8.72	8.62	8.82
Aroclor-1268-2	(2)	8.82	8.82	8.82	8.82	8.82	8.82	8.72	8.92
Aroclor-1268-3	(3)	9.05	9.05	9.05	9.05	9.05	9.05	8.95	9.15
Aroclor-1268-4	(4)	9.49	9.49	9.49	9.49	9.49	9.49	9.39	9.59
Aroclor-1268-5	(5)	9.92	9.92	9.92	9.92	9.92	9.92	9.82	10.02

RETENTION TIMES OF INITIAL CALIBRATION

Decachlorobiphenyl	10.27	10.28	10.27	10.28	10.27	10.27	10.17	10.37
Tetrachloro-m-xylene	4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR2 ID: 0.32 (mm)

LAB FILE ID: RT 1000 = PO088546.D RT 750 = PO088547.D

RT 500 = PO088548.D RT 250 = PO088549.D RT 050 = PO088550.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1016-2	(2)	4.69	4.70	4.69	4.70	4.69	4.69	4.59	4.79
Aroclor-1016-3	(3)	4.87	4.87	4.87	4.87	4.87	4.87	4.77	4.97
Aroclor-1016-4	(4)	4.91	4.91	4.91	4.91	4.91	4.91	4.81	5.01
Aroclor-1016-5	(5)	5.13	5.13	5.13	5.13	5.12	5.13	5.03	5.23
Aroclor-1260-1	(1)	6.16	6.16	6.16	6.16	6.16	6.16	6.06	6.26
Aroclor-1260-2	(2)	6.35	6.35	6.35	6.35	6.35	6.35	6.25	6.45
Aroclor-1260-3	(3)	6.50	6.50	6.50	6.50	6.50	6.50	6.40	6.60
Aroclor-1260-4	(4)	6.97	6.97	6.97	6.97	6.97	6.97	6.87	7.07
Aroclor-1260-5	(5)	7.21	7.21	7.21	7.21	7.21	7.21	7.11	7.31
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1242-1	(1)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1242-2	(2)	4.69	4.69	4.69	4.69	4.69	4.69	4.59	4.79
Aroclor-1242-3	(3)	4.87	4.87	4.87	4.87	4.87	4.87	4.77	4.97
Aroclor-1242-4	(4)	4.95	4.95	4.95	4.95	4.95	4.95	4.85	5.05
Aroclor-1242-5	(5)	5.48	5.48	5.48	5.48	5.48	5.48	5.38	5.58
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1248-1	(1)	4.67	4.67	4.67	4.68	4.67	4.67	4.57	4.77
Aroclor-1248-2	(2)	4.91	4.91	4.91	4.91	4.91	4.91	4.81	5.01
Aroclor-1248-3	(3)	4.95	4.95	4.95	4.95	4.95	4.95	4.85	5.05
Aroclor-1248-4	(4)	5.12	5.12	5.12	5.12	5.12	5.12	5.02	5.22
Aroclor-1248-5	(5)	5.52	5.52	5.52	5.52	5.52	5.52	5.42	5.62
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1254-1	(1)	5.48	5.47	5.48	5.47	5.47	5.47	5.37	5.57
Aroclor-1254-2	(2)	5.62	5.62	5.62	5.62	5.62	5.62	5.52	5.72
Aroclor-1254-3	(3)	6.03	6.03	6.03	6.02	6.03	6.03	5.93	6.13
Aroclor-1254-4	(4)	6.25	6.25	6.26	6.25	6.25	6.25	6.15	6.35
Aroclor-1254-5	(5)	6.67	6.67	6.67	6.67	6.67	6.67	6.57	6.77
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.59	3.60	3.60	3.50	3.70
Aroclor-1268-1	(1)	7.49	7.49	7.49	7.49	7.49	7.49	7.39	7.59
Aroclor-1268-2	(2)	7.56	7.56	7.56	7.56	7.56	7.56	7.46	7.66
Aroclor-1268-3	(3)	7.76	7.76	7.76	7.76	7.76	7.76	7.66	7.86
Aroclor-1268-4	(4)	8.05	8.05	8.05	8.05	8.05	8.05	7.95	8.15
Aroclor-1268-5	(5)	8.34	8.34	8.34	8.34	8.34	8.34	8.24	8.44

RETENTION TIMES OF INITIAL CALIBRATION

Decachlorobiphenyl	8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene	3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 (mm)

LAB FILE ID: **CF 1000 =** PO088546.D **CF 750 =** PO088547.D

CF 500 = PO088548.D **CF 250 =** PO088549.D **CF 050 =** PO088550.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	74410158	76999701	81378446	85893704	84392420	80614886	6
Aroclor-1016-2	(2)	106766147	111128591	114767662	121367944	122674260	115340921	6
Aroclor-1016-3	(3)	66503679	69196247	73049428	77484396	75089480	72264646	6
Aroclor-1016-4	(4)	53762773	56067395	58152808	60842792	57846560	57334466	5
Aroclor-1016-5	(5)	53308161	56133272	58088698	60911900	58366420	57361690	5
Aroclor-1260-1	(1)	95293877	99293067	103477410	109099244	109568900	103346500	6
Aroclor-1260-2	(2)	108590807	113273321	118149262	124227336	126755040	118199153	6
Aroclor-1260-3	(3)	81106014	84627945	88339592	92806068	92327440	87841412	6
Aroclor-1260-4	(4)	90719421	94481180	97943918	103680276	102880620	97941083	6
Aroclor-1260-5	(5)	173597161	179171092	185025374	191052248	192141480	184197471	4
Decachlorobiphenyl		1676508350	1812552867	1854135360	2031847680	2273390200	1929686891	12
Tetrachloro-m-xylene		2488850920	2649014560	2640980380	2708686520	2999243600	2697355196	7
Aroclor-1242-1	(1)	63417845	65046469	68777980	71482312	67325560	67210033	5
Aroclor-1242-2	(2)	90253599	93474227	97580354	102193720	99031300	96506640	5
Aroclor-1242-3	(3)	56700883	58611891	61831778	64452644	60185720	60356583	5
Aroclor-1242-4	(4)	45924754	47247989	49400300	50591056	47855200	48203860	4
Aroclor-1242-5	(5)	47997818	50176325	52508154	54153040	54653280	51897723	5
Decachlorobiphenyl		1729338930	1796306587	1894685720	1984600600	2061272000	1893240767	7
Tetrachloro-m-xylene		2608880970	2618020107	2685660380	2735274440	2758859200	2681339019	3
Aroclor-1248-1	(1)	47916386	50977687	52701220	55308504	51055220	51591803	5
Aroclor-1248-2	(2)	69494758	73641845	77503570	80976456	82223420	76768010	7
Aroclor-1248-3	(3)	75562891	79958809	83778010	88216012	85480480	82599240	6
Aroclor-1248-4	(4)	82903175	86992051	91520660	95803936	91818540	89807672	6
Aroclor-1248-5	(5)	81129278	85723243	90477580	94625652	91251960	88641543	6
Decachlorobiphenyl		1733963010	1841938027	1922918420	2007494280	1990225600	1899307867	6
Tetrachloro-m-xylene		2534002400	2621576200	2690467960	2738628000	2692598800	2655454672	3
Aroclor-1254-1	(1)	81458686	87731444	91698630	98593376	97253120	91347051	8
Aroclor-1254-2	(2)	122567531	132147363	137038484	146965932	145047300	136753322	7
Aroclor-1254-3	(3)	126962787	136450267	140404066	149829688	149984100	140726182	7
Aroclor-1254-4	(4)	92735262	99243008	102687816	108685852	101873380	101045064	6
Aroclor-1254-5	(5)	97658776	104754785	107880652	113529600	108622720	106489307	6
Decachlorobiphenyl		1751438780	1877469907	1942516440	2073860360	2041414200	1937339937	7
Tetrachloro-m-xylene		2552471550	2754219653	2748982200	2839306320	2779355200	2734866985	4
Aroclor-1268-1	(1)	242060835	248246723	260677576	250612612	238483500	248016249	3

CALIBRATION FACTOR OF INITIAL CALIBRATION

Aroclor-1268-2	(2)	222381051	227855165	239501596	229637220	218060660	227487138	4
Aroclor-1268-3	(3)	191543235	197218227	207319134	201053092	182657780	195958294	5
Aroclor-1268-4	(4)	84382206	87493427	91535458	88577644	83386080	87074963	4
Aroclor-1268-5	(5)	627397663	638165431	661567956	621661948	579870700	625732740	5
Decachlorobiphenyl		3044487600	3137796147	3469962460	3278997560	3257947400	3237838233	5
Tetrachloro-m-xylene		2697938830	2743304240	3034837180	2830364360	2725796800	2806448282	5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 (mm)

LAB FILE ID: **CF 1000 =** PO088546.D **CF 750 =** PO088547.D

CF 500 = PO088548.D **CF 250 =** PO088549.D **CF 050 =** PO088550.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	34936865	36351384	37712990	38843404	38504500	37269829	4
Aroclor-1016-2	(2)	50072101	51645719	53276128	55252040	50437200	52136638	4
Aroclor-1016-3	(3)	27854299	28847231	29891934	30408156	29286020	29257528	3
Aroclor-1016-4	(4)	22243104	23376011	24562976	25659372	24770680	24122429	6
Aroclor-1016-5	(5)	30783352	32120236	33402236	34627928	32142200	32615190	4
Aroclor-1260-1	(1)	59642529	61788927	64211640	67279056	64847940	63554018	5
Aroclor-1260-2	(2)	71467229	74140892	76783170	79668088	81074320	76626740	5
Aroclor-1260-3	(3)	67530227	70048699	72477410	75050508	74099700	71841309	4
Aroclor-1260-4	(4)	57370475	59440229	61287430	64203772	62801840	61020749	4
Aroclor-1260-5	(5)	136260024	139821057	142280100	144183984	142665460	141042125	2
Decachlorobiphenyl		1035805130	1126278800	1153546520	1259362800	1484561000	1211910850	14
Tetrachloro-m-xylene		1007322830	1070927293	1071253600	1092784480	1169204600	1082298561	5
Aroclor-1242-1	(1)	29381523	30228185	31247124	32278772	30165600	30660241	4
Aroclor-1242-2	(2)	42116454	42547679	44097274	44684704	41983300	43085882	3
Aroclor-1242-3	(3)	23397724	24001829	24750140	24677188	23212160	24007808	3
Aroclor-1242-4	(4)	23971088	24831956	25952722	26053524	25255560	25212970	3
Aroclor-1242-5	(5)	30481178	31220659	32544256	33288892	31660120	31839021	3
Decachlorobiphenyl		1066097540	1101669320	1151829000	1210472720	1302965800	1166606876	8
Tetrachloro-m-xylene		1050843310	1050366467	1082673520	1092873200	1066062400	1068563779	2
Aroclor-1248-1	(1)	22094949	23256269	24292444	24388604	23371780	23480809	4
Aroclor-1248-2	(2)	33384364	35090721	36698394	38217056	36054880	35889083	5
Aroclor-1248-3	(3)	35554493	37360467	39020890	40368440	38075740	38076006	5
Aroclor-1248-4	(4)	43267182	45345179	47067418	48556056	45376780	45922523	4
Aroclor-1248-5	(5)	42231095	43868155	45439176	46033852	40731780	43660812	5
Decachlorobiphenyl		1064836920	1121702227	1165126660	1212914760	1276758000	1168267713	7
Tetrachloro-m-xylene		1009223200	1036059840	1061172800	1079100800	1020081600	1041127648	3
Aroclor-1254-1	(1)	64539145	69066125	69973928	73208916	67584100	68874443	5
Aroclor-1254-2	(2)	54944071	58911065	60151726	63491400	58602640	59220180	5
Aroclor-1254-3	(3)	88293157	94296576	94822284	97849008	89680820	92988369	4
Aroclor-1254-4	(4)	54029355	57490411	58453894	60170148	53109560	56650674	5
Aroclor-1254-5	(5)	78049111	83088767	84042800	86002276	76952260	81627043	5
Decachlorobiphenyl		1065958930	1136026293	1168855360	1227278080	1237747600	1167173253	6
Tetrachloro-m-xylene		1010455000	1081006827	1081770320	1109403840	1028159200	1062159037	4
Aroclor-1268-1	(1)	177050014	180172289	187545462	176591348	163996820	177071187	5

CALIBRATION FACTOR OF INITIAL CALIBRATION

Aroclor-1268-2	(2)	161247968	164206135	169682414	159121084	148471260	160545772	5
Aroclor-1268-3	(3)	136421124	139323091	145119706	137156112	131748800	137953767	4
Aroclor-1268-4	(4)	56981639	58501464	62027788	59481736	52403700	57879265	6
Aroclor-1268-5	(5)	414935517	421100035	434639152	399346604	369380100	407880282	6
Decachlorobiphenyl		1865818870	1911895560	2100377500	1965180680	2009857000	1970625922	5
Tetrachloro-m-xylene		1060903190	1076085747	1179314400	1086070400	1030494400	1086573627	5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Date(s) Analyzed:** 08/04/2022 08/05/2022

GC Column: ZB-MR1 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	4.65	4.55	4.75	30997000
		2	4.73	4.63	4.83	23120000
		3	4.81	4.71	4.91	70176200
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	4.81	4.71	4.91	55548600
		2	5.15	5.05	5.25	27725800
		3	5.64	5.54	5.74	51012400
		4	5.80	5.70	5.90	25011000
		5	5.89	5.79	5.99	20580800
Aroclor-1262	500	1	7.85	7.75	7.95	126714000
		2	8.40	8.30	8.50	209954000
		3	8.72	8.62	8.82	90156600
		4	8.81	8.71	8.91	65919400
		5	9.49	9.39	9.59	80182400

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Date(s) Analyzed:** 08/04/2022 08/05/2022

GC Column: ZB-MR2 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	3.81	3.71	3.91	11966900
		2	3.89	3.79	3.99	9032100
		3	3.97	3.87	4.07	28417800
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	3.97	3.87	4.07	22642600
		2	4.69	4.59	4.79	23088600
		3	4.87	4.77	4.97	12289100
		4	4.95	4.85	5.05	11786400
		5	5.12	5.02	5.22	13454100
Aroclor-1262	500	1	6.76	6.66	6.86	35015000
		2	7.21	7.11	7.31	153183000
		3	7.49	7.39	7.59	61677800
		4	7.56	7.46	7.66	113883000
		5	8.05	7.95	8.15	53688000

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 14:29 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 14:29 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.00
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.91	4.91	4.81	5.01	0.00
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.01
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088969.D **Time Analyzed:** 14:29

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.609	5.515	5.715	532.930	500.000	6.6
Aroclor-1016-2	5.631	5.538	5.738	529.540	500.000	5.9
Aroclor-1016-3	5.694	5.601	5.801	535.610	500.000	7.1
Aroclor-1016-4	5.794	5.700	5.900	541.620	500.000	8.3
Aroclor-1016-5	6.090	5.997	6.197	532.520	500.000	6.5
Aroclor-1260-1	7.223	7.130	7.330	514.950	500.000	3.0
Aroclor-1260-2	7.480	7.386	7.586	515.330	500.000	3.1
Aroclor-1260-3	7.842	7.747	7.947	521.530	500.000	4.3
Aroclor-1260-4	8.069	7.975	8.175	518.140	500.000	3.6
Aroclor-1260-5	8.396	8.302	8.502	528.030	500.000	5.6
Decachlorobiphenyl	10.269	10.177	10.377	50.950	50.000	1.9
Tetrachloro-m-xylene	4.433	4.339	4.539	51.860	50.000	3.7

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088969.D **Time Analyzed:** 14:29

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.669	4.576	4.776	497.940	500.000	-0.4
Aroclor-1016-2	4.687	4.594	4.794	510.640	500.000	2.1
Aroclor-1016-3	4.862	4.770	4.970	510.470	500.000	2.1
Aroclor-1016-4	4.905	4.812	5.012	505.670	500.000	1.1
Aroclor-1016-5	5.117	5.025	5.225	510.610	500.000	2.1
Aroclor-1260-1	6.148	6.057	6.257	491.950	500.000	-1.6
Aroclor-1260-2	6.337	6.245	6.445	492.060	500.000	-1.6
Aroclor-1260-3	6.489	6.398	6.598	493.500	500.000	-1.3
Aroclor-1260-4	6.960	6.870	7.070	495.120	500.000	-1.0
Aroclor-1260-5	7.203	7.112	7.312	494.390	500.000	-1.1
Decachlorobiphenyl	8.581	8.492	8.692	43.900	50.000	-12.2
Tetrachloro-m-xylene	3.592	3.497	3.697	45.140	50.000	-9.7

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 19:19 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 19:19 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.00
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.90	4.91	4.81	5.01	0.01
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.01
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088984.D **Time Analyzed:** 19:19

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.608	5.515	5.715	540.360	500.000	8.1
Aroclor-1016-2	5.632	5.538	5.738	535.240	500.000	7.0
Aroclor-1016-3	5.694	5.601	5.801	543.780	500.000	8.8
Aroclor-1016-4	5.793	5.700	5.900	549.380	500.000	9.9
Aroclor-1016-5	6.090	5.997	6.197	539.730	500.000	7.9
Aroclor-1260-1	7.222	7.130	7.330	523.260	500.000	4.7
Aroclor-1260-2	7.480	7.386	7.586	522.970	500.000	4.6
Aroclor-1260-3	7.842	7.747	7.947	531.600	500.000	6.3
Aroclor-1260-4	8.069	7.975	8.175	528.820	500.000	5.8
Aroclor-1260-5	8.396	8.302	8.502	530.680	500.000	6.1
Decachlorobiphenyl	10.270	10.177	10.377	51.350	50.000	2.7
Tetrachloro-m-xylene	4.432	4.339	4.539	52.220	50.000	4.4

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088984.D **Time Analyzed:** 19:19

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.668	4.576	4.776	506.290	500.000	1.3
Aroclor-1016-2	4.687	4.594	4.794	519.870	500.000	4.0
Aroclor-1016-3	4.862	4.770	4.970	520.470	500.000	4.1
Aroclor-1016-4	4.904	4.812	5.012	516.930	500.000	3.4
Aroclor-1016-5	5.116	5.025	5.225	523.110	500.000	4.6
Aroclor-1260-1	6.147	6.057	6.257	503.790	500.000	0.8
Aroclor-1260-2	6.336	6.245	6.445	503.820	500.000	0.8
Aroclor-1260-3	6.488	6.398	6.598	504.730	500.000	0.9
Aroclor-1260-4	6.959	6.870	7.070	505.830	500.000	1.2
Aroclor-1260-5	7.202	7.112	7.312	503.270	500.000	0.7
Decachlorobiphenyl	8.580	8.492	8.692	44.660	50.000	-10.7
Tetrachloro-m-xylene	3.591	3.497	3.697	45.840	50.000	-8.3

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/16/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 00:09 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/16/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 00:09 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.01
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.90	4.91	4.81	5.01	0.01
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.02
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/16/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088999.D **Time Analyzed:** 00:09

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.607	5.515	5.715	550.400	500.000	10.1
Aroclor-1016-2	5.630	5.538	5.738	539.890	500.000	8.0
Aroclor-1016-3	5.692	5.601	5.801	549.430	500.000	9.9
Aroclor-1016-4	5.792	5.700	5.900	555.050	500.000	11.0
Aroclor-1016-5	6.088	5.997	6.197	541.460	500.000	8.3
Aroclor-1260-1	7.221	7.130	7.330	545.530	500.000	9.1
Aroclor-1260-2	7.479	7.386	7.586	540.280	500.000	8.1
Aroclor-1260-3	7.840	7.747	7.947	540.040	500.000	8.0
Aroclor-1260-4	8.066	7.975	8.175	535.920	500.000	7.2
Aroclor-1260-5	8.395	8.302	8.502	540.180	500.000	8.0
Decachlorobiphenyl	10.266	10.177	10.377	52.180	50.000	4.4
Tetrachloro-m-xylene	4.432	4.339	4.539	53.250	50.000	6.5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/16/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088999.D **Time Analyzed:** 00:09

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.667	4.576	4.776	518.370	500.000	3.7
Aroclor-1016-2	4.685	4.594	4.794	521.310	500.000	4.3
Aroclor-1016-3	4.860	4.770	4.970	528.750	500.000	5.8
Aroclor-1016-4	4.903	4.812	5.012	511.620	500.000	2.3
Aroclor-1016-5	5.115	5.025	5.225	537.700	500.000	7.5
Aroclor-1260-1	6.146	6.057	6.257	506.160	500.000	1.2
Aroclor-1260-2	6.335	6.245	6.445	508.460	500.000	1.7
Aroclor-1260-3	6.487	6.398	6.598	500.810	500.000	0.2
Aroclor-1260-4	6.958	6.870	7.070	508.150	500.000	1.6
Aroclor-1260-5	7.201	7.112	7.312	507.290	500.000	1.5
Decachlorobiphenyl	8.579	8.492	8.692	44.870	50.000	-10.3
Tetrachloro-m-xylene	3.591	3.497	3.697	46.070	50.000	-7.9

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** ECD_O

GC Column: ZB-MR1 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/04/2022 08/04/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/04/2022	18:27	PO088545.D	10.28	4.44
AR1660ICC1000	AR1660ICC1000	08/04/2022	18:45	PO088546.D	10.28	4.44
AR1660ICC750	AR1660ICC750	08/04/2022	19:02	PO088547.D	10.28	4.44
AR1660ICC500	AR1660ICC500	08/04/2022	19:20	PO088548.D	10.28	4.44
AR1660ICC250	AR1660ICC250	08/04/2022	19:37	PO088549.D	10.28	4.44
AR1660ICC050	AR1660ICC050	08/04/2022	19:55	PO088550.D	10.28	4.44
AR1221ICC500	AR1221ICC500	08/04/2022	20:12	PO088551.D	10.28	4.44
AR1232ICC500	AR1232ICC500	08/04/2022	20:30	PO088552.D	10.28	4.44
AR1242ICC1000	AR1242ICC1000	08/04/2022	20:47	PO088553.D	10.28	4.44
AR1242ICC750	AR1242ICC750	08/04/2022	21:04	PO088554.D	10.28	4.44
AR1242ICC500	AR1242ICC500	08/04/2022	21:22	PO088555.D	10.28	4.44
AR1242ICC250	AR1242ICC250	08/04/2022	21:39	PO088556.D	10.28	4.44
AR1242ICC050	AR1242ICC050	08/04/2022	21:57	PO088557.D	10.28	4.44
AR1248ICC1000	AR1248ICC1000	08/04/2022	22:14	PO088558.D	10.28	4.44
AR1248ICC750	AR1248ICC750	08/04/2022	22:32	PO088559.D	10.27	4.44
AR1248ICC500	AR1248ICC500	08/04/2022	22:49	PO088560.D	10.27	4.44
AR1248ICC250	AR1248ICC250	08/04/2022	23:06	PO088561.D	10.27	4.44
AR1248ICC050	AR1248ICC050	08/04/2022	23:24	PO088562.D	10.28	4.44
AR1254ICC1000	AR1254ICC1000	08/04/2022	23:41	PO088563.D	10.27	4.44
AR1254ICC750	AR1254ICC750	08/04/2022	23:59	PO088564.D	10.28	4.44
AR1254ICC500	AR1254ICC500	08/05/2022	00:20	PO088565.D	10.28	4.44
AR1254ICC250	AR1254ICC250	08/05/2022	00:37	PO088566.D	10.27	4.44
AR1254ICC050	AR1254ICC050	08/05/2022	00:54	PO088567.D	10.27	4.44
AR1262ICC500	AR1262ICC500	08/05/2022	01:12	PO088568.D	10.27	4.44
AR1268ICC1000	AR1268ICC1000	08/05/2022	01:29	PO088569.D	10.27	4.44
AR1268ICC750	AR1268ICC750	08/05/2022	01:47	PO088570.D	10.28	4.44
AR1268ICC500	AR1268ICC500	08/05/2022	02:04	PO088571.D	10.27	4.44
AR1268ICC250	AR1268ICC250	08/05/2022	02:21	PO088572.D	10.28	4.44
AR1268ICC050	AR1268ICC050	08/05/2022	02:39	PO088573.D	10.27	4.44
AR1660CCC500	AR1660CCC500	08/15/2022	14:29	PO088969.D	10.27	4.43
I.BLK	I.BLK	08/15/2022	15:38	PO088973.D	10.27	4.43
PB147017BL	PB147017BL	08/15/2022	15:56	PO088974.D	10.27	4.43
PB147017BS	PB147017BS	08/15/2022	16:13	PO088975.D	10.27	4.43
SB18	N4189-01	08/15/2022	16:48	PO088977.D	10.27	4.43
SB19	N4189-03	08/15/2022	17:05	PO088978.D	10.27	4.43
SB20	N4189-05	08/15/2022	17:23	PO088979.D	10.27	4.43
SB15	N4189-07	08/15/2022	17:40	PO088980.D	10.27	4.43
SB16	N4189-09	08/15/2022	17:57	PO088981.D	10.27	4.43
SB17	N4189-11	08/15/2022	18:15	PO088982.D	10.27	4.43
SB13	N4189-13	08/15/2022	18:32	PO088983.D	10.27	4.43
AR1660CCC500	AR1660CCC500	08/15/2022	19:19	PO088984.D	10.27	4.43
I.BLK	I.BLK	08/15/2022	20:29	PO088988.D	10.27	4.43
SB12	N4189-15	08/15/2022	20:46	PO088989.D	10.27	4.43
SB14	N4189-17	08/15/2022	21:03	PO088990.D	10.27	4.43
SB11	N4189-19	08/15/2022	21:21	PO088991.D	10.27	4.43

Analytical Sequence

S5MS	N4200-10MS	08/15/2022	23:04	PO088997.D	10.27	4.43
S5MSD	N4200-10MSD	08/15/2022	23:22	PO088998.D	10.27	4.43
AR1660CCC500	AR1660CCC500	08/16/2022	00:09	PO088999.D	10.27	4.43
I.BLK	I.BLK	08/16/2022	01:18	PO089003.D	10.27	4.43

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** ECD_O

GC Column: ZB-MR2 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/04/2022 08/04/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/04/2022	18:27	PO088545.D	8.59	3.60
AR1660ICC1000	AR1660ICC1000	08/04/2022	18:45	PO088546.D	8.59	3.60
AR1660ICC750	AR1660ICC750	08/04/2022	19:02	PO088547.D	8.59	3.60
AR1660ICC500	AR1660ICC500	08/04/2022	19:20	PO088548.D	8.59	3.60
AR1660ICC250	AR1660ICC250	08/04/2022	19:37	PO088549.D	8.59	3.60
AR1660ICC050	AR1660ICC050	08/04/2022	19:55	PO088550.D	8.59	3.60
AR1221ICC500	AR1221ICC500	08/04/2022	20:12	PO088551.D	8.59	3.60
AR1232ICC500	AR1232ICC500	08/04/2022	20:30	PO088552.D	8.59	3.60
AR1242ICC1000	AR1242ICC1000	08/04/2022	20:47	PO088553.D	8.59	3.60
AR1242ICC750	AR1242ICC750	08/04/2022	21:04	PO088554.D	8.59	3.60
AR1242ICC500	AR1242ICC500	08/04/2022	21:22	PO088555.D	8.59	3.60
AR1242ICC250	AR1242ICC250	08/04/2022	21:39	PO088556.D	8.59	3.60
AR1242ICC050	AR1242ICC050	08/04/2022	21:57	PO088557.D	8.59	3.60
AR1248ICC1000	AR1248ICC1000	08/04/2022	22:14	PO088558.D	8.59	3.60
AR1248ICC750	AR1248ICC750	08/04/2022	22:32	PO088559.D	8.59	3.60
AR1248ICC500	AR1248ICC500	08/04/2022	22:49	PO088560.D	8.59	3.60
AR1248ICC250	AR1248ICC250	08/04/2022	23:06	PO088561.D	8.59	3.60
AR1248ICC050	AR1248ICC050	08/04/2022	23:24	PO088562.D	8.59	3.60
AR1254ICC1000	AR1254ICC1000	08/04/2022	23:41	PO088563.D	8.59	3.60
AR1254ICC750	AR1254ICC750	08/04/2022	23:59	PO088564.D	8.59	3.60
AR1254ICC500	AR1254ICC500	08/05/2022	00:20	PO088565.D	8.59	3.60
AR1254ICC250	AR1254ICC250	08/05/2022	00:37	PO088566.D	8.59	3.59
AR1254ICC050	AR1254ICC050	08/05/2022	00:54	PO088567.D	8.59	3.60
AR1262ICC500	AR1262ICC500	08/05/2022	01:12	PO088568.D	8.59	3.60
AR1268ICC1000	AR1268ICC1000	08/05/2022	01:29	PO088569.D	8.59	3.60
AR1268ICC750	AR1268ICC750	08/05/2022	01:47	PO088570.D	8.59	3.60
AR1268ICC500	AR1268ICC500	08/05/2022	02:04	PO088571.D	8.59	3.60
AR1268ICC250	AR1268ICC250	08/05/2022	02:21	PO088572.D	8.59	3.60
AR1268ICC050	AR1268ICC050	08/05/2022	02:39	PO088573.D	8.59	3.60
AR1660CCC500	AR1660CCC500	08/15/2022	14:29	PO088969.D	8.58	3.59
I.BLK	I.BLK	08/15/2022	15:38	PO088973.D	8.58	3.59
PB147017BL	PB147017BL	08/15/2022	15:56	PO088974.D	8.58	3.59
PB147017BS	PB147017BS	08/15/2022	16:13	PO088975.D	8.58	3.59
SB18	N4189-01	08/15/2022	16:48	PO088977.D	8.58	3.59
SB19	N4189-03	08/15/2022	17:05	PO088978.D	8.58	3.59
SB20	N4189-05	08/15/2022	17:23	PO088979.D	8.58	3.59
SB15	N4189-07	08/15/2022	17:40	PO088980.D	8.58	3.59
SB16	N4189-09	08/15/2022	17:57	PO088981.D	8.58	3.59
SB17	N4189-11	08/15/2022	18:15	PO088982.D	8.58	3.59
SB13	N4189-13	08/15/2022	18:32	PO088983.D	8.58	3.59
AR1660CCC500	AR1660CCC500	08/15/2022	19:19	PO088984.D	8.58	3.59
I.BLK	I.BLK	08/15/2022	20:29	PO088988.D	8.58	3.59
SB12	N4189-15	08/15/2022	20:46	PO088989.D	8.58	3.59
SB14	N4189-17	08/15/2022	21:03	PO088990.D	8.58	3.59
SB11	N4189-19	08/15/2022	21:21	PO088991.D	8.58	3.59

Analytical Sequence

S5MS	N4200-10MS	08/15/2022	23:04	PO088997.D	8.58	3.59
S5MSD	N4200-10MSD	08/15/2022	23:22	PO088998.D	8.58	3.59
AR1660CCC500	AR1660CCC500	08/16/2022	00:09	PO088999.D	8.58	3.59
I.BLK	I.BLK	08/16/2022	01:18	PO089003.D	8.58	3.59

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB147017BL	SDG No.:	N4189
Lab Sample ID:	PB147017BL	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088974.D	1	08/15/22 08:55	08/15/22 15:56	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.0	U	3.10	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	17.0	U	3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.4		40 - 162	102%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.7		32 - 176	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/04/22
Project:	QED1059 Phase II SCI	Date Received:	08/04/22
Client Sample ID:	PIBLK-PO088545.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088545.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088545.D	1		08/04/22	PO080422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.6		60 - 140	93%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.6		60 - 140	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-PO088973.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088973.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088973.D	1		08/15/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.5		60 - 140	93%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.5		60 - 140	92%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-PO088988.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088988.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088988.D	1		08/15/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.8		60 - 140	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.9		60 - 140	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-PO089003.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO089003.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089003.D	1		08/16/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.9		60 - 140	95%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.0		60 - 140	95%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB147017BS	SDG No.:	N4189
Lab Sample ID:	PB147017BS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088975.D	1	08/15/22 08:55	08/15/22 16:13	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	154		3.00	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	143		3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.1		40 - 162	100%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.1		32 - 176	111%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	S5MS	SDG No.:	N4189
Lab Sample ID:	N4200-10MS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088997.D	1	08/15/22 08:55	08/15/22 23:04	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	204		3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.80	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	178		3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.0		40 - 162	110%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.3		32 - 176	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	S5MSD	SDG No.:	N4189
Lab Sample ID:	N4200-10MSD	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088998.D	1	08/15/22 08:55	08/15/22 23:22	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	202		3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.80	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	178		3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.8		40 - 162	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.1		32 - 176	100%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010372.D	1	08/13/22 09:40	08/15/22 15:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	2260		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.63	*	37 - 130	33%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18RE	SDG No.:	N4189
Lab Sample ID:	N4189-01RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011259.D	1	08/13/22 09:40	08/15/22 18:59	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	2460		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	7.40		37 - 130	37%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011249.D	1	08/13/22 09:40	08/15/22 13:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	4710		239	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	15.8		37 - 130	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011252.D	1	08/13/22 09:40	08/15/22 15:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	22900		246	1870	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	17.4		37 - 130	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011253.D	1	08/13/22 09:40	08/15/22 15:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5650		227	1730	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	10.5		37 - 130	52%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010365.D	1	08/13/22 09:40	08/15/22 11:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	700	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	5.76	*	37 - 130	29%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010373.D	1	08/13/22 09:40	08/15/22 16:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	726	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	5.64	*	37 - 130	28%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010371.D	1	08/13/22 09:40	08/15/22 15:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1580	J	226	1720	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.71	*	37 - 130	34%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17RE	SDG No.:	N4189
Lab Sample ID:	N4189-11RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010380.D	1	08/13/22 09:40	08/16/22 10:44	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1640	J	226	1720	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.87	*	37 - 130	34%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010367.D	1	08/13/22 09:40	08/15/22 12:30	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	548	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	9.21		37 - 130	46%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010368.D	1	08/13/22 09:40	08/15/22 13:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	896	J	247	1880	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	8.05		37 - 130	40%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010369.D	1	08/13/22 09:40	08/15/22 13:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	919	J	229	1740	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.4		37 - 130	72%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011254.D	5	08/13/22 09:40	08/15/22 16:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	85500		1140	8660	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	3.30		37 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

EPA SAMPLE NO.	S1 TETRACOSANE-d50		S2	S3	S4	TOT OUT
PIBLK-FF011243.D	83					0
PIBLK-FF011255.D	57					0
PIBLK-FF011260.D	85					0
PIBLK-FG010362.D	85					0
PIBLK-FG010374.D	81					0
PIBLK-FG010377.D	78					0
PIBLK-FG010381.D	79					0
SB18	33	*				1
SB18RE	37					0
SB19	79					0
SB19MS	66					0
SB19MSD	71					0
SB20	87					0
SB15	52					0
SB16	29	*				1
SB16RE	28	*				1
SB17	34	*				1
SB17RE	34	*				1
SB13	46					0
SB12	40					0
SB14	72					0
SB11	82					0
PB146987BL	101					0
PB146987BS	97					0

	QC LIMITS
TETRACOSANE-d50	For Water : 29-130 For Soil : 37-130

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB19MS **Datafile:** FF011250.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7300	4710	9646	68%	*	68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB19MSD **Datafile:** FF011251.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7292	4710	9460	65%	*	68-131

MS/MSD % Recovery RPD : 3.6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RI

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Matrix Spike - EPA Sample No : PB146987BS **Datafile:** FF011247.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
DRO	6662	0	5851	88	68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

4B

METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146987BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FF011246.D Lab Sample ID: PB146987BL

Instrument ID: FF Date Extracted: 08/15/2022

Matrix: (soil/water) Soil Date Analyzed: 08/15/22

Level: (low/med) low Time Analyzed: 11:31

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB146987BS	PB146987BS	FF011247.D	08/15/22
SB19	N4189-03	FF011249.D	08/15/22
SB19MS	N4189-03MS	FF011250.D	08/15/22
SB19MSD	N4189-03MSD	FF011251.D	08/15/22
SB20	N4189-05	FF011252.D	08/15/22
SB15	N4189-07	FF011253.D	08/15/22
SB11	N4189-19	FF011254.D	08/15/22
SB18RE	N4189-01RE	FF011259.D	08/15/22
SB16	N4189-09	FG010365.D	08/15/22
SB13	N4189-13	FG010367.D	08/15/22
SB12	N4189-15	FG010368.D	08/15/22
SB14	N4189-17	FG010369.D	08/15/22
SB17	N4189-11	FG010371.D	08/15/22
SB18	N4189-01	FG010372.D	08/15/22
SB16RE	N4189-09RE	FG010373.D	08/15/22
SB17RE	N4189-11RE	FG010380.D	08/16/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146987BL	SDG No.:	N4189
Lab Sample ID:	PB146987BL	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011246.D	1	08/13/22 09:40	08/15/22 11:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1670	U	219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	20.2		37 - 130	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011243.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011243.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011243.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.7		29 - 130	83%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011255.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011255.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011255.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	11.4		29 - 130	57%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011260.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011260.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011260.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.0		29 - 130	85%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FG010362.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010362.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010362.D	1		08/15/22	FG081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.1		29 - 130	85%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FG010374.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010374.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010374.D	1		08/15/22	FG081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.2		29 - 130	81%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-FG010377.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010377.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010377.D	1		08/16/22	FG081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	15.6		29 - 130	78%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-FG010381.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010381.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010381.D	1		08/16/22	FG081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	15.8		29 - 130	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146987BS	SDG No.:	N4189
Lab Sample ID:	PB146987BS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011247.D	1	08/13/22 09:40	08/15/22 12:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5850		219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	19.4		37 - 130	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19MS	SDG No.:	N4189
Lab Sample ID:	N4189-03MS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011250.D	1	08/13/22 09:40	08/15/22 13:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9650		240	1830	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	13.3		37 - 130	66%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19MSD	SDG No.:	N4189
Lab Sample ID:	N4189-03MSD	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011251.D	1	08/13/22 09:40	08/15/22 14:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9460		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.2		37 - 130	71%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FF072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	109747060	109747	FF011119.D
500	57087367	114175	FF011120.D
200	24322005	121610	FF011121.D
100	13358237	133582	FF011122.D
50	7363952	147279	FF011123.D

AVG RF : 125279 **% RSD : 12.177** **AVG RT : 14.8026**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FG072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	129039678	129040	FG010241.D
500	65428368	130857	FG010242.D
200	27695413	138477	FG010243.D
100	14808143	148081	FG010244.D
50	8194408	163888	FG010245.D

AVG RF : 142069 **% RSD : 10.082** **AVG RT : 14.8068**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011244.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	63743234	127486	125279	1.762

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011256.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	62185497	124371	125279	0.725

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011261.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	65096765	130194	125279	3.923

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010363.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	79343137	158686	142069	11.696

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010375.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	68407358	136815	142069	3.698

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010378.D Analyst Name: YP\AJ Analyst Date: 08-16-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	64019623	128039	142069	9.875

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010382.D Analyst Name: YP\AJ Analyst Date: 08-16-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	60536279	121073	142069	14.779

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** FID_G

GC Column: RXI-1MS **ID:** 0.18 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **14.8026**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	I.BLK01	15 Aug 2022 09:53	FF011243.D	14.799	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 10:25	FF011244.D	14.801	
PB146987BL	PB146987BL	15 Aug 2022 11:31	FF011246.D	14.799	
PB146987BS	PB146987BS	15 Aug 2022 12:00	FF011247.D	14.798	
SB19	N4189-03	15 Aug 2022 13:00	FF011249.D	14.798	
SB19MS	N4189-03MS	15 Aug 2022 13:29	FF011250.D	14.798	
SB19MSD	N4189-03MSD	15 Aug 2022 14:31	FF011251.D	14.797	
SB20	N4189-05	15 Aug 2022 15:01	FF011252.D	14.797	
SB15	N4189-07	15 Aug 2022 15:31	FF011253.D	14.798	
SB11	N4189-19	15 Aug 2022 16:01	FF011254.D	14.798	
PIBLK02	I.BLK02	15 Aug 2022 16:30	FF011255.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 17:00	FF011256.D	14.800	
SB18RE	N4189-01RE	15 Aug 2022 18:59	FF011259.D	14.796	
PIBLK03	I.BLK03	15 Aug 2022 19:28	FF011260.D	14.797	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 20:28	FF011261.D	14.799	
PIBLK04	I.BLK04	15 Aug 2022 09:53	FG010362.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 10:25	FG010363.D	14.801	
SB16	N4189-09	15 Aug 2022 11:31	FG010365.D	14.796	
SB13	N4189-13	15 Aug 2022 12:30	FG010367.D	14.795	
SB12	N4189-15	15 Aug 2022 13:00	FG010368.D	14.794	
SB14	N4189-17	15 Aug 2022 13:29	FG010369.D	14.796	
SB17	N4189-11	15 Aug 2022 15:01	FG010371.D	14.795	
SB18	N4189-01	15 Aug 2022 15:31	FG010372.D	14.795	
SB16RE	N4189-09RE	15 Aug 2022 16:01	FG010373.D	14.796	
PIBLK05	I.BLK05	15 Aug 2022 16:30	FG010374.D	14.796	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 17:30	FG010375.D	14.799	
PIBLK06	I.BLK06	16 Aug 2022 08:58	FG010377.D	14.793	
50 PPM TRPH STD	50 PPM TRPH STD	16 Aug 2022 09:27	FG010378.D	14.796	
SB17RE	N4189-11RE	16 Aug 2022 10:44	FG010380.D	14.794	
PIBLK07	I.BLK07	16 Aug 2022 11:14	FG010381.D	14.791	
50 PPM TRPH STD	50 PPM TRPH STD	16 Aug 2022 11:43	FG010382.D	14.795	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits (± 0.10 minutes)	Lower Limit	Upper Limits
	14.7068	14.9068

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081522\
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Operator : YP\AJ
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 15 15:27:20 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.799	2068671	16.285 ug/mlm
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

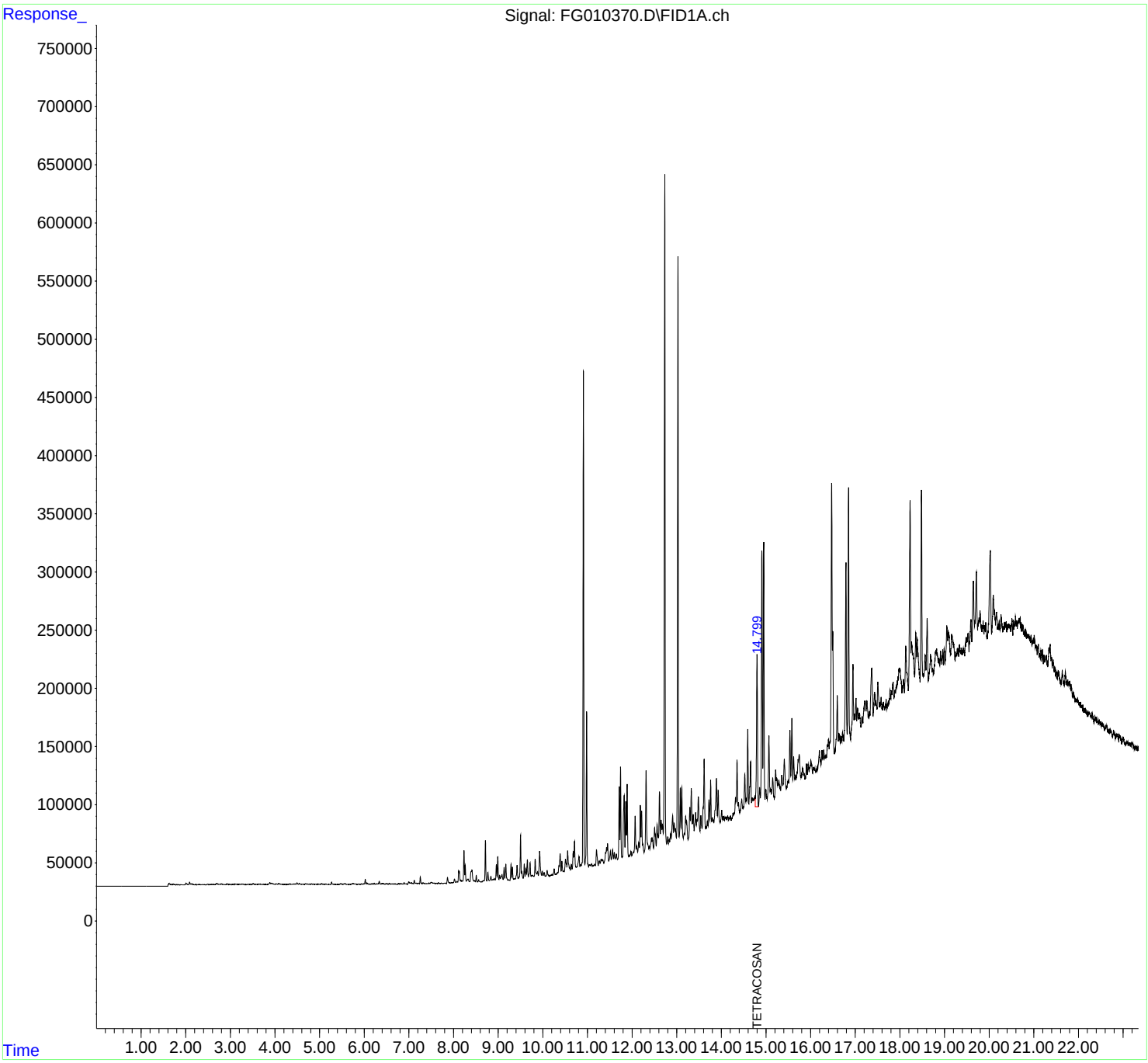
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081522\
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Operator : YP\AJ
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

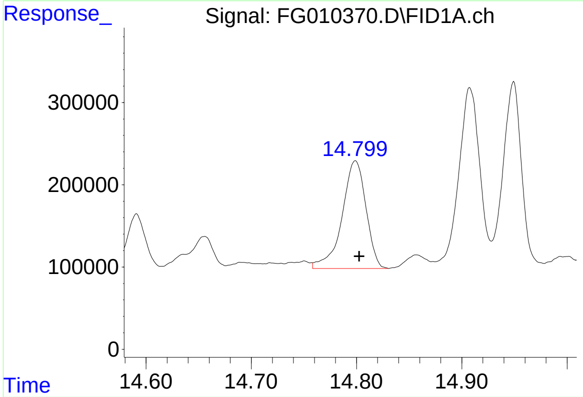
Integration File: autoint1.e
Quant Time: Aug 15 15:27:20 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.799 min
Delta R.T.: -0.004 min
Response: 2068671
Conc: 16.28 ug/ml

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

Instrument :
FID_G
ClientSampleId :
SB11

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG08152
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.262	4.250	4.274	BH	73	365	0.00%	0.000%
2	4.292	4.274	4.304	PH	49	58	0.00%	0.000%
3	4.323	4.304	4.338	PH	600	6239	0.07%	0.002%
4	4.350	4.338	4.374	HH	251	3576	0.04%	0.001%
5	4.397	4.374	4.410	HH	278	3606	0.04%	0.001%
6	4.429	4.410	4.445	HH	530	6792	0.08%	0.002%
7	4.460	4.445	4.476	HH	498	6142	0.07%	0.002%
8	4.492	4.476	4.524	HH	1467	20363	0.24%	0.007%
9	4.544	4.524	4.567	HH	785	11641	0.14%	0.004%
10	4.571	4.567	4.594	HH	293	3183	0.04%	0.001%
11	4.607	4.594	4.622	HH	243	3286	0.04%	0.001%
12	4.631	4.622	4.661	HH	309	4408	0.05%	0.001%
13	4.683	4.661	4.712	HH	748	12644	0.15%	0.004%
14	4.729	4.712	4.756	HH	399	6514	0.08%	0.002%
15	4.772	4.756	4.784	HH	311	3651	0.04%	0.001%
16	4.799	4.784	4.806	HH	362	4057	0.05%	0.001%
17	4.821	4.806	4.848	HH	648	8900	0.10%	0.003%
18	4.850	4.848	4.857	HH	213	1047	0.01%	0.000%
19	4.861	4.857	4.865	HH	193	818	0.01%	0.000%
20	4.877	4.865	4.882	HH	266	2203	0.03%	0.001%
21	4.897	4.882	4.929	HH	324	6135	0.07%	0.002%
22	4.943	4.929	4.952	HH	108	1256	0.01%	0.000%
23	4.971	4.952	4.988	HH	423	5756	0.07%	0.002%
24	4.998	4.988	5.012	HH	196	2025	0.02%	0.001%
25	5.041	5.012	5.065	HH	723	10597	0.12%	0.004%
26	5.074	5.065	5.095	HH	302	3714	0.04%	0.001%
27	5.124	5.095	5.131	HH	370	4405	0.05%	0.001%
28	5.142	5.131	5.175	HH	439	4706	0.06%	0.002%
29	5.201	5.175	5.232	PH	115	-70	-0.00%	-0.000%
30	5.236	5.232	5.248	PH	-9	-586	-0.01%	-0.000%
31	5.268	5.248	5.293	PH	1927	20493	0.24%	0.007%
32	5.311	5.293	5.328	HH	252	3004	0.04%	0.001%
33	5.343	5.328	5.361	PH	215	1412	0.02%	0.000%
34	5.365	5.361	5.370	PH	-104	-627	-0.01%	-0.000%
35	5.395	5.370	5.415	PH	249	1129	0.01%	0.000%
36	5.418	5.415	5.430	PH	43	-362	-0.00%	-0.000%

Page 1

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

rteres

37	5.437	5.430	5.442	PH	-54	-703	-0.01%	-0.000%
38	5.468	5.442	5.481	PH	736	8335		
39	5.487	5.481	5.501	HH	422	3656		
40	5.505	5.501	5.523	HH	214	943		
41	5.544	5.523	5.553	PH	631	5825		
42	5.557	5.553	5.573	HH	558	5389		
43	5.577	5.573	5.599	HH	424	3635	0.04%	0.001%
44	5.604	5.599	5.609	HH	89	326	0.00%	0.000%
45	5.631	5.609	5.641	HH	103	1002	0.01%	0.000%
46	5.645	5.641	5.650	HH	39	114	0.00%	0.000%
47	5.654	5.650	5.659	PH	72	233	0.00%	0.000%
48	5.674	5.659	5.683	PH	101	871	0.01%	0.000%
49	5.727	5.683	5.736	HH	693	9612	0.11%	0.003%
50	5.748	5.736	5.763	HH	818	9908	0.12%	0.003%
51	5.781	5.763	5.791	HH	545	7872	0.09%	0.003%
52	5.797	5.791	5.845	HH	433	6854	0.08%	0.002%
53	5.871	5.845	5.890	HH	425	6782	0.08%	0.002%
54	5.901	5.890	5.923	HH	304	4578	0.05%	0.002%
55	5.943	5.923	5.970	HH	566	8549	0.10%	0.003%
56	6.023	5.970	6.042	HH	4316	54537	0.64%	0.018%
57	6.057	6.042	6.099	HH	1331	26155	0.31%	0.009%
58	6.124	6.099	6.127	HH	289	3221	0.04%	0.001%
59	6.140	6.127	6.153	HH	358	4139	0.05%	0.001%
60	6.178	6.153	6.199	HH	856	12250	0.14%	0.004%
61	6.223	6.199	6.244	HH	1136	17772	0.21%	0.006%
62	6.259	6.244	6.272	HH	453	5636	0.07%	0.002%
63	6.286	6.272	6.298	HH	573	6821	0.08%	0.002%
64	6.304	6.298	6.310	HH	421	2776	0.03%	0.001%
65	6.336	6.310	6.370	HH	2731	41028	0.48%	0.014%
66	6.407	6.370	6.425	HH	949	21490	0.25%	0.007%
67	6.437	6.425	6.462	HH	590	9157	0.11%	0.003%
68	6.500	6.462	6.517	HH	768	14629	0.17%	0.005%
69	6.526	6.517	6.539	HH	468	4896	0.06%	0.002%
70	6.566	6.539	6.594	HH	784	16407	0.19%	0.005%
71	6.612	6.594	6.623	HH	513	6753	0.08%	0.002%
72	6.637	6.623	6.650	HH	468	6211	0.07%	0.002%
73	6.655	6.650	6.668	HH	427	3661	0.04%	0.001%
74	6.684	6.668	6.691	HH	427	4666	0.05%	0.002%
75	6.699	6.691	6.715	HH	400	4081	0.05%	0.001%
76	6.719	6.715	6.732	HH	183	1510	0.02%	0.001%
77	6.742	6.732	6.754	HH	258	2946	0.03%	0.001%
78	6.773	6.754	6.793	HH	1009	12522	0.15%	0.004%
79	6.818	6.793	6.866	HH	780	20833	0.24%	0.007%
80	6.894	6.866	6.912	HH	1575	21199	0.25%	0.007%
81	6.947	6.912	6.969	HH	594	15720	0.18%	0.005%
82	6.996	6.969	7.045	HH	2321	59885	0.70%	0.020%
83	7.060	7.045	7.101	HH	1563	34757	0.41%	0.012%
84	7.120	7.101	7.140	HH	3605	45714	0.53%	0.015%
85	7.159	7.140	7.184	HH	1250	26959	0.32%	0.009%
86	7.196	7.184	7.203	HH	899	9552	0.11%	0.003%
87	7.221	7.203	7.235	HH	1120	18675	0.22%	0.006%
88	7.255	7.235	7.297	HH	6567	89065	1.04%	0.030%
89	7.315	7.297	7.339	HH	1590	27428	0.32%	0.009%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

90	7.348	7.339	7.369	HH	889	13713	0.16%	0.005%
91	7.395	7.369	7.405	HH	790	15438		
92	7.425	7.405	7.432	HH	845	12316		
93	7.451	7.432	7.466	HH	1214	18634		
94	7.496	7.466	7.540	HH	1877	61858		
95	7.564	7.540	7.589	HH	1233	30246		
96	7.615	7.589	7.645	HH	1170	29747	0.35%	0.010%
97	7.663	7.645	7.702	HH	1542	36357	0.43%	0.012%
98	7.724	7.702	7.746	HH	1279	25454	0.30%	0.008%
99	7.749	7.746	7.759	HH	841	6484	0.08%	0.002%
100	7.787	7.759	7.798	HH	1053	21426	0.25%	0.007%
101	7.803	7.798	7.813	HH	1104	9316	0.11%	0.003%
102	7.817	7.813	7.837	HH	1020	12558	0.15%	0.004%
103	7.864	7.837	7.922	HH	6017	127997	1.50%	0.043%
104	7.939	7.922	7.949	HH	1430	21733	0.25%	0.007%
105	7.962	7.949	7.975	HH	1655	23659	0.28%	0.008%
106	8.020	7.975	8.050	HH	4709	111523	1.30%	0.037%
107	8.074	8.050	8.095	HH	2712	59522	0.70%	0.020%
108	8.116	8.095	8.123	HH	11759	122913	1.44%	0.041%
109	8.130	8.123	8.151	HH	11314	130721	1.53%	0.043%
110	8.157	8.151	8.183	HH	3640	62360	0.73%	0.021%
111	8.191	8.183	8.202	HH	3157	36149	0.42%	0.012%
112	8.234	8.202	8.251	HH	29226	377345	4.41%	0.125%
113	8.262	8.251	8.284	HH	16651	190409	2.23%	0.063%
114	8.314	8.284	8.320	HH	4311	79251	0.93%	0.026%
115	8.329	8.320	8.365	HH	4666	90067	1.05%	0.030%
116	8.413	8.365	8.459	HH	12507	407604	4.77%	0.135%
117	8.472	8.459	8.489	HH	3385	53691	0.63%	0.018%
118	8.509	8.489	8.533	HH	7639	114501	1.34%	0.038%
119	8.561	8.533	8.582	HH	4166	87081	1.02%	0.029%
120	8.590	8.582	8.613	HH	2555	43102	0.50%	0.014%
121	8.630	8.613	8.645	HH	2551	45647	0.53%	0.015%
122	8.664	8.645	8.684	HH	3225	68975	0.81%	0.023%
123	8.715	8.684	8.747	HH	37777	469393	5.49%	0.156%
124	8.770	8.747	8.805	HH	10421	191731	2.24%	0.064%
125	8.837	8.805	8.856	HH	6911	147482	1.72%	0.049%
126	8.871	8.856	8.875	HH	4209	44425	0.52%	0.015%
127	8.884	8.875	8.895	HH	4315	50930	0.60%	0.017%
128	8.912	8.895	8.933	HH	5310	100283	1.17%	0.033%
129	8.960	8.933	8.975	HH	17222	248923	2.91%	0.083%
130	8.991	8.975	9.017	HH	23801	315555	3.69%	0.105%
131	9.034	9.017	9.050	HH	7810	118703	1.39%	0.039%
132	9.086	9.050	9.112	HH	8489	239233	2.80%	0.080%
133	9.132	9.112	9.149	HH	14842	193229	2.26%	0.064%
134	9.172	9.149	9.223	HH	17340	349072	4.08%	0.116%
135	9.234	9.223	9.260	HH	4106	84811	0.99%	0.028%
136	9.289	9.260	9.305	HH	17465	251582	2.94%	0.084%
137	9.319	9.305	9.341	HH	14986	200270	2.34%	0.067%
138	9.350	9.341	9.355	HH	4861	39347	0.46%	0.013%
139	9.367	9.355	9.384	HH	5118	86103	1.01%	0.029%
140	9.424	9.384	9.447	HH	16662	336153	3.93%	0.112%
141	9.502	9.447	9.522	HH	42510	677549	7.92%	0.225%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

rteres

142	9.531	9.522	9.560	HH	10891	183602	2.15%	0.061%
143	9.585	9.560	9.603	HH	17568	271189	3	
144	9.623	9.603	9.637	HH	13490	218254	2	
145	9.654	9.637	9.677	HH	21088	333235	3	
146	9.715	9.677	9.738	HH	18917	399017	4	
147	9.765	9.738	9.803	HH	7999	289661	3	
148	9.829	9.803	9.862	HH	21903	431447	5.05%	0.143%
149	9.883	9.862	9.900	HH	10915	220895	2.58%	0.073%
150	9.929	9.900	9.973	HH	28720	668144	7.81%	0.222%
151	9.989	9.973	10.006	HH	11253	185442	2.17%	0.062%
152	10.029	10.006	10.061	HH	10212	276551	3.23%	0.092%
153	10.097	10.061	10.148	HH	11984	452629	5.29%	0.150%
154	10.175	10.148	10.185	HH	7906	167112	1.95%	0.056%
155	10.201	10.185	10.225	HH	8671	194818	2.28%	0.065%
156	10.255	10.225	10.275	HH	13291	314194	3.67%	0.104%
157	10.286	10.275	10.294	HH	8880	95225	1.11%	0.032%
158	10.326	10.294	10.336	HH	10268	241337	2.82%	0.080%
159	10.361	10.336	10.370	HH	16126	263011	3.08%	0.087%
160	10.388	10.370	10.411	HH	26377	474084	5.54%	0.158%
161	10.427	10.411	10.453	HH	20155	382629	4.47%	0.127%
162	10.465	10.453	10.477	HH	11502	157790	1.85%	0.052%
163	10.508	10.477	10.539	HH	21529	630760	7.38%	0.210%
164	10.557	10.539	10.595	HH	28898	661588	7.74%	0.220%
165	10.602	10.595	10.616	HH	14478	175994	2.06%	0.059%
166	10.639	10.616	10.657	HH	17212	368326	4.31%	0.122%
167	10.681	10.657	10.692	HH	28252	456334	5.34%	0.152%
168	10.709	10.692	10.753	HH	37137	830563	9.71%	0.276%
169	10.765	10.753	10.769	HH	15388	144930	1.69%	0.048%
170	10.811	10.769	10.831	HH	24093	708434	8.28%	0.235%
171	10.850	10.831	10.861	HH	17057	296025	3.46%	0.098%
172	10.910	10.861	10.943	HH	441313	5495084	64.26%	1.827%
173	10.981	10.943	11.028	HH	148456	2241929	26.22%	0.745%
174	11.040	11.028	11.048	HH	17029	197167	2.31%	0.066%
175	11.057	11.048	11.076	HH	16836	275348	3.22%	0.092%
176	11.095	11.076	11.115	HH	17710	392363	4.59%	0.130%
177	11.125	11.115	11.133	HH	16152	175783	2.06%	0.058%
178	11.154	11.133	11.177	HH	17476	438177	5.12%	0.146%
179	11.203	11.177	11.240	HH	29887	837015	9.79%	0.278%
180	11.262	11.240	11.285	HH	19994	510590	5.97%	0.170%
181	11.303	11.285	11.309	HH	21693	281366	3.29%	0.094%
182	11.311	11.309	11.315	HH	21341	74868	0.88%	0.025%
183	11.320	11.315	11.333	HH	21327	224425	2.62%	0.075%
184	11.343	11.333	11.366	HH	21278	402970	4.71%	0.134%
185	11.408	11.366	11.412	HH	27463	618661	7.23%	0.206%
186	11.428	11.412	11.438	HH	31897	461083	5.39%	0.153%
187	11.451	11.438	11.476	HH	35210	645784	7.55%	0.215%
188	11.514	11.476	11.532	HH	28760	809148	9.46%	0.269%
189	11.562	11.532	11.586	HH	29811	801717	9.38%	0.266%
190	11.601	11.586	11.622	HH	27548	533126	6.23%	0.177%
191	11.647	11.622	11.671	HH	26243	690589	8.08%	0.230%
192	11.712	11.671	11.726	HH	84317	1425161	16.67%	0.474%
193	11.741	11.726	11.771	HH	100987	1456186	17.03%	0.484%
194	11.822	11.771	11.840	HH	76582	1891298	22.12%	0.629%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

195	11.859	11.840	11.873	HH	71555	1036111	12.12%	0.344%
196	11.889	11.873	11.930	HH	86457	1564308	18	
197	11.947	11.930	11.952	HH	25100	335922	3	
198	11.976	11.952	11.995	HH	28570	671346	7	
199	12.069	11.995	12.090	HH	58875	1936115	22	
200	12.104	12.090	12.124	HH	32961	624376	7	
201	12.149	12.124	12.165	HH	35921	807289	9.44%	0.268%
202	12.184	12.165	12.200	HH	68158	1050721	12.29%	0.349%
203	12.214	12.200	12.267	HH	63137	1611056	18.84%	0.536%
204	12.314	12.267	12.376	HH	97941	2896485	33.87%	0.963%
205	12.388	12.376	12.402	HH	32757	496290	5.80%	0.165%
206	12.434	12.402	12.446	HH	40041	963396	11.27%	0.320%
207	12.457	12.446	12.481	HH	38401	742051	8.68%	0.247%
208	12.505	12.481	12.540	HH	48814	1424563	16.66%	0.474%
209	12.560	12.540	12.575	HH	51504	888368	10.39%	0.295%
210	12.581	12.575	12.592	HH	42198	438590	5.13%	0.146%
211	12.614	12.592	12.634	HH	79676	1459571	17.07%	0.485%
212	12.650	12.634	12.667	HH	55305	1008808	11.80%	0.335%
213	12.680	12.667	12.699	HH	51593	924567	10.81%	0.307%
214	12.733	12.699	12.772	HH	609617	8420901	98.48%	2.799%
215	12.790	12.772	12.809	HH	41052	837454	9.79%	0.278%
216	12.830	12.809	12.841	HH	38753	720777	8.43%	0.240%
217	12.862	12.841	12.875	HH	43705	816149	9.54%	0.271%
218	12.909	12.875	12.927	HH	59361	1544007	18.06%	0.513%
219	12.942	12.927	12.960	HH	52842	998489	11.68%	0.332%
220	12.970	12.960	12.991	HH	48311	832438	9.73%	0.277%
221	13.029	12.991	13.053	HH	539639	7154890	83.67%	2.378%
222	13.081	13.053	13.097	HH	82805	1544304	18.06%	0.513%
223	13.114	13.097	13.147	HH	83441	1727974	20.21%	0.574%
224	13.170	13.147	13.178	HH	43751	790907	9.25%	0.263%
225	13.201	13.178	13.213	HH	58776	1069126	12.50%	0.355%
226	13.222	13.213	13.255	HH	54668	1212654	14.18%	0.403%
227	13.293	13.255	13.308	HH	66278	1605211	18.77%	0.534%
228	13.327	13.308	13.350	HH	82555	1667169	19.50%	0.554%
229	13.370	13.350	13.390	HH	60105	1326255	15.51%	0.441%
230	13.425	13.390	13.441	HH	61766	1637260	19.15%	0.544%
231	13.456	13.441	13.462	HH	55823	683659	7.99%	0.227%
232	13.486	13.462	13.521	HH	75214	2102949	24.59%	0.699%
233	13.541	13.521	13.568	HH	59361	1493162	17.46%	0.496%
234	13.615	13.568	13.643	HH	107779	3125912	36.56%	1.039%
235	13.648	13.643	13.652	HH	48885	273283	3.20%	0.091%
236	13.667	13.652	13.670	HH	49263	533349	6.24%	0.177%
237	13.686	13.670	13.701	HH	54577	945100	11.05%	0.314%
238	13.723	13.701	13.742	HH	72618	1537601	17.98%	0.511%
239	13.760	13.742	13.781	HH	89819	1623959	18.99%	0.540%
240	13.799	13.781	13.813	HH	57227	1058041	12.37%	0.352%
241	13.823	13.813	13.833	HH	54900	650489	7.61%	0.216%
242	13.889	13.833	13.910	HH	91191	3196163	37.38%	1.062%
243	13.929	13.910	13.968	HH	80995	2239922	26.19%	0.745%
244	14.009	13.968	14.028	HH	64112	2067582	24.18%	0.687%
245	14.039	14.028	14.068	HH	58362	1375475	16.09%	0.457%
246	14.089	14.068	14.096	HH	57701	951312	11.13%	0.316%

Instrument :
FID_G
ClientSampleId :
SB11

rteres

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

247	14.101	14.096	14.108	HH	58060	424046	4.96%	0.141%
248	14.120	14.108	14.125	HH	57026	567201	6	
249	14.143	14.125	14.163	HH	58838	1322948	15	
250	14.182	14.163	14.190	HH	57121	887623	10	
251	14.204	14.190	14.219	HH	58901	1013022	11	
252	14.234	14.219	14.242	HH	57315	759911	8	
253	14.260	14.242	14.273	HH	61393	1115712	13.05%	0.371%
254	14.287	14.273	14.296	HH	62099	857460	10.03%	0.285%
255	14.318	14.296	14.329	HH	74793	1379320	16.13%	0.458%
256	14.352	14.329	14.375	HH	106923	2293102	26.82%	0.762%
257	14.383	14.375	14.408	HH	70519	1353718	15.83%	0.450%
258	14.456	14.408	14.480	HH	73604	2856093	33.40%	0.949%
259	14.525	14.480	14.545	HH	94807	3004041	35.13%	0.999%
260	14.557	14.545	14.569	HH	74044	1029093	12.03%	0.342%
261	14.591	14.569	14.615	HH	133472	2656782	31.07%	0.883%
262	14.656	14.615	14.676	HH	105826	3113799	36.41%	1.035%
263	14.690	14.676	14.715	HH	74216	1673338	19.57%	0.556%
264	14.718	14.715	14.731	HH	73673	736542	8.61%	0.245%
265	14.750	14.731	14.757	HH	75895	1146305	13.41%	0.381%
266	14.799	14.757	14.831	HH	198000	5046305	59.01%	1.677%
267	14.857	14.831	14.874	HH	83365	1951092	22.82%	0.649%
268	14.908	14.874	14.928	HH	286468	5256016	61.47%	1.747%
269	14.949	14.928	14.978	HH	294489	4794169	56.07%	1.594%
270	15.001	14.978	15.028	HH	81420	2293182	26.82%	0.762%
271	15.066	15.028	15.091	HH	127984	3578634	41.85%	1.190%
272	15.097	15.091	15.105	HH	81398	689442	8.06%	0.229%
273	15.108	15.105	15.121	HH	81984	735725	8.60%	0.245%
274	15.150	15.121	15.187	HH	91555	3273795	38.29%	1.088%
275	15.216	15.187	15.231	HH	98348	2304822	26.95%	0.766%
276	15.240	15.231	15.276	HH	91781	2375113	27.78%	0.790%
277	15.288	15.276	15.308	HH	89421	1634548	19.12%	0.543%
278	15.314	15.308	15.329	HH	84264	1026711	12.01%	0.341%
279	15.352	15.329	15.379	HH	94033	2672801	31.26%	0.888%
280	15.410	15.379	15.450	HH	107815	3976536	46.50%	1.322%
281	15.463	15.450	15.468	HH	84541	901007	10.54%	0.300%
282	15.488	15.468	15.493	HH	88646	1304324	15.25%	0.434%
283	15.536	15.493	15.556	HH	132803	3918556	45.83%	1.303%
284	15.580	15.556	15.601	HH	142845	3069267	35.89%	1.020%
285	15.619	15.601	15.651	HH	109986	2968609	34.72%	0.987%
286	15.660	15.651	15.674	HH	94256	1283002	15.00%	0.426%
287	15.719	15.674	15.727	HH	107383	3067103	35.87%	1.020%
288	15.744	15.727	15.786	HH	111457	3666914	42.88%	1.219%
289	15.823	15.786	15.848	HH	99677	3553503	41.56%	1.181%
290	15.852	15.848	15.876	HH	95346	1589795	18.59%	0.528%
291	15.880	15.876	15.886	HH	92263	549615	6.43%	0.183%
292	15.906	15.886	15.925	HH	103757	2266647	26.51%	0.753%
293	15.944	15.925	15.966	HH	103580	2476226	28.96%	0.823%
294	16.003	15.966	16.017	HH	106500	3074068	35.95%	1.022%
295	16.021	16.017	16.046	HH	102910	1774963	20.76%	0.590%
296	16.068	16.046	16.076	HH	100837	1757208	20.55%	0.584%
297	16.081	16.076	16.086	HH	100230	598574	7.00%	0.199%
298	16.094	16.086	16.105	HH	100295	1139376	13.32%	0.379%
299	16.109	16.105	16.120	HH	97790	842827	9.86%	0.280%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

300	16.125	16.120	16.130	HH	98370	582731	6.81%	0.194%
301	16.154	16.130	16.160	HH	101234	1838693	21	
302	16.196	16.160	16.233	HH	114895	4645750	54	
303	16.254	16.233	16.276	HH	114506	2866128	33	
304	16.292	16.276	16.317	HH	115663	2710440	31	
305	16.322	16.317	16.330	HH	110969	856534	10	
306	16.334	16.330	16.358	HH	110464	1857320	21.72%	0.617%
307	16.397	16.358	16.415	HH	124419	4055274	47.42%	1.348%
308	16.472	16.415	16.489	HH	345103	8551085	100.00%	2.842%
309	16.497	16.489	16.526	HH	217774	3698371	43.25%	1.229%
310	16.532	16.526	16.537	HH	114345	703683	8.23%	0.234%
311	16.547	16.537	16.553	HH	115909	1116989	13.06%	0.371%
312	16.597	16.553	16.619	HH	162489	5366771	62.76%	1.784%
313	16.639	16.619	16.649	HH	129544	2259256	26.42%	0.751%
314	16.654	16.649	16.668	HH	128257	1423300	16.64%	0.473%
315	16.684	16.668	16.691	HH	127320	1734146	20.28%	0.576%
316	16.695	16.691	16.701	HH	125619	737586	8.63%	0.245%
317	16.714	16.701	16.744	HH	130931	3279725	38.35%	1.090%
318	16.792	16.744	16.821	HH	275793	7969051	93.19%	2.649%
319	16.850	16.821	16.896	HH	339784	8275262	96.77%	2.751%
320	16.949	16.896	16.972	HH	188574	6780400	79.29%	2.254%
321	16.980	16.972	16.998	HH	146626	2306277	26.97%	0.767%

Sum of corrected areas: 300834103

FG072822.M Mon Aug 15 17:29:00 2022

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-02	**SB18**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-04	**SB19**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-06	**SB20**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-08	**SB15**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-10	**SB16**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-12	**SB17**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-14	**SB13**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-16	**SB12**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-18	**SB14**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			TCLP Mercury	7470A		08/15/22	08/15/22
N4189-20	**SB11**	**TCLP**			**08/11/22**		**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/16/22
			TCLP Mercury	7470A		08/15/22	08/15/22

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-02	SB18	TCLP	Barium	1,160.000		77.9	500	ug/L
N4189-02	SB18	TCLP	Chromium	129.000		10.4	50.0	ug/L
Client ID : SB19								
N4189-04	SB19	TCLP	Barium	1,550.000		77.9	500	ug/L
Client ID : SB20								
N4189-06	SB20	TCLP	Barium	1,430.000		77.9	500	ug/L
N4189-06	SB20	TCLP	Chromium	14.000	J	10.4	50.0	ug/L
N4189-06	SB20	TCLP	Lead	34.200	J	19.4	60.0	ug/L
Client ID : SB15								
N4189-08	SB15	TCLP	Barium	773.000		77.9	500	ug/L
N4189-08	SB15	TCLP	Chromium	14.300	J	10.4	50.0	ug/L
Client ID : SB16								
N4189-10	SB16	TCLP	Barium	1,540.000		77.9	500	ug/L
N4189-10	SB16	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4189-10	SB16	TCLP	Lead	19.500	J	19.4	60.0	ug/L
Client ID : SB17								
N4189-12	SB17	TCLP	Barium	1,280.000		77.9	500	ug/L
N4189-12	SB17	TCLP	Chromium	10.700	J	10.4	50.0	ug/L
N4189-12	SB17	TCLP	Lead	21.400	J	19.4	60.0	ug/L
Client ID : SB13								
N4189-14	SB13	TCLP	Barium	1,210.000		77.9	500	ug/L
N4189-14	SB13	TCLP	Chromium	11.200	J	10.4	50.0	ug/L
N4189-14	SB13	TCLP	Lead	31.900	J	19.4	60.0	ug/L
Client ID : SB12								
N4189-16	SB12	TCLP	Barium	1,190.000		77.9	500	ug/L
N4189-16	SB12	TCLP	Chromium	23.800	J	10.4	50.0	ug/L
Client ID : SB14								
N4189-18	SB14	TCLP	Barium	1,180.000		77.9	500	ug/L
N4189-18	SB14	TCLP	Chromium	11.600	J	10.4	50.0	ug/L
Client ID : SB11								
N4189-20	SB11	TCLP	Barium	1,140.000		77.9	500	ug/L
N4189-20	SB11	TCLP	Chromium	95.900		10.4	50.0	ug/L
N4189-20	SB11	TCLP	Lead	23.100	J	19.4	60.0	ug/L

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-39-3	Barium	1160		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-47-3	Chromium	129		1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:15	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-39-3	Barium	1550		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:18	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-06	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-39-3	Barium	1430		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-47-3	Chromium	14.0	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7439-92-1	Lead	34.2	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:20	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-08	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-39-3	Barium	773		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-47-3	Chromium	14.3	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:22	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-10	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-39-3	Barium	1540		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-47-3	Chromium	11.0	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7439-92-1	Lead	19.5	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:24	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-12	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-39-3	Barium	1280		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-47-3	Chromium	10.7	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7439-92-1	Lead	21.4	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:27	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-14	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-39-3	Barium	1210		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-47-3	Chromium	11.2	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7439-92-1	Lead	31.9	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:33	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-16	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-39-3	Barium	1190		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-47-3	Chromium	23.8	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:36	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-18	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-39-3	Barium	1180		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-47-3	Chromium	11.6	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:38	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-20	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-39-3	Barium	1140		1	77.9	500	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-47-3	Chromium	95.9		1	10.4	50.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7439-92-1	Lead	23.1	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:40	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV87	Mercury	3.82	4.0	96	90 - 110	CV	08/15/2022	14:27	LB121524

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV37	Mercury	4.78	5.0	96	90 - 110	CV	08/15/2022	14:31	LB121524
CCV38	Mercury	4.96	5.0	99	90 - 110	CV	08/15/2022	15:02	LB121524
CCV39	Mercury	5.04	5.0	101	90 - 110	CV	08/15/2022	15:29	LB121524
CCV40	Mercury	4.84	5.0	97	90 - 110	CV	08/15/2022	15:56	LB121524
CCV41	Mercury	5.01	5.0	100	90 - 110	CV	08/15/2022	16:23	LB121524
CCV42	Mercury	4.98	5.0	100	90 - 110	CV	08/15/2022	16:48	LB121524

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	993	1000	99	90 - 110	P	08/15/2022	15:11	LB121529
	Barium	524	520	101	90 - 110	P	08/15/2022	15:11	LB121529
	Cadmium	481	510	94	90 - 110	P	08/15/2022	15:11	LB121529
	Chromium	526	520	101	90 - 110	P	08/15/2022	15:11	LB121529
	Lead	981	1000	98	90 - 110	P	08/15/2022	15:11	LB121529
	Selenium	1040	1000	104	90 - 110	P	08/15/2022	15:11	LB121529
	Silver	253	250	101	90 - 110	P	08/15/2022	15:11	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Arsenic	20.3	20.0	102	80 - 120	P	08/15/2022	15:23	LB121529
	Barium	108	100	108	80 - 120	P	08/15/2022	15:23	LB121529
	Cadmium	5.99	6.0	100	80 - 120	P	08/15/2022	15:23	LB121529
	Chromium	10.9	10.0	109	80 - 120	P	08/15/2022	15:23	LB121529
	Lead	11.6	12.0	97	80 - 120	P	08/15/2022	15:23	LB121529
	Selenium	20.1	20.0	101	80 - 120	P	08/15/2022	15:23	LB121529
	Silver	10.5	10.0	104	80 - 120	P	08/15/2022	15:23	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	5160	5000	103	90 - 110	P	08/15/2022	15:51	LB121529
	Barium	9780	10000	98	90 - 110	P	08/15/2022	15:51	LB121529
	Cadmium	2570	2500	103	90 - 110	P	08/15/2022	15:51	LB121529
	Chromium	1070	1000	107	90 - 110	P	08/15/2022	15:51	LB121529
	Lead	5020	5000	100	90 - 110	P	08/15/2022	15:51	LB121529
	Selenium	5160	5000	103	90 - 110	P	08/15/2022	15:51	LB121529
	Silver	1350	1250	108	90 - 110	P	08/15/2022	15:51	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Arsenic	19.9	20.0	99	80 - 120	P	08/15/2022	16:00	LB121529
	Barium	106	100	106	80 - 120	P	08/15/2022	16:00	LB121529
	Cadmium	6.09	6.0	101	80 - 120	P	08/15/2022	16:00	LB121529
	Chromium	11.2	10.0	112	80 - 120	P	08/15/2022	16:00	LB121529
	Lead	11.1	12.0	93	80 - 120	P	08/15/2022	16:00	LB121529
	Selenium	23.0	20.0	115	80 - 120	P	08/15/2022	16:00	LB121529
	Silver	10.8	10.0	108	80 - 120	P	08/15/2022	16:00	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Arsenic	4990	5000	100	90 - 110	P	08/15/2022	17:06	LB121529
	Barium	9180	10000	92	90 - 110	P	08/15/2022	17:06	LB121529
	Cadmium	2490	2500	99	90 - 110	P	08/15/2022	17:06	LB121529
	Chromium	1050	1000	105	90 - 110	P	08/15/2022	17:06	LB121529
	Lead	4840	5000	97	90 - 110	P	08/15/2022	17:06	LB121529
	Selenium	4990	5000	100	90 - 110	P	08/15/2022	17:06	LB121529
	Silver	1330	1250	107	90 - 110	P	08/15/2022	17:06	LB121529
CCV03	Arsenic	4950	5000	99	90 - 110	P	08/15/2022	17:57	LB121529
	Barium	9820	10000	98	90 - 110	P	08/15/2022	17:57	LB121529
	Cadmium	2470	2500	99	90 - 110	P	08/15/2022	17:57	LB121529
	Chromium	1040	1000	104	90 - 110	P	08/15/2022	17:57	LB121529
	Lead	4810	5000	96	90 - 110	P	08/15/2022	17:57	LB121529
	Selenium	4950	5000	99	90 - 110	P	08/15/2022	17:57	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	17:57	LB121529
CCV04	Arsenic	5030	5000	101	90 - 110	P	08/15/2022	19:07	LB121529
	Barium	9700	10000	97	90 - 110	P	08/15/2022	19:07	LB121529
	Cadmium	2480	2500	99	90 - 110	P	08/15/2022	19:07	LB121529
	Chromium	1050	1000	105	90 - 110	P	08/15/2022	19:07	LB121529
	Lead	4870	5000	97	90 - 110	P	08/15/2022	19:07	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	19:07	LB121529
	Silver	1330	1250	107	90 - 110	P	08/15/2022	19:07	LB121529
CCV05	Arsenic	4980	5000	100	90 - 110	P	08/15/2022	19:22	LB121529
	Barium	9570	10000	96	90 - 110	P	08/15/2022	19:22	LB121529
	Cadmium	2420	2500	97	90 - 110	P	08/15/2022	19:22	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/15/2022	19:22	LB121529
	Lead	4780	5000	96	90 - 110	P	08/15/2022	19:22	LB121529
	Selenium	5010	5000	100	90 - 110	P	08/15/2022	19:22	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	19:22	LB121529
CCV06	Arsenic	5000	5000	100	90 - 110	P	08/15/2022	20:10	LB121529
	Barium	9640	10000	96	90 - 110	P	08/15/2022	20:10	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	20:10	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	20:10	LB121529
	Lead	4810	5000	96	90 - 110	P	08/15/2022	20:10	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	20:10	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV06	Silver	1330	1250	106	90 - 110	P	08/15/2022	20:10	LB121529
CCV07	Arsenic	4970	5000	99	90 - 110	P	08/15/2022	20:56	LB121529
	Barium	9550	10000	96	90 - 110	P	08/15/2022	20:56	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	20:56	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	20:56	LB121529
	Lead	4800	5000	96	90 - 110	P	08/15/2022	20:56	LB121529
	Selenium	5000	5000	100	90 - 110	P	08/15/2022	20:56	LB121529
	Silver	1320	1250	105	90 - 110	P	08/15/2022	20:56	LB121529
CCV08	Arsenic	4970	5000	99	90 - 110	P	08/15/2022	21:45	LB121529
	Barium	9620	10000	96	90 - 110	P	08/15/2022	21:45	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	21:45	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	21:45	LB121529
	Lead	4830	5000	97	90 - 110	P	08/15/2022	21:45	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	21:45	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	21:45	LB121529
CCV09	Arsenic	4900	5000	98	90 - 110	P	08/15/2022	22:32	LB121529
	Barium	9640	10000	96	90 - 110	P	08/15/2022	22:32	LB121529
	Cadmium	2390	2500	96	90 - 110	P	08/15/2022	22:32	LB121529
	Chromium	1010	1000	101	90 - 110	P	08/15/2022	22:32	LB121529
	Lead	4760	5000	95	90 - 110	P	08/15/2022	22:32	LB121529
	Selenium	4970	5000	99	90 - 110	P	08/15/2022	22:32	LB121529
	Silver	1300	1250	104	90 - 110	P	08/15/2022	22:32	LB121529
CCV10	Arsenic	4900	5000	98	90 - 110	P	08/15/2022	23:21	LB121529
	Barium	9730	10000	97	90 - 110	P	08/15/2022	23:21	LB121529
	Cadmium	2400	2500	96	90 - 110	P	08/15/2022	23:21	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/15/2022	23:21	LB121529
	Lead	4780	5000	96	90 - 110	P	08/15/2022	23:21	LB121529
	Selenium	4980	5000	100	90 - 110	P	08/15/2022	23:21	LB121529
	Silver	1300	1250	104	90 - 110	P	08/15/2022	23:21	LB121529
CCV11	Arsenic	4910	5000	98	90 - 110	P	08/16/2022	00:11	LB121529
	Barium	9540	10000	95	90 - 110	P	08/16/2022	00:11	LB121529
	Cadmium	2400	2500	96	90 - 110	P	08/16/2022	00:11	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	00:11	LB121529
	Lead	4800	5000	96	90 - 110	P	08/16/2022	00:11	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV11	Selenium	4980	5000	100	90 - 110	P	08/16/2022	00:11	LB121529
	Silver	1290	1250	104	90 - 110	P	08/16/2022	00:11	LB121529
CCV12	Arsenic	4850	5000	97	90 - 110	P	08/16/2022	00:58	LB121529
	Barium	9480	10000	95	90 - 110	P	08/16/2022	00:58	LB121529
	Cadmium	2380	2500	95	90 - 110	P	08/16/2022	00:58	LB121529
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	00:58	LB121529
	Lead	4750	5000	95	90 - 110	P	08/16/2022	00:58	LB121529
	Selenium	4940	5000	99	90 - 110	P	08/16/2022	00:58	LB121529
	Silver	1290	1250	103	90 - 110	P	08/16/2022	00:58	LB121529
CCV13	Arsenic	4840	5000	97	90 - 110	P	08/16/2022	01:38	LB121529
	Barium	9500	10000	95	90 - 110	P	08/16/2022	01:38	LB121529
	Cadmium	2390	2500	96	90 - 110	P	08/16/2022	01:38	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	01:38	LB121529
	Lead	4790	5000	96	90 - 110	P	08/16/2022	01:38	LB121529
	Selenium	4930	5000	99	90 - 110	P	08/16/2022	01:38	LB121529
	Silver	1290	1250	104	90 - 110	P	08/16/2022	01:38	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRA	Mercury	0.19	0.2	95	40 - 160	CV	08/15/2022	14:39	LB121524
CRI01	Arsenic	19.1	20.0	95	40 - 160	P	08/15/2022	15:34	LB121529
	Barium	104	100	104	40 - 160	P	08/15/2022	15:34	LB121529
	Cadmium	6.01	6.0	100	40 - 160	P	08/15/2022	15:34	LB121529
	Chromium	11.0	10.0	110	40 - 160	P	08/15/2022	15:34	LB121529
	Lead	11.2	12.0	93	40 - 160	P	08/15/2022	15:34	LB121529
	Selenium	21.5	20.0	108	40 - 160	P	08/15/2022	15:34	LB121529
	Silver	10.4	10.0	104	40 - 160	P	08/15/2022	15:34	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB87	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	14:29	LB121524

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB37	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	14:33	LB121524
CCB38	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:04	LB121524
CCB39	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:31	LB121524
CCB40	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:58	LB121524
CCB41	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	16:26	LB121524
CCB42	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	16:51	LB121524

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	15:30	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	15:30	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	15:30	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	15:30	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	15:30	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	15:30	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	15:30	LB121529

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	16:04	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	16:04	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	16:04	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	16:04	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	16:04	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	16:04	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	16:04	LB121529
CCB02	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	17:10	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	17:10	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	17:10	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	17:10	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	17:10	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	17:10	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	17:10	LB121529
CCB03	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	18:00	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	18:00	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	18:00	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	18:00	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	18:00	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	18:00	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	18:00	LB121529
CCB04	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	19:10	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	19:10	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	19:10	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	19:10	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	19:10	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	19:10	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	19:10	LB121529
CCB05	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	19:26	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	19:26	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	19:26	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	19:26	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	19:26	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	19:26	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	19:26	LB121529
CCB06	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	20:14	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	20:14	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	20:14	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	20:14	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	20:14	LB121529

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	20:14	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	20:14	LB121529
CCB07	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	21:00	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	21:00	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	21:00	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	21:00	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	21:00	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	21:00	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	21:00	LB121529
CCB08	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	21:49	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	21:49	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	21:49	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	21:49	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	21:49	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	21:49	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	21:49	LB121529
CCB09	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	22:36	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	22:36	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	22:36	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	22:36	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	22:36	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	22:36	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	22:36	LB121529
CCB10	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	23:25	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	23:25	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	23:25	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	23:25	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	23:25	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	23:25	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	23:25	LB121529
CCB11	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	00:14	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	00:14	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	00:14	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	00:14	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	00:14	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	00:14	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	00:14	LB121529
CCB12	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	01:02	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	01:02	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	01:02	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB12	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	01:02	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	01:02	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	01:02	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	01:02	LB121529
CCB13	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	01:42	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	01:42	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	01:42	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	01:42	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	01:42	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	01:42	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	01:42	LB121529

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146975TB		**WATER**		**Batch Number:**	**PB147013**		**Prep Date:**	**08/15/2022**	
	Mercury	2.00	<2.00	U	2.00	CV	08/15/2022	16:30	LB121524

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB147013BL		**WATER**		**Batch Number:**	**PB147013**		**Prep Date:**	**08/15/2022**	
	Mercury	0.20	<0.20	U	0.20	CV	08/15/2022	14:46	LB121524

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146975TB		**WATER**		**Batch Number:**	**PB147028**		**Prep Date:**	**08/14/2022**	
	Arsenic	100	<100	U	100	P	08/15/2022	22:28	LB121529
	Barium	500	<500	U	500	P	08/15/2022	22:28	LB121529
	Cadmium	30.0	<30.0	U	30.0	P	08/15/2022	22:28	LB121529
	Chromium	36.9	<50.0	J	50.0	P	08/15/2022	22:28	LB121529
	Lead	60.0	<60.0	U	60.0	P	08/15/2022	22:28	LB121529
	Selenium	100	<100	U	100	P	08/15/2022	22:28	LB121529
	Silver	50.0	<50.0	U	50.0	P	08/15/2022	22:28	LB121529

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB147028BL		**WATER**		**Batch Number:**	**PB147028**		**Prep Date:**	**08/14/2022**	
	Arsenic	100	<100	U	100	P	08/15/2022	22:20	LB121529
	Barium	500	<500	U	500	P	08/15/2022	22:20	LB121529
	Cadmium	30.0	<30.0	U	30.0	P	08/15/2022	22:20	LB121529
	Chromium	50.0	<50.0	U	50.0	P	08/15/2022	22:20	LB121529
	Lead	60.0	<60.0	U	60.0	P	08/15/2022	22:20	LB121529
	Selenium	100	<100	U	100	P	08/15/2022	22:20	LB121529
	Silver	50.0	<50.0	U	50.0	P	08/15/2022	22:20	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Arsenic	-3.87			-20	20	08/15/2022	15:38	LB121529
	Barium	8.14	6.0	136	-94	106	08/15/2022	15:38	LB121529
	Cadmium	-0.30	1.0	30	-5	7	08/15/2022	15:38	LB121529
	Chromium	61.1	52.0	118	42	62	08/15/2022	15:38	LB121529
	Lead	-1.92			-12	12	08/15/2022	15:38	LB121529
	Selenium	-0.32			-20	20	08/15/2022	15:38	LB121529
	Silver	-7.67			-10	10	08/15/2022	15:38	LB121529
ICSAB01	Arsenic	95.8	100	96	85	120	08/15/2022	15:47	LB121529
	Barium	527	540	98	440	640	08/15/2022	15:47	LB121529
	Cadmium	982	970	101	820	1100	08/15/2022	15:47	LB121529
	Chromium	604	540	112	460	620	08/15/2022	15:47	LB121529
	Lead	49.7	49.0	101	37	61	08/15/2022	15:47	LB121529
	Selenium	53.6	46.0	116	26	66	08/15/2022	15:47	LB121529
	Silver	229	200	114	170	230	08/15/2022	15:47	LB121529

METAL QC DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4189

contract: loui01 **lab code:** CHEM **case no.:** N4189 **sas no.:** N4189

matrix: Water **sample id:** N4189-20 **client id:** SB11MS

Percent Solids for Sample: NA **Spiked ID:** N4189-20MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3740		100	U	4000	94		P
Barium	ug/L	75 - 125	2110		1140		1000	97		P
Cadmium	ug/L	75 - 125	936		30.0	U	1000	94		P
Chromium	ug/L	75 - 125	2010		95.9		2000	96		P
Lead	ug/L	75 - 125	4620		23.1	J	5000	92		P
Mercury	ug/L	75 - 125	42.7		2.00	U	40.0	107		CV
Selenium	ug/L	75 - 125	9420		100	U	10000	94		P
Silver	ug/L	75 - 125	380		50.0	U	380	100		P

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4189

contract: loui01 **lab code:** CHEM **case no.:** N4189 **sas no.:** N4189

matrix: Water **sample id:** N4189-20 **client id:** SB11MSD

Percent Solids for Sample: NA **Spiked ID:** N4189-20MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3700		100	U	4000	92		P
Barium	ug/L	75 - 125	2110		1140		1000	98		P
Cadmium	ug/L	75 - 125	935		30.0	U	1000	94		P
Chromium	ug/L	75 - 125	2020		95.9		2000	96		P
Lead	ug/L	75 - 125	4630		23.1	J	5000	92		P
Mercury	ug/L	75 - 125	35.2		2.00	U	40.0	88		CV
Selenium	ug/L	75 - 125	9340		100	U	10000	93		P
Silver	ug/L	75 - 125	381		50.0	U	380	100		P

CHEMTECH

Metals
- 5b -

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: Water **Sample ID:** N4189-20 **Client ID:** SB11DUP

Percent Solids for Sample: NA **Duplicate ID** N4189-20DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	1140		1150		1		P
Cadmium	ug/L	20	30.0	U	30.0	U			P
Chromium	ug/L	20	95.9		97.0		1		P
Lead	ug/L	20	23.1	J	60.0	U	200.0		P
Mercury	ug/L	20	2.00	U	2.00	U			CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: Water **Sample ID:** N4189-20MS **Client ID:** SB11MSD

Percent Solids for Sample: NA **Duplicate ID** N4189-20MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	3740		3700		1		P
Barium	ug/L	20	2110		2110		0		P
Cadmium	ug/L	20	936		935		0		P
Chromium	ug/L	20	2010		2020		0		P
Lead	ug/L	20	4620		4630		0		P
Mercury	ug/L	20	42.7		35.2		19		CV
Selenium	ug/L	20	9420		9340		1		P
Silver	ug/L	20	380		381		0		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB147013BS							
Mercury	ug/L	4.0	3.87		97	80 - 120	CV

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB147028BS							
Arsenic	ug/L	4000	3980		100	80 - 120	P
Barium	ug/L	1000	1070		107	80 - 120	P
Cadmium	ug/L	1000	947		95	80 - 120	P
Chromium	ug/L	2000	2160		108	80 - 120	P
Lead	ug/L	5000	4910		98	80 - 120	P
Selenium	ug/L	10000	10500		105	80 - 120	P
Silver	ug/L	380	411		108	80 - 120	P

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

SB11L

Lab Name: Chemtech Consulting Group **Contract:** loui01

Lab Code: CHEM **Lb No.:** lb121529 **Lab Sample ID :** N4189-20L **SDG No.:** N4189

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	100	U	500	U			P
Barium	1140		1170	J	2		P
Cadmium	30.0	U	150	U			P
Chromium	95.9		89.9	J	6		P
Lead	23.1	J	300	U	100.0		P
Mercury	2.00	U	10.0	U			CV
Selenium	100	U	500	U			P
Silver	50.0	U	250	U			P

METAL PREPARATION & INSTRUMENT DATA

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0001380	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000890	0.0000000	0.0000460	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001960	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001430	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0005750
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Arsenic	193.759	-0.0019440	0.0000000	0.0000000	0.0000000	0.0003800
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0002110	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000700	-0.0014440
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0004280	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0001890	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Arsenic	193.759	0.0000000	0.0002020	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	-0.0001570	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0001070	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0001560	-0.0003220
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0001090
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0001700	0.0000000	-0.0007490	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4189 **SAS No.:** N4189

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB147013**						
N4189-02	SB18	SAM	WATER	08/15/2022	3.0	30.0	
N4189-04	SB19	SAM	WATER	08/15/2022	3.0	30.0	
N4189-06	SB20	SAM	WATER	08/15/2022	3.0	30.0	
N4189-08	SB15	SAM	WATER	08/15/2022	3.0	30.0	
N4189-10	SB16	SAM	WATER	08/15/2022	3.0	30.0	
N4189-12	SB17	SAM	WATER	08/15/2022	3.0	30.0	
N4189-14	SB13	SAM	WATER	08/15/2022	3.0	30.0	
N4189-16	SB12	SAM	WATER	08/15/2022	3.0	30.0	
N4189-18	SB14	SAM	WATER	08/15/2022	3.0	30.0	
N4189-20	SB11	SAM	WATER	08/15/2022	3.0	30.0	
N4189-20DUP	SB11DUP	DUP	WATER	08/15/2022	3.0	30.0	
N4189-20MS	SB11MS	MS	WATER	08/15/2022	3.0	30.0	
N4189-20MSD	SB11MSD	MSD	WATER	08/15/2022	3.0	30.0	
PB146975TB	PB146975TB	MB	WATER	08/15/2022	3.0	30.0	
PB147013BL	PB147013BL	MB	WATER	08/15/2022	30.0	30.0	
PB147013BS	PB147013BS	LCS	WATER	08/15/2022	30.0	30.0	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4189 **SAS No.:** N4189

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB147028**						
N4189-02	SB18	SAM	WATER	08/14/2022	5.0	25.0	
N4189-04	SB19	SAM	WATER	08/14/2022	5.0	25.0	
N4189-06	SB20	SAM	WATER	08/14/2022	5.0	25.0	
N4189-08	SB15	SAM	WATER	08/14/2022	5.0	25.0	
N4189-10	SB16	SAM	WATER	08/14/2022	5.0	25.0	
N4189-12	SB17	SAM	WATER	08/14/2022	5.0	25.0	
N4189-14	SB13	SAM	WATER	08/14/2022	5.0	25.0	
N4189-16	SB12	SAM	WATER	08/14/2022	5.0	25.0	
N4189-18	SB14	SAM	WATER	08/14/2022	5.0	25.0	
N4189-20	SB11	SAM	WATER	08/14/2022	5.0	25.0	
N4189-20DUP	SB11DUP	DUP	WATER	08/14/2022	5.0	25.0	
N4189-20MS	SB11MS	MS	WATER	08/14/2022	5.0	25.0	
N4189-20MSD	SB11MSD	MSD	WATER	08/14/2022	5.0	25.0	
PB146975TB	PB146975TB	MB	WATER	08/14/2022	5.0	25.0	
PB147028BL	PB147028BL	MB	WATER	08/14/2022	5.0	25.0	
PB147028BS	PB147028BS	LCS	WATER	08/14/2022	5.0	25.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121524

Start date: 08/15/2022 **End date:** 08/15/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1412	HG
S0.2	S0.2	1	1415	HG
S2.5	S2.5	1	1417	HG
S5	S5	1	1419	HG
S7.5	S7.5	1	1422	HG
S10	S10	1	1424	HG
ICV87	ICV87	1	1427	HG
ICB87	ICB87	1	1429	HG
CCV37	CCV37	1	1431	HG
CCB37	CCB37	1	1433	HG
CRA	CRA	1	1439	HG
PB147013BL	PB147013BL	1	1446	HG
PB147013BS	PB147013BS	1	1448	HG
CCV38	CCV38	1	1502	HG
CCB38	CCB38	1	1504	HG
N4189-02	SB18	1	1515	HG
N4189-04	SB19	1	1518	HG
N4189-06	SB20	1	1520	HG
N4189-08	SB15	1	1522	HG
N4189-10	SB16	1	1524	HG
N4189-12	SB17	1	1527	HG
CCV39	CCV39	1	1529	HG
CCB39	CCB39	1	1531	HG
N4189-14	SB13	1	1533	HG
N4189-16	SB12	1	1536	HG
N4189-18	SB14	1	1538	HG
N4189-20	SB11	1	1540	HG
N4189-20DUP	SB11DUP	1	1542	HG
N4189-20MS	SB11MS	1	1545	HG
N4189-20MSD	SB11MSD	1	1547	HG
CCV40	CCV40	1	1556	HG
CCB40	CCB40	1	1558	HG
CCV41	CCV41	1	1623	HG
CCB41	CCB41	1	1626	HG
PB146975TB	PB146975TB	1	1630	HG
N4189-20L	SB11L	5	1635	HG
CCV42	CCV42	1	1648	HG
CCB42	CCB42	1	1651	HG

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121529

Start date: 08/15/2022 **End date:** 08/16/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1448	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1452	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1456	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1500	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1503	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1507	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1511	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1523	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1530	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1534	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1538	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1547	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1551	Ag,As,Ba,Cd,Cr,Pb,Se
LLCCV01	LLCCV01	1	1600	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1604	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1706	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1710	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1757	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1800	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1907	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1910	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1922	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1926	Ag,As,Ba,Cd,Cr,Pb,Se
CCV06	CCV06	1	2010	Ag,As,Ba,Cd,Cr,Pb,Se
CCB06	CCB06	1	2014	Ag,As,Ba,Cd,Cr,Pb,Se
CCV07	CCV07	1	2056	Ag,As,Ba,Cd,Cr,Pb,Se
CCB07	CCB07	1	2100	Ag,As,Ba,Cd,Cr,Pb,Se
CCV08	CCV08	1	2145	Ag,As,Ba,Cd,Cr,Pb,Se
CCB08	CCB08	1	2149	Ag,As,Ba,Cd,Cr,Pb,Se
PB147028BL	PB147028BL	1	2220	Ag,As,Ba,Cd,Cr,Pb,Se
PB147028BS	PB147028BS	1	2224	Ag,As,Ba,Cd,Cr,Pb,Se
PB146975TB	PB146975TB	1	2228	Ag,As,Ba,Cd,Cr,Pb,Se
CCV09	CCV09	1	2232	Ag,As,Ba,Cd,Cr,Pb,Se
CCB09	CCB09	1	2236	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-02	SB18	1	2317	Ag,As,Ba,Cd,Cr,Pb,Se
CCV10	CCV10	1	2321	Ag,As,Ba,Cd,Cr,Pb,Se
CCB10	CCB10	1	2325	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-04	SB19	1	2329	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-06	SB20	1	2333	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-08	SB15	1	2338	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-10	SB16	1	2342	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-12	SB17	1	2346	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-14	SB13	1	2350	Ag,As,Ba,Cd,Cr,Pb,Se

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121529

Start date: 08/15/2022 **End date:** 08/16/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
N4189-16	SB12	1	2354	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-18	SB14	1	2358	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20	SB11	1	0002	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20DUP	SB11DUP	1	0006	Ag,As,Ba,Cd,Cr,Pb,Se
CCV11	CCV11	1	0011	Ag,As,Ba,Cd,Cr,Pb,Se
CCB11	CCB11	1	0014	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20L	SB11L	5	0019	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20MS	SB11MS	1	0023	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20MSD	SB11MSD	1	0026	Ag,As,Ba,Cd,Cr,Pb,Se
CCV12	CCV12	1	0058	Ag,As,Ba,Cd,Cr,Pb,Se
CCB12	CCB12	1	0102	Ag,As,Ba,Cd,Cr,Pb,Se
CCV13	CCV13	1	0138	Ag,As,Ba,Cd,Cr,Pb,Se
CCB13	CCB13	1	0142	Ag,As,Ba,Cd,Cr,Pb,Se

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22 07:45**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:00	
N4189-02	**SB18**	**SOIL**			**08/10/22 07:45**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:15	
			Ignitability	1030			08/15/22 13:00	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:09	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:28	
N4189-03	**SB19**	**SOIL**			**08/10/22 09:50**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:15	
N4189-04	**SB19**	**SOIL**			**08/10/22 09:50**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:19	
			Ignitability	1030			08/15/22 13:12	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:32	
N4189-05	**SB20**	**SOIL**			**08/10/22 10:45**			**08/11/22**

LAB CHRONICLE

			Paint Filter	9095B			08/15/22 09:22	
N4189-06	**SB20**	**SOIL**			**08/10/22 10:45**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:22	
			Ignitability	1030			08/15/22 13:20	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:35	
N4189-07	**SB15**	**SOIL**			**08/10/22 12:00**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:30	
N4189-08	**SB15**	**SOIL**			**08/10/22 12:00**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:25	
			Ignitability	1030			08/15/22 13:28	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:38	
N4189-09	**SB16**	**SOIL**			**08/10/22 13:25**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:37	
N4189-10	**SB16**	**SOIL**			**08/10/22 13:25**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:30	
			Ignitability	1030			08/15/22 13:35	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	

LAB CHRONICLE

			Reactive Sulfide	9034		08/15/22	08/15/22 14:40
N4189-11	**SB17**	**SOIL**			**08/10/22 14:20**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:44
N4189-12	**SB17**	**SOIL**			**08/10/22 14:20**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:33
			Ignitability	1030			08/15/22 13:42
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16
			Reactive Sulfide	9034		08/15/22	08/15/22 14:42
N4189-13	**SB13**	**SOIL**			**08/11/22 07:40**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:51
N4189-14	**SB13**	**SOIL**			**08/11/22 07:40**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:40
			Ignitability	1030			08/15/22 13:50
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16
			Reactive Sulfide	9034		08/15/22	08/15/22 14:45
N4189-15	**SB12**	**SOIL**			**08/11/22 09:25**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:58
N4189-16	**SB12**	**SOIL**			**08/11/22 09:25**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:44

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			Ignitability	1030			08/15/22 13:58
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16
			Reactive Sulfide	9034		08/15/22	08/15/22 14:48
N4189-17	**SB14**	**SOIL**			**08/11/22 11:00**		**08/11/22**
			Paint Filter	9095B			08/15/22 10:05
N4189-18	**SB14**	**SOIL**			**08/11/22 11:00**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:46
			Ignitability	1030			08/15/22 14:05
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:24
			Reactive Sulfide	9034		08/15/22	08/15/22 14:50
N4189-19	**SB11**	**SOIL**			**08/11/22 13:40**		**08/11/22**
			Paint Filter	9095B			08/15/22 10:12
N4189-20	**SB11**	**SOIL**			**08/11/22 13:40**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:50
			Ignitability	1030			08/15/22 14:12
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:24
			Reactive Sulfide	9034		08/15/22	08/15/22 14:52

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 07:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
		% Solid:	91.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:00	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 07:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.39	H	1	0	0	pH		08/12/22 12:15	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:00	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:09	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:28	9034

Comments: pH result reported at temperature 20.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 09:50
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
		% Solid:	91.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:15	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 09:50
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.10	H	1	0	0	pH		08/12/22 12:19	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:12	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:32	9034

Comments: pH result reported at temperature 21.1 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 10:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
		% Solid:	88.9

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:22	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 10:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-06	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.49	H	1	0	0	pH		08/12/22 12:22	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:20	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:35	9034

Comments: pH result reported at temperature 20.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 12:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
		% Solid:	96.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:30	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 12:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-08	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.90	H	1	0	0	pH		08/12/22 12:25	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:28	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:38	9034

Comments: pH result reported at temperature 20.6 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 13:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
		% Solid:	94.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:37	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 13:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-10	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.84	H	1	0	0	pH		08/12/22 12:30	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:35	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:40	9034

Comments: pH result reported at temperature 21.0 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 14:20
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
		% Solid:	96.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:44	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 14:20
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-12	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.23	H	1	0	0	pH		08/12/22 12:33	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:42	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:42	9034

Comments: pH result reported at temperature 20.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 07:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
		% Solid:	94.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:51	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 07:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-14	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.48	H	1	0	0	pH		08/12/22 12:40	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:50	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:45	9034

Comments: pH result reported at temperature 20.5 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 09:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
		% Solid:	88.5

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:58	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 09:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-16	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.02	H	1	0	0	pH		08/12/22 12:44	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:58	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:48	9034

Comments: pH result reported at temperature 21.0 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 11:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
		% Solid:	95.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 10:05	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 11:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-18	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.34	H	1	0	0	pH		08/12/22 12:46	9045D
Ignitability	NO		1	0	0	oC		08/15/22 14:05	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:50	9034

Comments: pH result reported at temperature 21.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 13:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
		% Solid:	96

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 10:12	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 13:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-20	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.34	H	1	0	0	pH		08/12/22 12:50	9045D
Ignitability	NO		1	0	0	oC		08/15/22 14:12	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:52	9034

Comments: pH result reported at temperature 21.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

QC RESULT SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4189
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121486

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	**ICV**						
Corrosivity		pH	7.01	7	100	90-110	08/12/2022
Sample ID:	**CCV1**						
Corrosivity		pH	2.01	2.00	101	90-110	08/12/2022
Sample ID:	**CCV2**						
Corrosivity		pH	12.03	12.00	100	90-110	08/12/2022
Sample ID:	**CCV3**						
Corrosivity		pH	2.01	2.00	101	90-110	08/12/2022
Sample ID:	**CCV4**						
Corrosivity		pH	12.03	12.00	100	90-110	08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4189
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121523

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1						
Reactive Cyanide	mg/L	0.094	0.099	95	85-115	08/15/2022
Sample ID: CCV1						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV2						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV3						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV4						
Reactive Cyanide	mg/L	0.26	0.25	104	90-110	08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **RunNo.:** LB121523

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB2							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB3							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB4							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022

Preparation Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB147008BL							
Reactive Cyanide	mg/Kg	< 0.0250	0.0250	U	0.05	0.05	08/15/2022
Sample ID: PB147042BL							
Reactive Sulfide	mg/Kg	< 5.0000	5.0000	U	10	10	08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4188-02
Client ID: S4DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	7.58		7.60		1	0.26		08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-01
Client ID: SB18DUP
Percent Solids for Spike Sample: 91.2

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	**ml/100gm**	**+/-20**	**1.00**	**U**	**1.00**	**U**	**1**	**0**		**08/15/2022**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-02
Client ID: SB18DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Cyanide	mg/Kg	+/-20	0.050	U	0.049	U	1	0		08/15/2022
Ignitability	oC	+/-20	NO		NO		1	0		08/15/2022
Reactive Sulfide	mg/Kg	+/-20	10.0	U	10.0	U	1	0		08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-20
Client ID: SB11DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	8.34		8.35		1	0.12		08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4211-02
Client ID: WC-2DUP
Percent Solids for Spike Sample: 96.7

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	ml/100gm	+/-20	1.00	U	1.00	U	1	0		08/15/2022
Ignitability	oC	+/-20	NO		NO		1	0		08/15/2022

SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N 4189
COC Number 2036079

12
12.1

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. - 2nd Floor
CITY Morristown, NJ STATE NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5533 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED 1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) ______ DAYS*
HARDCOPY (DATA PACKAGE): ______ DAYS*
EDD: ______ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other ______
- ☒ EDD FORMAT Equis

ANALYSIS

1. TCL VOCs
2. PAHs
3. TPH-DRO/GRO
4. PCBs
5. TCLP (RCRA 8) Metals
6. RCRA Characteristics
7. Paint Filter
8.
9.

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	COMP	GRAB	DATE	TIME	# OF BOTTLES	1 (E)	2 (E)	3 (E)	4 (E)	5 (E)	6 (E)	7 (E)	8	9	COMMENTS
1.	SB18	Soil	X	X	8/10/22	0745	5	X	X	X	X	X	X	X			
2.	SB19	Soil	X	X		0950	5	X	X	X	X	X	X	X			
3.	SB20	Soil	X	X		1045	5	X	X	X	X	X	X	X			
4.	SB15	Soil	X	X		1200	5	X	X	X	X	X	X	X			
5.	SB16	Soil	X	X		1325	5	X	X	X	X	X	X	X			
6.	~~SB13~~ SB17	Soil	X	X		1420	5	X	X	X	X	X	X	X			
7.	~~SB12~~ SB13	Soil	X	X	8/11/22	0740	5	X	X	X	X	X	X	X			
8.	SB12	Soil	X	X		0925	5	X	X	X	X	X	X	X			
9.	SB14	Soil	X	X		1100	5	X	X	X	X	X	X	X			
10.	SB11	Soil	X	X		1340	5	X	X	X	X	X	X	X			

PRESERVATIVES — Specify Preservatives: A-HCl, B-HNO3, C-H2SO4, D-NaOH, E-ICE, F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature]	8/11/22 1555	1. [signature]
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☒ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.2 °C
Comments: IR Cor #1

Page ____ of ____

CLIENT: ☒ Hand Delivered ☐ Other ______
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☒ YES ☐ NO

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255421
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-22-15

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4189 loui01
Client Name : Louis Berger U.S., Inc., A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S., Inc., A V
Invoice Contact : Jonathan Ganz

Order Date : 8/11/2022 4:00:00 PM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/11/2022 3:55:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
N4189-01	SB18	Solid	08/10/2022	07:45					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-03	SB19	Solid	08/10/2022	09:50					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-05	SB20	Solid	08/10/2022	10:45					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-07	SB15	Solid	08/10/2022	12:00					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-09	SB16	Solid	08/10/2022	13:25					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-11	SB17	Solid	08/10/2022	14:20					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-13	SB13	Solid	08/11/2022	07:40					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-15	SB12	Solid	08/11/2022	09:25					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-17	SB14	Solid	08/11/2022	11:00					

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4189 loui01
Client Name : Louis Berger U.S.. Inc.. A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S.. Inc.. A V
Invoice Contact : Jonathan Ganz

Order Date : 8/11/2022 4:00:00 PM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/11/2022 3:55:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
					VOC-TCLVOA-10		8260D	2 Bus. Days	
N4189-19	SB11	Solid	08/11/2022	13:40					
					VOC-TCLVOA-10		8260D	2 Bus. Days	

Relinguished By :
Date / Time : 8/12/22 8:20

Received By :
Date / Time : 8/12/22 8:20

Storage Area : VOA Refridgerator Room

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/16/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: SAME PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____
- ✓ EDD FORMAT Equis

ANALYSIS

1 TCL VOCs; 2 PAHs; 3 TPH-1120/602; 4 PCBs; 5 TAL (RCRA 8 metals); 6 RCRA Characteristics; 7 Paint Filter; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X		
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X		
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. WSP	8/12/22 1330	1.
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.7-C °C
Comments: TP-Comment #7

Page 1 of 1

CLIENT: ✓ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.92	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.98	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.20	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.95	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.00	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.77	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.92	5.40	ug/Kg
67-64-1	Acetone	26.8	U	13.1	26.8	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.80	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.7	U	6.40	10.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.75	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.90	5.40	ug/Kg
78-93-3	2-Butanone	26.8	U	7.80	26.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.85	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.87	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.72	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.80	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.86	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.71	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.90	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.78	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.75	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.8	U	4.90	26.8	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.79	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.76	5.40	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.92	5.40	ug/Kg
591-78-6	2-Hexanone	26.8	U	5.00	26.8	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.80	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.80	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.75	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.7	U	1.60	10.7	ug/Kg
95-47-6	o-Xylene	5.40	U	0.85	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.85	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.87	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.77	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.72	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.3		50 - 163	113%	SPK: 50
1868-53-7	Dibromofluoromethane	43.8		54 - 147	88%	SPK: 50
2037-26-5	Toluene-d8	32.3	*	78 - 125	65%	SPK: 50
460-00-4	4-Bromofluorobenzene	36.9		50 - 146	74%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	116000	7.967			
540-36-3	1,4-Difluorobenzene	208000	8.855			
3114-55-4	Chlorobenzene-d5	191000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	80600	13.555			
TENTATIVE IDENTIFIED COMPOUNDS						
055644-10-5	Silanol, dimethyl(1,1,2-trimethylp	12.2	J		7.18	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.8
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074105.D	1		08/16/22 16:54	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.80	U	1.00	5.80	ug/Kg
74-87-3	Chloromethane	5.80	U	1.20	5.80	ug/Kg
75-01-4	Vinyl Chloride	5.80	U	1.10	5.80	ug/Kg
74-83-9	Bromomethane	5.80	U	1.30	5.80	ug/Kg
75-00-3	Chloroethane	5.80	U	1.00	5.80	ug/Kg
75-69-4	Trichlorofluoromethane	5.80	U	1.10	5.80	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.80	U	0.84	5.80	ug/Kg
75-35-4	1,1-Dichloroethene	5.80	U	1.00	5.80	ug/Kg
67-64-1	Acetone	29.0	U	14.2	29.0	ug/Kg
75-15-0	Carbon Disulfide	5.80	U	0.87	5.80	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.80	U	1.10	5.80	ug/Kg
79-20-9	Methyl Acetate	5.80	U	1.50	5.80	ug/Kg
75-09-2	Methylene Chloride	11.6	U	6.90	11.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.80	U	0.79	5.80	ug/Kg
75-34-3	1,1-Dichloroethane	5.80	U	0.81	5.80	ug/Kg
110-82-7	Cyclohexane	5.80	U	0.98	5.80	ug/Kg
78-93-3	2-Butanone	29.0	U	8.50	29.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.80	U	0.92	5.80	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.80	U	0.79	5.80	ug/Kg
74-97-5	Bromochloromethane	5.80	U	0.94	5.80	ug/Kg
67-66-3	Chloroform	5.80	U	0.78	5.80	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.80	U	0.87	5.80	ug/Kg
108-87-2	Methylcyclohexane	5.80	U	0.93	5.80	ug/Kg
71-43-2	Benzene	5.80	U	0.77	5.80	ug/Kg
107-06-2	1,2-Dichloroethane	5.80	U	0.98	5.80	ug/Kg
79-01-6	Trichloroethene	5.80	U	0.85	5.80	ug/Kg
78-87-5	1,2-Dichloropropane	5.80	U	0.75	5.80	ug/Kg
75-27-4	Bromodichloromethane	5.80	U	0.81	5.80	ug/Kg
108-10-1	4-Methyl-2-Pentanone	29.0	U	5.30	29.0	ug/Kg
108-88-3	Toluene	5.80	U	0.73	5.80	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.80	U	0.86	5.80	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.80	U	0.82	5.80	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.80	U	1.00	5.80	ug/Kg
591-78-6	2-Hexanone	29.0	U	5.40	29.0	ug/Kg
124-48-1	Dibromochloromethane	5.80	U	0.87	5.80	ug/Kg
106-93-4	1,2-Dibromoethane	5.80	U	0.87	5.80	ug/Kg
127-18-4	Tetrachloroethene	5.80	U	0.88	5.80	ug/Kg
108-90-7	Chlorobenzene	5.80	U	0.75	5.80	ug/Kg
100-41-4	Ethyl Benzene	5.80	U	0.81	5.80	ug/Kg
179601-23-1	m/p-Xylenes	11.6	U	1.70	11.6	ug/Kg
95-47-6	o-Xylene	5.80	U	0.92	5.80	ug/Kg
100-42-5	Styrene	5.80	U	0.92	5.80	ug/Kg
75-25-2	Bromoform	5.80	U	0.94	5.80	ug/Kg
98-82-8	Isopropylbenzene	5.80	U	0.84	5.80	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.80	U	1.30	5.80	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.80	U	0.78	5.80	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.80	U	0.73	5.80	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.80	U	0.74	5.80	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.80	U	1.40	5.80	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.80	U	1.10	5.80	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.80	U	1.20	5.80	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.3		50 - 163	109%	SPK: 50
1868-53-7	Dibromofluoromethane	45.0		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	33.8	*	78 - 125	68%	SPK: 50
460-00-4	4-Bromofluorobenzene	36.7		50 - 146	73%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	118000	7.973			
540-36-3	1,4-Difluorobenzene	211000	8.855			
3114-55-4	Chlorobenzene-d5	194000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	84700	13.561			
TENTATIVE IDENTIFIED COMPOUNDS						
001066-40-6	Silanol, trimethyl-	10.9	J		7.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.7
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074106.D	1		08/16/22 17:23	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

GC SEMI-VOLATILES

GENERAL CHEMISTRY

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/17/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: SAME
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____
- ✓ EDD FORMAT Equis

ANALYSIS

1 TCL VOCs; 2 PAHs; 3 TPH-1120/602; 4 PCBs; 5 TAL (RCRA 8 metals); 6 RCRA Characteristics; 7 Paint Filter; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X		
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X		
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. WSP	8/12/22 1330	1.
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.7-C °C
Comments: TP-Comp #7

Page 1 of 1

CLIENT: ✓ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010366.D	1	08/13/22 09:40	08/15/22 12:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	856	J	235	1790	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.57	*	37 - 130	33%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10RE	SDG No.:	N4202
Lab Sample ID:	N4202-01RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011258.D	1	08/13/22 09:40	08/15/22 18:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1190	J	235	1790	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	7.16	*	37 - 130	36%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027974.D	50	08/15/22 22:40	FB081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	1710	J	191	2370	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.1		50 - 150	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 07:30
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.51	H	1	0	0	pH		08/13/22 13:35	9045D
Ignitability	NO		1	0	0	oC		08/15/22 15:05	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 15:10	9034

Comments: pH result reported at temperature 21.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011248.D	1	08/13/22 09:40	08/15/22 12:30	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9080		253	1930	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	15.6		37 - 130	78%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027975.D	50	08/15/22 23:17	FB081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	991	J	206	2560	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	23.4		50 - 150	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 10:55
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.77	H	1	0	0	pH		08/13/22 13:39	9045D
Ignitability	NO		1	0	0	oC		08/15/22 15:12	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 15:12	9034

Comments: pH result reported at temperature 21.5 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA FOR

VOLATILE ORGANICS

SEMI-VOLATILE ORGANICS

GC SEMI-VOLATILES

METALS

GENERAL CHEMISTRY

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4202

ATTENTION : Jonathan Ganz

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Date : 08/19/2022

Dear Jonathan Ganz,

4 soil samples for the **QED1059 Phase II SCI** project were received on **08/12/2022.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

The invoice for this workorder is also attached to the e-mail.

Regards,

Samantha Beazley

Samantha@chemtech.net

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4202
COC Number 2036078

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: WSP USA
ADDRESS: 350 Mt. Kemble Ave. 2nd Fl.
CITY Morristown STATE: NJ ZIP: 07960
ATTENTION: Jon Ganz
PHONE: 646-784-5532 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: QED1059
PROJECT NO.: 31402661.219 LOCATION: Queens, NY
PROJECT MANAGER: Jon Ganz
e-mail: jon.ganz@wsp.com
PHONE: 646-784-5533 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: SAME
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH * see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____
- ✓ EDD FORMAT Equis

ANALYSIS

1 TCL VOCs; 2 PAHs; 3 TPH-1120/602; 4 PCBs; 5 TAL (RCRA 8 metals); 6 RCRA Characteristics; 7 Paint Filter; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9
1.	SB10	Soil	X	X	8/12/22	0730	5	X	X	X	X	X	X	X		
2.	SB08	Soil	X	X	8/12/22	1055	5	X	X	X	X	X	X	X		
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. WSP	8/12/22 1330	1.
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.7-C °C
Comments: TP-Comp #7

Page 1 of 1

CLIENT: ✓ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☐ YES ☐ NO

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 07:30
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
		% Solid:	93.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 12:05	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	6.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089006.D	1	08/15/22 08:55	08/16/22 02:10	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.2	U	3.30	18.2	ug/kg
11104-28-2	Aroclor-1221	18.2	U	5.00	18.2	ug/kg
11141-16-5	Aroclor-1232	18.2	U	4.20	18.2	ug/kg
53469-21-9	Aroclor-1242	18.2	U	2.60	18.2	ug/kg
12672-29-6	Aroclor-1248	18.2	U	3.20	18.2	ug/kg
11097-69-1	Aroclor-1254	18.2	U	4.50	18.2	ug/kg
37324-23-5	Aroclor-1262	18.2	U	3.60	18.2	ug/kg
11100-14-4	Aroclor-1268	18.2	U	6.10	18.2	ug/kg
11096-82-5	Aroclor-1260	18.2	U	3.50	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.1		40 - 162	110%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.1		32 - 176	105%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6.8
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129895.D	1	08/15/22 09:20	08/19/22 01:33	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	79.1	180	ug/Kg
208-96-8	Acenaphthylene	180	U	73.5	180	ug/Kg
83-32-9	Acenaphthene	180	U	84.4	180	ug/Kg
86-73-7	Fluorene	180	U	84.3	180	ug/Kg
85-01-8	Phenanthrene	180	U	89.5	180	ug/Kg
120-12-7	Anthracene	180	U	89.9	180	ug/Kg
206-44-0	Fluoranthene	180	U	85.4	180	ug/Kg
129-00-0	Pyrene	180	U	79.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.9	180	ug/Kg
218-01-9	Chrysene	180	U	91.5	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.8	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	72.4	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	41.5		27 - 109	41%	SPK: 100
321-60-8	2-Fluorobiphenyl	45.9		30 - 103	46%	SPK: 100
1718-51-0	Terphenyl-d14	34.1		21 - 107	34%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	109000	6.792			
1146-65-2	Naphthalene-d8	398000	8.075			
15067-26-2	Acenaphthene-d10	176000	9.828			
1517-22-2	Phenanthrene-d10	273000	11.322			
1719-03-5	Chrysene-d12	264000	13.968			
1520-96-3	Perylene-d12	221000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6.8
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129895.D	1	08/15/22 09:20	08/19/22 01:33	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB10	SDG No.:	N4202
Lab Sample ID:	N4202-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-39-3	Barium	1820		1	77.9	500	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-47-3	Chromium	13.4	J	1	10.4	50.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/16/22 13:30	08/17/22 11:52	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/15/22 11:23	08/16/22 01:21	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22 10:55
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
		% Solid:	86.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 12:12	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	13.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089007.D	1	08/15/22 08:55	08/16/22 02:27	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.7	U	3.50	19.7	ug/kg
11104-28-2	Aroclor-1221	19.7	U	5.40	19.7	ug/kg
11141-16-5	Aroclor-1232	19.7	U	4.50	19.7	ug/kg
53469-21-9	Aroclor-1242	19.7	U	2.80	19.7	ug/kg
12672-29-6	Aroclor-1248	19.7	U	3.40	19.7	ug/kg
11097-69-1	Aroclor-1254	19.7	U	4.90	19.7	ug/kg
37324-23-5	Aroclor-1262	19.7	U	3.90	19.7	ug/kg
11100-14-4	Aroclor-1268	19.7	U	6.60	19.7	ug/kg
11096-82-5	Aroclor-1260	19.7	U	3.70	19.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.8		40 - 162	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.4		32 - 176	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129891.D	1	08/15/22 09:20	08/18/22 23:26	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	200	U	85.6	200	ug/Kg
208-96-8	Acenaphthylene	200	U	79.6	200	ug/Kg
83-32-9	Acenaphthene	200	U	91.4	200	ug/Kg
86-73-7	Fluorene	200	U	91.2	200	ug/Kg
85-01-8	Phenanthrene	200	U	96.8	200	ug/Kg
120-12-7	Anthracene	200	U	97.3	200	ug/Kg
206-44-0	Fluoranthene	200	U	92.4	200	ug/Kg
129-00-0	Pyrene	200	U	85.9	200	ug/Kg
56-55-3	Benzo(a)anthracene	200	U	100	200	ug/Kg
218-01-9	Chrysene	200	U	99.0	200	ug/Kg
205-99-2	Benzo(b)fluoranthene	200	U	79.9	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	200	U	85.2	200	ug/Kg
50-32-8	Benzo(a)pyrene	200	U	78.4	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	200	U	120	200	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	200	U	120	200	ug/Kg
191-24-2	Benzo(g,h,i)perylene	200	U	110	200	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	61.8		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	64.6		30 - 103	65%	SPK: 100
1718-51-0	Terphenyl-d14	49.2		21 - 107	49%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	106000	6.793			
1146-65-2	Naphthalene-d8	412000	8.075			
15067-26-2	Acenaphthene-d10	196000	9.828			
1517-22-2	Phenanthrene-d10	281000	11.322			
1719-03-5	Chrysene-d12	211000	13.969			
1520-96-3	Perylene-d12	260000	15.427			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129891.D	1	08/15/22 09:20	08/18/22 23:26	PB147018

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	SB08	SDG No.:	N4202
Lab Sample ID:	N4202-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-39-3	Barium	1460		1	77.9	500	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/16/22 13:30	08/17/22 11:54	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/15/22 11:23	08/16/22 01:26	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

- Final -

Phase II Subsurface Corridor Investigation

for

Replacement of Distribution Water Mains in Various Locations, etc. Q2020-67D – 35th Avenue from Bell Boulevard to 215th Street, etc., Borough of Queens, City of New York

DDC PROJECT NO. QED1059

WOL No. OEHS-20201409799-WOL-238

CONTRACT REGISTRATION NO. 20201409799

Prepared for:

NYC DDC Department of Design and Construction

Office of Environmental and Hazmat Services
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

Prepared by:

Louis Berger

Louis Berger U.S., Inc.
1 Penn Plaza, 2nd Floor
New York, NY 10119
Tel. (212) 612-7900
Fax (212) 363-4341
PROJECT NO. 31402661.219

September 16, 2022

TABLE OF CONTENTS

EXECUTIVE SUMMARY

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2020-67D Corridor located in the Bayside section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 0.37-mile (1,950-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
35th Avenue from Bell Boulevard to 35 feet east of 215th Street	1,100
34th Avenue from 214th Place to 214th Lane	250
Corporal Stone Street from 35th Avenue to 30 feet south of 35th Avenue	75
214th Place from 35th Avenue to 40 feet south of 35th Avenue	75
214th Lane from 34th to 35th Avenues	450

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of three soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

The Phase II SCI of the Q2020-67D Corridor was conducted by Louis Berger on August 10, 2022, and consisted of the following components:

- The advancement of three soil borings (SB18 to SB20) utilizing hand tools and/or Vactron and air knife. Soil borings were proposed to terminal depths of 6 ftbg; however, due to shallow refusals of bricks in one of the three borings (SB18), terminal depths ranged from 5.5 to 6 ftbg;

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to their terminal depths using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the three soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where recovery allowed, or the 6-inch interval above the encountered refusal or groundwater table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the three soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

In order to evaluate subsurface soil quality for waste classification purposes, laboratory analytical results of soil samples were compared with regulatory standards identified in: New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Commercial Use (Track

2) Soil Cleanup Objectives (SCOs), Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings and conclusions are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the three soil borings, including PID readings;

- Fill material consisting of moderate brown and dark yellowish brown, and dark yellowish orange coarse to fine gravelly sand to gravelly silty sand, and silty sand to sand, with cobbles were observed in all three borings at depths ranging from 0 to 6 ftbg. A layer of sandy clayey silt was also encountered in SB20. Anthropogenic fill, including brick, was observed in soil boring SB18 at a depth of 4 ftbg and asphalt was observed in soil boring SB20 at a depth of 3 ftbg. Refusal was encountered at a depth of 5.5 ftbg at SB18 due to brick;

- Bedrock was not encountered in any of the three boring locations;

- Groundwater was not encountered in any of the three boring locations;

- One VOC was detected above the laboratory's reporting limits in one of the three soil samples; however, the detectable concentration was below the applicable regulatory standards;

- Several PAHs were detected above the laboratory's reporting limits in two of the three soil samples (SB18 and SB20); however, all detectable concentrations were below the applicable regulatory standards;

- No PCBs were detected above the laboratory's reporting limits in any of the three soil samples collected at part of this Phase II SCI;

- The analytical laboratory results of the three waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards. Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity;

- Waste classification laboratory results indicate that TCLP barium was detected in all three soil samples, TCLP chromium was detected in two of the three samples, and TCLP lead was detected in one sample; however, all detected concentrations were below the applicable RCRA Hazardous Waste Levels; and,

- TPH-DRO was detected above the laboratory's reporting limits in all three waste classification soil samples at concentrations ranging from 2.46 milligrams per kilogram (mg/kg) (SB18) to 22.9 mg/kg (SB20), and TPH-GRO was detected above the laboratory's reporting limits in all three waste classification soil samples with concentrations ranging from 0.0170 J mg/kg (SB19) to 0.845 J mg/kg (SB18). There are no regulatory standards for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e., VOCs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State

Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

1.0 INTRODUCTION

On behalf of the New York City (NYC) Department of Design and Construction (DDC), Louis Berger U.S., Inc., a WSP Company (Louis Berger) conducted a Phase II Subsurface Corridor Investigation (Phase II SCI) for the Q2020-67D Corridor located in the Bayside section of the Borough of Queens, New York (hereinafter referred to as the "Corridor") to determine if the Corridor's environmental condition might impact the proposed construction activities associated with the DDC infrastructure project QED1059.

The proposed activities consist of the replacement of distribution water mains throughout Queens. The proposed work is being conducted to improve water quality and residual pressure in the area.

The approximately 0.37-mile (1,950-foot) long Corridor is identified on Figure 1 Topographic Corridor Location Map and is comprised of the following street segments:

Street Segments	Length (feet)
35th Avenue from Bell Boulevard to 35 feet east of 215th Street	1,100
34th Avenue from 214th Place to 214th Lane	250
Corporal Stone Street from 35th Avenue to 30 feet south of 35th Avenue	75
214th Place from 35th Avenue to 40 feet south of 35th Avenue	75
214th Lane from 34th to 35th Avenues	450

The proposed depth of excavation for the Corridor was estimated to be 6 feet below grade (ftbg). Based on the review of available information provided by the DDC and discussions with the DDC Project Manager, Louis Berger proposed the advancement of three soil borings and the collection of soil samples to characterize the subsurface conditions that may be encountered during construction. No groundwater samples were proposed to be collected and groundwater was not encountered during the Phase II SCI activities.

1.1 Summary of Previous Environmental Investigations

No prior reports for the Corridor were made available to Louis Berger for review.

1.2 Scope of Work

The Phase II SCI consisted of a field investigation, laboratory analyses, and the preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting

boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution. Hand-clearing activities were performed by PAL Environmental Services (PAL). Soil boring oversight and soil sample collection were conducted by Mr. Christopher Calandrillo, Project Scientist of Louis Berger. Laboratory analyses were provided by Chemtech Consulting Group Inc. (Chemtech) of Mountainside, New Jersey, which is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11376). Field-derived Quality Assurance/Quality Control (QA/QC) samples (i.e., blind duplicates, equipment/rinsate blanks, and trip blanks) were not collected for this project.

The field investigation was conducted on August 10, 2022, and consisted of the following components:

- The advancement of three soil borings (SB18 to SB20) utilizing hand tools and/or Vactron and air knife. Soil borings were proposed to terminal depths of 6 ftbg. However, due to refusals of brick in one of the three borings (SB18), soil borings were advanced to terminal depths ranging from 5.5 to 6 ftbg;

- To ensure the clearance of sensitive subsurface utility lines and features, boring locations were advanced to 6 ftbg or until refusal, whichever came first, using evasive methods such as hand augers and/or Vactron and air knife;

- Field screening, classification, and identification of soils from surface grade to the terminal depth of each boring. Soil samples were visually classified in the field using the Burmister Classification, Unified Soil Classification System (USCS), and Munsell Rock Color charts. Field screening of soils consisted of visual and olfactory indicators of impacts, as well as screening with a photoionization detector (PID);

- The collection of one grab soil sample from each of the three soil borings. The grab soil samples were collected from the 6-inch interval above the proposed terminal excavation depth, where recovery allowed, or the 6-inch interval above the encountered refusal or groundwater table. The grab soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using U.S. Environmental Protection Agency (USEPA) Method 8260C, or an updated method;

- The collection of one waste classification soil sample from each of the three soil borings. The waste classification samples were a composite of the entire soil column from the ground surface to the bottom of the proposed excavation depth, where recovery allowed, or above the

encountered refusal or groundwater table. The waste classification samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C, Total Petroleum Hydrocarbons-Diesel Range Organics/Gasoline Range Organics (TPH-DRO/GRO) by USEPA 8015B, Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A/608, Toxicity Characteristic Leaching Procedure (TCLP) Metals (Resource Conservation and Recovery Act [RCRA] 8) by USEPA Method 1311/6010B, and the three RCRA Characteristics, ignitability, reactivity, and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, as well as Paint Filter Test by USEPA Method 9095B. The USEPA methods described above or an updated version of the method were used to analyze each sample; and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results, and figures depicting boring locations, significant Corridor features and, if applicable, contamination occurrence and distribution.

2.0 CORRIDOR INFORMATION

2.1 Corridor Location, Description and Use

The approximately 0.37-mile (1,950-foot) long Corridor is located in the Bayside section of the Borough of Queens, New York. Currently, the Q2020-67D Corridor is developed with paved roadways, sidewalk areas, and existing infrastructure systems, and exhibits evidence of utilities, such as manholes, pavement scars, utility mark-outs, and valve covers. This indicates the presence of buried utilities, including gas, sewer, water, electric, and communications.

Adjoining property usage along the Corridor consists primarily of private residences, institutional and recreational properties, including a school, The Crocheron School, a park, a baseball field, and Buz O'Rourke Playground, and commercial properties, including a pilates studio, a dry cleaner, a hair salon, restaurants, and two gas stations at the intersection of Bell Boulevard and 35th Avenue.

The area of the Corridor is shown on Figure 2.

2.2 Description of Surrounding Properties

The Corridor is primarily surrounded by residential properties, with some institutional and commercial properties along Bell Boulevard, and Crocheron Park to the east of the Corridor. The Metropolitan Transportation Authority (MTA) Long Island Railroad (LIRR) Port Washington Branch runs approximately 0.42 miles (2,250 feet) south of the Corridor. The nearest surface water body is a pond located in Crocheron Park, located approximately 0.22 miles (1,140 feet) east of the Corridor.

2.3 Corridor and Regional Topographic Setting

Louis Berger reviewed the United States Geologic Survey (USGS) *7.5-minute Topographic Quadrangle Map for Flushing, New York* (2020) to determine topography at the Corridor. The Corridor exhibits a topographic elevation change of approximately 18 feet above mean sea level (msl). The elevation of the Corridor ranges from approximately 80 feet above msl on the western portion of the Corridor near the intersection of 35th Avenue and Bell Boulevard, to approximately 62 feet above msl at the eastern portion of the Corridor near the intersection of 35th Avenue and 215th Street. The overall topography of the surrounding area around the Corridor slopes from the west to east. Under natural conditions, surface runoff would be expected to follow the overall

topography of the area and ultimately flow to the east; however, storm runoff within the Corridor is managed by storm drains.

2.4 Corridor and Regional Geology

Based on the *NYC Detailed Soil Survey* via Web Soil Survey (National Cooperative Soil Survey, Version 12, October 27, 2021), the entirety of the Corridor is underlain by the Urban land-Greenbelt complex (UGAI), which is comprised of 60 percent urban land, till substratum, 25 percent Greenbelt and similar soils, and 15 percent minor components, with slopes of 0 to 3 percent. Hydric soils are not present in the unit, and the unit is not considered prime farmland.

The *NYC Reconnaissance Soil Survey* (2005) indicates that the Corridor is underlain by the Pavement & buildings-Foresthills-Montauk complex, 0 to 8 percent slopes. This complex is classified as nearly level to gently sloping urbanized areas of till plains and moraines that have been substantially cut and filled with natural soil materials, mostly for residential use; a mixture of anthropogenic soils and gneissic till soils, with up to 80 percent impervious pavement and buildings covering the surface; located from the terminal moraine northward in Brooklyn and Queens.

The *Ground-Water Resources of Kings and Queens Counties, Long Island, New York* (1999) and the *Quaternary Geologic Map of the Hudson River 4° x 6° Quadrangle, United States and Canada* (1992) indicate the surficial soils are underlain by Upper Pleistocene deposits consisting of outwash sand, gravel and silt to a depth of approximately 75 ftbg. The Upper Pleistocene deposits are, in turn, underlain by approximately 75 feet of the Magothy Formation (75 to 150 ftbg), which consists of deltaic quartzose, very fine to coarse sand, and silty sand with lesser amounts of clay and silt. Below the Magothy Formation is 250 feet of the Raritan Formation, which is composed of two members. The first Raritan Formation Member is 175 feet of the Raritan Clay Member (150 – 325 ftbg), consisting of clay beds with inclusions of silty clay and clayey silts, and the second Raritan Formation Member is 125 feet of the Lloyd Sand (325 to 450 ftbg). The Lloyd Sand is the final unconsolidated unit before bedrock and consists of fine to coarse quartz sand. These deposits are, in turn, underlain by crystalline metamorphic bedrock, expected to be encountered at approximately 450 ftbg.

During the advancement of soil borings for this Phase II SCI, fill material consisting of moderate brown and dark yellowish brown, and dark yellowish orange coarse to fine gravelly sand to gravelly silty sand, and silty sand to sand, with cobbles were observed in all three borings at depths ranging from 0 to 6 ftbg. A layer of sandy clayey silt was also encountered in SB20. Anthropogenic

fill, including brick, was observed in soil boring SB18 at a depth of 4 ftbg and asphalt was observed in soil boring SB20 at a depth of 3 ftbg. Refusal was encountered at a depth of 5.5 ftbg at SB18 due to brick.

2.5 Corridor and Regional Hydrogeology

According to the USGS *Long Island Depth to Water Viewer* (2010), groundwater depth is estimated to be between 48 and 59 ftbg along the Corridor, with shallower groundwater at the eastern portion of the Corridor near the intersection of 215th street and 35th Avenue. Groundwater was not encountered during the Phase II SCI field activities. The nearest surface water body is a pond located in Crocheron Park approximately 0.22 miles (1,140 feet) to the east of the Corridor. Based on the USGS *Groundwater Conditions on Long Island Map Viewer* (2013), groundwater in the vicinity of the Corridor is expected to flow to the east toward Little Neck Bay, located approximately 0.42 miles (2,190 feet) east of the Corridor. All references to groundwater flow direction/hydraulic gradient in this report are based upon this assumption. Groundwater flow can also be influenced by seasonal fluctuations in precipitation, local variations in geology, underground anthropogenic structures, and/or local dewatering operations.

According to the U.S. Fish and Wildlife Service (USFWS) *National Wetlands Inventory*, no wetlands are located along the Corridor; however, Crocheron Park, located approximately 0.22 miles (1,140 feet) to the east of the Corridor, contains a Freshwater Pond habitat (PuBHh). The wetland is described as part of the Palustrine System, which includes all non-tidal wetlands and are dominated by trees, shrubs, emergents, mosses, or lichens. In addition, the freshwater pond is also characterized by an unconsolidated bottom, it is permanently flooded, and it has been modified by a man-made barrier or dam.

According to the Federal Emergency Management Agency (FEMA) *Flood Insurance Rate Map* (FIRM) *Panel 3604970119F* (FEMA, 2007), the Corridor is not located within the 100-year (1% chance of flood) or 500-year (0.2% chance of flood) flood zones.

3.0 CORRIDOR EVALUATION

Louis Berger provided oversight for the advancement of three soil borings and collected soil samples during the field investigation conducted on August 10, 2022, in the vicinity of the planned construction. Drilling services for the advancement of the soil borings were provided by PAL. The soil samples from the borings were transferred into laboratory-supplied sample jars and properly labeled. The samples were stored with ice in a cooler to preserve the samples at approximately 4 degrees Celsius prior to and during shipment. A chain-of-custody was prepared prior to sample shipment. A summary of the field observations and details of the soil borings are provided in Table 1.

3.1 Soil Quality Investigation

All three of the soil borings (SB18 to SB20) were advanced utilizing evasive methods (i.e., a hand auger and/or hand tools) to terminal depths ranging from 5.5 ftbg to 6 ftbg. Refusal was encountered at boring location SB18 at a depth of 5.5 ftbg due to brick. Soil boring locations are depicted on Figure 2. The designations and sampling intervals for the samples that were submitted to the laboratory are included in Table 1. Maps depicting each boring location are included in Appendix A. Boring logs, which document soil classification information, including stratigraphy, are provided in Appendix B. The location of each boring is described below:

- **SB18** – Located in the grass right-of-way on the southern side of 35th Avenue between Bell Boulevard and Corporal Stone Street, 175 feet east of the eastern curb line of Bell Boulevard, 33 feet and 7 inches south of the northern curb line of 35th Avenue.

- **SB19 –** Located in the grass right-of-way on the northern side of 35th Avenue between 214th Lane and 215th Street, 97 feet and 6 inches east of the eastern curb line of 214th Lane, 31 feet and 8 inches north of the southern curb line of 35th Avenue.

- **SB20 –** Located in the grass right-of-way on the western side of 214th Place between 34th and 35th Avenues, 12 feet south of the southern curb line of 34th Avenue, 26 feet and 7 inches west of the eastern curb line of 214th Place.

Soil from each boring was examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e., odors) of contamination. In addition, a PID was used to screen the soil for VOC vapors at all three boring locations.

In order to identify representative conditions relative to the presence of PAHs, TCLP metals, PCBs, total petroleum hydrocarbons, RCRA characteristics, and conditions relative to waste disposal in each boring, composite soil samples were collected at each boring location. Based on the DDC protocol regarding soil sample collection for waste classification analysis, composite soil samples were collected from the entire soil column except where refusal was encountered, where the sample was collected from the ground surface to the encountered refusal. Composite soil samples were collected by mixing the soil from the column in a decontaminated stainless steel bowl.

In order to identify representative conditions relative to the presence of VOCs, grab samples were to be collected from either the 6-inch interval above refusal (where encountered), or the 6-inch interval above the bottom of the proposed excavation (where recovery allowed). Refusal was encountered at one of the three boring locations (SB08) at a depth of 5.5 ftbg due to brick.

All equipment was decontaminated by rinsing with deionized water, scrubbing with Alconox®, and then rinsed with deionized water a second time between each sample location to prevent any cross-contamination. Following the completion of each boring, the boreholes were backfilled with removed material.

3.2 Laboratory Analyses

All soil samples were analyzed on a 5-day turn-around time (TAT). Soil samples were stored on ice in coolers at approximately 4 degrees Celsius under chain of custody prior to delivery to the laboratory. Laboratory analyses were provided by Chemtech Consulting Group (Chemtech) of Mountainside, New Jersey, which is a NYSDOH ELAP-certified analytical laboratory (No. 11376).

The grab soil samples SB18 through SB20 were analyzed for TCL VOCs using USEPA Method 8260C or an updated method. The composite soil samples SB08 through SB12 were analyzed for PAHs by USEPA Method 8270C, TPH-DRO/GRO by USEPA Method 8015B, PCBs by USEPA Method 8082A/608, TCLP Metals (RCRA 8) by USEPA Method 1311/6010D, RCRA Characteristics, including ignitability, reactivity and corrosivity, by USEPA Methods 9012B/9034, 1030/1010A, and 9045C, respectively, as well as Paint Filter Test by USEPA Method 9095B, for waste classification purposes. The USEPA methods described above or an updated version of the method were used to analyze each sample.

3.3 Data Evaluation

In order to evaluate surface and subsurface soil quality for waste classification purposes, laboratory analytical results of grab and composite soil samples were compared with regulatory standards identified in: NYSDEC Subpart 375-6: Remedial Program Commercial Use (Track 2) Soil Cleanup Objectives (SCOs) and Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and 6 New York Codes, Rules and Regulations (NYCRR) Part 371.

4.0 FINDINGS

This section discusses the analytical data and findings for activities discussed in Section 3.0. Boring logs can be found in Appendix B. A complete laboratory analytical data report is included in Appendix C.

4.1 Field Screening

No visual or olfactory indications of contamination were observed in any of the three borings, including PID readings. Anthropogenic fill material, including brick, was observed in soil boring SB18 and asphalt was observed in soil boring SB20. A summary of the environmental boring data is presented in Table 1.

4.2 Laboratory Analytical Results

4.2.1 Target Compound List (TCL) Volatile Organic Compounds (VOCs) in Soils

Acetone was detected above the laboratory's reporting limits in one of the three soil samples (SB19); however, the concentration was below the applicable regulatory limit. A summary of the VOC detections in soil is provided as Table 2.

4.2.2 Polycyclic Aromatic Hydrocarbons (PAHs) in Soils

Several PAHs, including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, chrysene, fluoranthene, phenanthrene, and pyrene, were detected above the laboratory's reporting limits in two of the three soil samples (SB18 and SB20); however, all concentrations were below the applicable regulatory standards. A summary of the PAH detections in soil is provided as Table 3.

4.2.3 Polychlorinated Biphenyls (PCBs) in Soils

No PCBs were detected above the laboratory's reporting limits in any of the three soil samples collected as part of this Phase II SCI. A summary of the PCB detections in soil is provided as Table 4.

4.2.4 Waste Classification of Soil

RCRA Parameters (Reactivity, Corrosivity, Ignitability)

The analytical laboratory results of the three waste classification soil samples show that the RCRA parameters (reactivity, ignitability, or corrosivity) were within the RCRA standards. The pH (corrosivity indicator) of the samples was found to be within the RCRA limits of 2 and 12.5. The flash point was greater than 140 degrees Fahrenheit in all soil samples; therefore, the RCRA characteristics for ignitability were negative. Reactive cyanide and reactive sulfide were not detected in any of the soil samples.

Therefore, results of these analyses indicate that the waste classification soil samples collected do not exhibit evidence of hazardous waste characteristics with respect to reactivity, corrosivity and ignitability. A summary of the waste classification parameters is provided as Table 5.

TCLP Metals

Waste classification laboratory results indicate that TCLP barium was detected in all three soil samples with concentrations ranging from 1.160 milligrams per liter (mg/L) (SB18) to 1.550 mg/L (SB19). TCLP chromium was detected in two of the three soil samples with concentrations ranging from 0.014 J mg/L (SB20) to 0.129 mg/L (SB18). TCLP lead was detected in one of the three soil samples with a concentration of 0.0342 J mg/L (SB20). All concentrations were below the applicable RCRA Hazardous Waste Levels. A summary of the waste classification parameters is provided as Table 5.

Total Petroleum Hydrocarbons (TPH)

TPH-DRO was detected above the laboratory's reporting limits in all three of the waste classification soil samples at concentrations ranging from 2.46 milligrams per kilogram (mg/kg) (SB18) to 22.9 mg/kg (SB20), and TPH-GRO was detected above the laboratory's reporting limits in all three waste classification soil samples with concentrations ranging from 0.0170 J mg/kg (SB19) to 0.845 J mg/kg (SB18). There are no regulatory standards for TPH. A summary of the waste classification parameters is provided as Table 5.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following findings, conclusions, and recommendations are presented:

Findings and Conclusions

- No visual or olfactory indications of contamination were observed in any of the three soil borings, including PID readings;

- Fill material consisting of moderate brown and dark yellowish brown, and dark yellowish orange coarse to fine gravelly sand to gravelly silty sand, and silty sand to sand, with cobbles were observed in all three borings at depths ranging from 0 to 6 ftbg. A layer of sandy clayey silt was also encountered in SB20. Anthropogenic fill, including brick, was observed in soil boring SB18 at a depth of 4 ftbg and asphalt was observed in soil boring SB20 at a depth of 3 ftbg. Refusal was encountered at a depth of 5.5 ftbg at SB18 due to brick;

- Bedrock was not encountered in any of the three boring locations;

- Groundwater was not encountered in any of the three boring locations;

- One VOC was detected above the laboratory's reporting limits in one of the three soil samples; however, the detectable concentration was below the applicable regulatory standards;

- Several PAHs were detected above the laboratory's reporting limits in two of the three soil samples (SB18 and SB20); however, all detectable concentrations were below the applicable regulatory standards;

- No PCBs were detected above the laboratory's reporting limits in any of the three soil samples collected at part of this Phase II SCI;

- The analytical laboratory results of the three waste classification soil samples show that the RCRA parameters (reactivity, ignitability, and corrosivity) were within the RCRA standards. Therefore, results of these analyses indicate that the soil samples collected do not exhibit evidence of hazardous waste characteristics for reactivity, ignitability, and corrosivity;

- Waste classification laboratory results indicate that TCLP barium was detected in all three soil samples, TCLP chromium was detected in two of the three samples, and TCLP lead was detected in one sample; however, all detected concentrations were below the applicable RCRA Hazardous Waste Levels; and,

- TPH-DRO was detected above the laboratory's reporting limits in all three waste classification soil samples at concentrations ranging from 2.46 mg/kg (SB18) to 22.9 mg/kg (SB20), and TPH-GRO was detected above the laboratory's reporting limits in all three waste classification soil samples with concentrations ranging from 0.0170 J mg/kg (SB19) to 0.845 J mg/kg (SB18). There are no regulatory standards for TPH. Lithology indicates the presence of fill material in all soil borings; therefore, the TPH detections may be attributed to contaminants related to fill material.

Based on the results of the field investigation and laboratory analytical results, the following recommendations are provided:

Recommendations

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous and non-hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Dust control procedures are recommended and should be implemented during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor should implement dust control measures to minimize potential airborne contaminants (i.e., VOCs, PAHs, TPH, and metals) released into the ambient environment as a direct result of construction activities;

- Groundwater was not encountered during the Phase II SCI activities. However, if dewatering is necessary, the Contractor will be required to obtain a New York City Department of Environmental Protection (NYCDEP) sewer discharge permit and perform sampling and laboratory analysis prior to discharge into the sanitary or combined sewers;

- In addition, if discharge into storm sewers, which ultimately discharge into a surface water body, is required during dewatering, it may be performed under the appropriate NYSDEC State

Pollutant Discharge Elimination System (SPDES) permit. Additional sampling and laboratory analysis may be required to satisfy NYSDEC requirements prior to discharge into storm sewers; and,

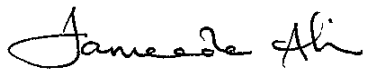
- Before beginning any excavation activity, the contractor should submit a Corridor-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety and Health Administration (OSHA), the New York State Department of Health (NYSDOH) and any other applicable regulations. The HASP should identify the possible locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns.

6.0 STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

Report Prepared By:

Michelle Locke, P.Eng.
Project Scientist



Fameeda Ali, CHMM, ENV SP
Project Manager

STATEMENT OF LIMITATIONS

The data presented, and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

Louis Berger derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, Louis Berger has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, Louis Berger has not attempted to verify the accuracy or completeness of any such information.

The data reported, and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by Louis Berger in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the Agreement and the provisions thereof.

TABLES

Table 1. Summary of Environmental Boring Data
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2020-67D Corridor
35th Avenue from Bell Boulevard to 215th Street, etc., Queens, New York

Boring No.	Sample ID	High PID (ppm)	Sample Interval (ftbg)	Total VOCs (mg/kg)	Total PAHs (mg/kg)	TCLP Metals Exceed (Yes/No)[1]	Depth to Water (ftbg)	Total Depth (ftbg)	Other Comments
SB18	SB18	<1	5.0 - 5.5	ND	-	No	NE	5.5	No visual or olfactory signs of contamination observed. Fill material was observed. Brick refusal at 5.5 ftbg.
			0.0 - 5.5	-	1.92				
SB19	SB19	<1	5.5 - 6.0	0.0144 J	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed.
			0.0 - 6.0	-	ND				
SB20	SB20	<1	5.5 - 6.0	ND	-	No	NE	6.0	No visual or olfactory signs of contamination observed. Fill material was observed. Anthropogenic fill (asphalt) observed.
			0.0 - 6.0	-	1.30				

Notes:

[1] - TCLP metal(s) exceeds Resource Conservation and Recovery Act (RCRA) Hazardous Waste

All soil samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Toxicity Characteristic Leaching Procedure (TCLP) for Metals (RCRA 8), Total Petroleum Hydrocarbons, and RCRA Characteristics.

PID = Photoionization detector

ND = Not Detected

NE = Not Encountered

ftbg = feet below grade

J = Estimated Value

Table 2. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2020-67D Corridor
35th Avenue from Bell Boulevard to 215th Street, etc., Queens, New York

TCL VOCs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth		
		SB18	SB19	SB20
		8/10/2022	8/10/2022	8/10/2022
		5.0 - 5.5	5.5 - 6.0	5.5 - 6.0
Acetone	500	ND	0.0144 J	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

Table 3. Summary of Polycyclic Aromatic Hydrocarbons (PAHs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2020-67D Corridor
35th Avenue from Bell Boulevard to 215th Street, etc., Queens, New York

PAHs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth		
		SB18	SB19	SB20
		8/10/2022	8/10/2022	8/10/2022
		0 - 5.5	0 - 6.0	0 - 6.0
Benzo[a]anthracene	5.6	0.160 J	ND	0.150 J
Benzo[a]pyrene	1	0.170 J	ND	0.150 J
Benzo[b]fluoranthene	5.6	0.180 J	ND	0.190
Benzo[g,h,i]perylene	500	0.130 J	ND	ND
Chrysene	56	0.160 J	ND	0.150 J
Fluoranthene	500	0.360	ND	0.260
Phenanthrene	500	0.340	ND	0.180 J
Pyrene	500	0.420	ND	0.220

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

Table 4. Summary of Polychlorinated Biphenyls (PCBs) Detected in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2020-67D Corridor
35th Avenue from Bell Boulevard to 215th Street, etc., Queens, New York

PCBs	Commercial Use (Track 2) Soil Cleanup Objectives (SCOs)	Sample ID, Date Collected, and Depth		
		SB18	SB19	SB20
		8/10/2022	8/10/2022	8/10/2022
		0 - 5.5	0 - 6.0	0 - 6.0
Aroclor (Total)*	1	ND	ND	ND

Notes:
All concentrations are in parts per million or milligrams per kilogram (ppm or mg/kg)
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
* Refers to the total concentration of PCBs in the sample
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006)

DDC Project Number: QED1059 Work Order Letter No. OEHS-20201409799-WOL-238

Table 5. Summary of Waste Classification Results in Soil
Phase II Subsurface Corridor Investigation for Installation of Distribution Water Mains in the Q2020-67D Corridor
35th Avenue from Bell Boulevard to 215th Street, etc., Queens, New York

Analyte	Resource Conservation and Recovery Act (RCRA) Hazardous Waste Levels	Sample ID, Date Collected, and Depth		
		SB18	SB19	SB20
		8/10/2022	8/10/2022	8/10/2022
		0 - 5.5	0 - 6.0	0 - 6.0
RCRA (Including TCLP Metals)				
pH	2 - 12.5*	7.39	8.10	7.49
Ignitability	>140 °F**	NEG	NEG	NEG
Paint Filter Test	NS	NEG	NEG	NEG
Reactive Cyanide	NS	ND	ND	ND
Reactive Sulfide	NS	ND	ND	ND
Arsenic	5	ND	ND	ND
Barium	100	1.160	1.550	1.430
Cadmium	1	ND	ND	ND
Chromium	5	0.129	ND	0.014 J
Lead	5	ND	ND	0.0342 J
Mercury	0.2	ND	ND	ND
Selenium	1	ND	ND	ND
Silver	5	ND	ND	ND
TPH DRO/GRO (mg/kg)				
TPH-DRO	NS	2.46	4.71	22.9
TPH-GRO	NS	0.845 J	0.0170 J	0.719 J

Notes:
All concentrations are in parts per million, milligrams per kilogram, or milligrams per liter (ppm, mg/kg, or mg/L), unless otherwise noted
TCLP = Toxicity Characteristic Leaching Procedure
NS = No Standard
ND = Compound not detected above method detection limit (see attached lab report for MDLs)
*A solid waste exhibits the characteristic of corrosivity if it has a pH less than or equal to 2 or greater than or equal to 12.5
**A solid waste exhibits the characteristic of ignitability if it has flash point less than 140 °F
°F = Degrees Fahrenheit
NEG = Negative (flash point was not detected below 140 °F) or Negative (Paint was not detected from Paint Filter Test)
J = The result is less than the quantitation limit but greater than the method detection limit (MDL).

FIGURE 1 – TOPOGRAPHIC CORRIDOR LOCATION MAP

NYC DDC Department of Design and Construction

Louis Berger

DDC PROJECT NO.: QED1059 WOL NO.:OEHS-20201409799-WOL-238

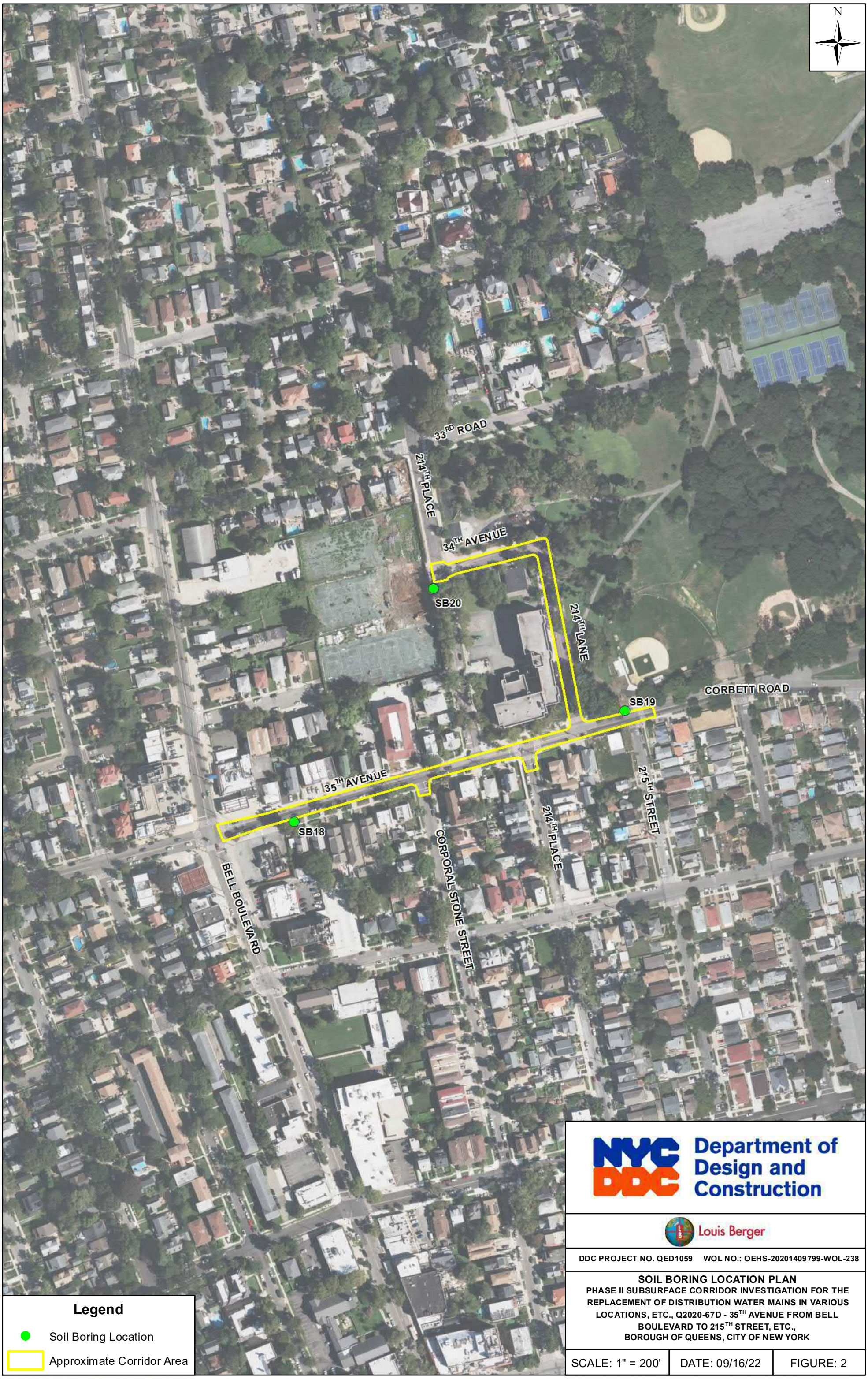
TOPOGRAPHIC CORRIDOR LOCATION MAP

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2020-67D - 35TH AVENUE FROM BELL BOULEVARD TO 215TH STREET, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

Source: USGS Quadrangle Flushing, New York (2020)

SCALE: 1" = 1,000' DATE: 09/16/2020 FIGURE: 1

FIGURE 2 – SOIL BORING LOCATION PLAN



NYC DDC Department of Design and Construction

Louis Berger

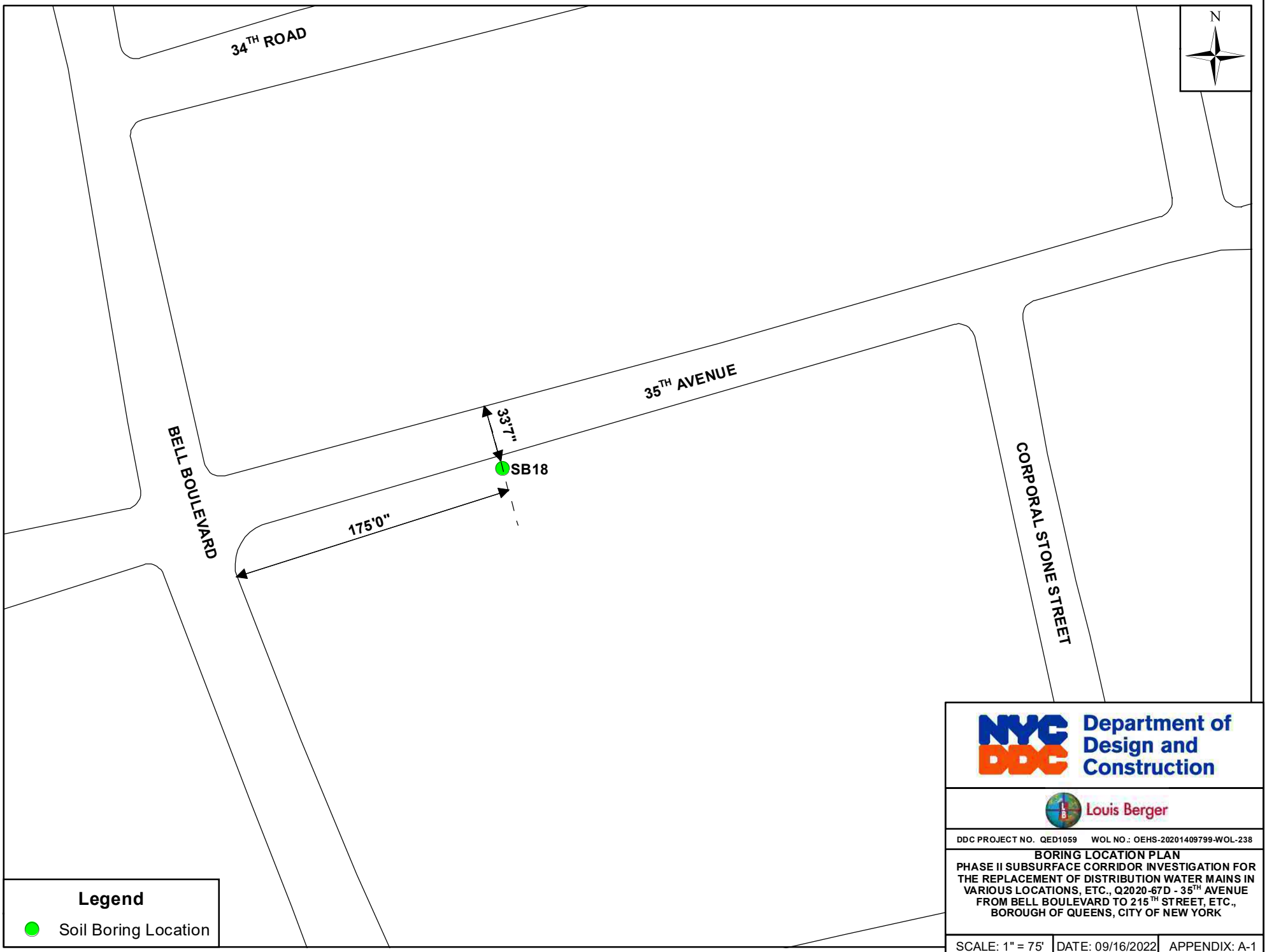
DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

SOIL BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2020-67D - 35TH AVENUE FROM BELL BOULEVARD TO 215TH STREET, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 200'	DATE: 09/16/22	FIGURE: 2

APPENDIX A
BORING LOCATION PLAN



Department of Design and Construction

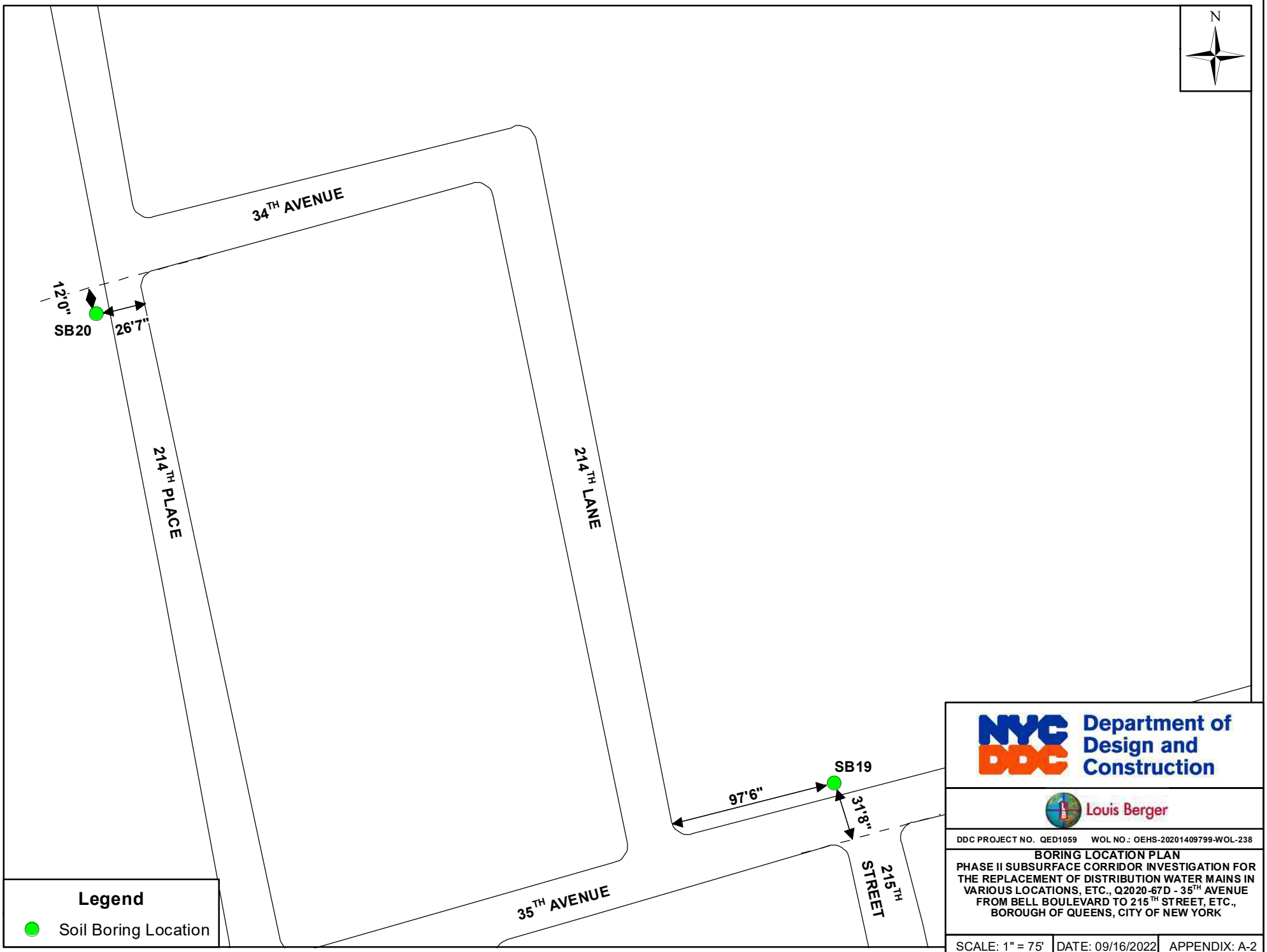
Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN

PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2020-67D - 35TH AVENUE FROM BELL BOULEVARD TO 215TH STREET, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-1



NYC DDC Department of Design and Construction

Louis Berger

DDC PROJECT NO. QED1059 WOL NO.: OEHS-20201409799-WOL-238

BORING LOCATION PLAN
PHASE II SUBSURFACE CORRIDOR INVESTIGATION FOR THE REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS, ETC., Q2020-67D - 35TH AVENUE FROM BELL BOULEVARD TO 215TH STREET, ETC., BOROUGH OF QUEENS, CITY OF NEW YORK

SCALE: 1" = 75'	DATE: 09/16/2022	APPENDIX: A-2

APPENDIX B
GEOLOGIC BORING LOGS

Louis Berger	**Drilling Log** Page 1 of 1	**BORING NO.: SB18** **LOCATION: Queens, NY**

CLIENT: NYC Department of Design and Construction			**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2020-67D Corridor			**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services			**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Hand Auger			**DATE STARTED:** 8/10/2022
BOREHOLE DATA	**WELL DATA**		**DATE FINISHED:** 8/10/2022
Diameter (in): 6	**Well Diameter (in):** N/A		**DRIILER:** E. Watkins
Total Depth (ft.): 5.5	**Total Depth (ft.):** N/A		**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): 5.5	**Screen Length (ft):** N/A		**NORTHING (ft):** 219547.575242
Depth to Water (ft.): N/A	**Depth to Water (ft.):** N/A		**EASTING (ft):** 1047110.286420
Depth to Rock (ft.): N/A	**Slot Size (in):** N/A		**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.
Refusal encoutered at 5.5 ftbg due to cobbles.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	1		FILL			<1	Dusky brown (5YR 2/2) to dusky yellowish brown (10YR 2/2), coarse to fine SAND, and Silt, trace coarse to fine Gravel, moist.	**Silty Sand (Fill)**
	2		FILL			<1	Dark yellowish brown (10YR 4/2), medium to fine SAND, and Silt, trace coarse to fine Gravel, dry.	
	3		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, some coarse to fine Gravel, With Cobbles, moist.	**Gravelly Sand (Fill)**
	4		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, trace coarse to fine Gravel, moist.	**Sand (Fill)**
	5		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, trace coarse to fine Gravel, with Cobbles (3% fill material: brick), moist.	
	6		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, trace coarse Gravel, (3% fill material: brick), dry. Total Depth of Boring 5.5 feet.	**Collected grab sample SB18 from 5 to 5.5 ftbg and composite sample SB18 from 0 to 5.5 ftbg.**

Drilling Log

Louis Berger

Page 1 of 1

BORING NO.: SB19

LOCATION: Queens, NY

CLIENT: NYC Department of Design and Construction	**PROJECT NO.:** 31402661.219
PROJECT: Phase II SCI for Distribution Water Main Work in Q2020-67D Corridor	**FMS ID#:** QED1059
DRILLING CONTRACTOR: PAL Environmental Services	**WOL #:** OEHS-20201409799-WOL-238
DRILLING METHOD: Vactron and Air Knife	**DATE STARTED:** 8/10/2022
BOREHOLE DATA / **WELL DATA**	**DATE FINISHED:** 8/10/2022
Diameter (in): 6 / **Well Diameter (in):** N/A	**DRIILER:** E. Watkins
Total Depth (ft.): 6 / **Total Depth (ft.):** N/A	**INSPECTOR:** C. Calandrillo
Depth to Refusal (ft): N/A / **Screen Length (ft):** N/A	**NORTHING (ft):** 219811.644108
Depth to Water (ft.): N/A / **Depth to Water (ft.):** N/A	**EASTING (ft):** 1047891.450100
Depth to Rock (ft.): N/A / **Slot Size (in):** N/A	**SURFACE ELEVATION (ft):** N/A

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 3/4), medium to fine SAND, some Silt, some coarse to fine Gravel, dry.	**Gravelly Silty Sand (Fill)**
	1		FILL			<1	Moderate brown (5YR 4/4) to dark yellowish orange (10YR 6/6), medium to fine SAND, some coarse to fine Gravel, With Cobbles, dry.	**Gravelly Sand (Fill)**
	2		FILL			<1	Dark yellowish orange (10YR 6/6), medium to fine SAND, some coarse to fine Gravel, moist.	
	3		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, some coarse to fine Gravel, moist.	
	4		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some coarse to fine Gravel, moist.	
	5		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, some coarse to fine Gravel, moist.	**Collected grab sample SB19 from 5.5 to 6 ftbg and composite sample SB19 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

Drilling Log

Page 1 of 1

BORING NO.: SB20

LOCATION: Queens, NY

CLIENT:	NYC Department of Design and Construction	**PROJECT NO.:**	31402661.219
PROJECT:	Phase II SCI for Distribution Water Main Work in Q2020-67D Corridor	**FMS ID#:**	QED1059
DRILLING CONTRACTOR:	PAL Environmental Services	**WOL #:**	OEHS-20201409799-WOL-238
DRILLING METHOD:	Hand Auger	**DATE STARTED:**	8/10/2022
BOREHOLE DATA		**DATE FINISHED:**	8/10/2022
Diameter (in):	6	**DRIILER:**	E. Watkins
Total Depth (ft.):	6	**INSPECTOR:**	C. Calandrillo
Depth to Refusal (ft):	N/A	**NORTHING (ft):**	220099.636756
Depth to Water (ft.):	N/A	**EASTING (ft):**	1047438.960040
Depth to Rock (ft.):	N/A	**SURFACE ELEVATION (ft):**	N/A
WELL DATA			
Well Diameter (in):	N/A		
Total Depth (ft.):	N/A		
Screen Length (ft):	N/A		
Depth to Water (ft.):	N/A		
Slot Size (in):	N/A		

NOTES: Soil description based on Unified Soil Classification System (USCS), Burmister Classification and Munsell Rock Color Chart.

Well Construction	Depth (feet)	Lithology	USCS	Sample Interval	Sample Recovery	PID Reading (ppm)	Description and Stratigraphy	Remarks
	0		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some Silt, some coarse to fine Gravel, moist.	**Gravelly Silty Sand (Fill)**
	1		FILL			<1	Moderate brown (5YR 4/4), medium to fine SAND, some coarse to fine Gravel, moist.	**Gravelly Sand (Fill)**
	2		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some Silt, some coarse to fine Gravel, moist.	**Gravelly Silty Sand (Fill)**
	3		FILL			<1	Moderate brown (5YR 4/4), coarse to fine SAND, some coarse to fine Gravel (3% fill material: asphalt), moist.	**Gravelly Sand (Fill)**
	4		FILL			<1	Moderate brown (5YR 4/4), Clayey SILT, some coarse to fine Sand, trace coarse to fine Gravel, moist.	**Sandy Clayey Silt (Fill)**
	5		FILL			<1	Moderate brown (5YR 4/4), Clayey SILT, some coarse to fine Sand, With Cobbles, moist.	**Collected grab sample SB20 from 5.5 to 6 ftbg and composite sample SB20 from 0 to 6 ftbg.**
	6						Total Depth of Boring 6 feet.	

APPENDIX C
LABORATORY ANALYTICAL RESULTS

CHEMTECH

ANALYTICAL RESULTS SUMMARY

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4189

ATTENTION : Jonathan Ganz

NELAP ACCREDITED TNI LABORATORY

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration		C	MDL	RDL	Units
Client ID:	**SB18**									
N4189-01	SB18	SOIL	unknown10.947	*	6.10		J	0	0	ug/Kg
			Total Tics :			6.10				
			Total Concentration:			6.10				
Client ID:	**SB19**									
N4189-03	SB19	SOIL	Acetone		14.4		J	13.2	27.1	ug/Kg
			Total Voc :			14.4				
			Total Concentration:			14.4				
Client ID:	**SB13**									
N4189-13	SB13	SOIL	Acetone		15.3		J	12.8	26.1	ug/Kg
			Total Voc :			15.3				
			Total Concentration:			15.3				
Client ID:	**SB12RE**									
N4189-15RE	SB12RE	SOIL	Acetone		68.0			13.5	27.7	ug/Kg
			Total Voc :			68.0				
			Total Concentration:			68.0				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-01	SB18	SOIL	Phenanthrene	340.000		91.5	190	ug/Kg
N4189-01	SB18	SOIL	Fluoranthene	360.000		87.3	190	ug/Kg
N4189-01	SB18	SOIL	Pyrene	420.000		81.2	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)anthracene	160.000	J	95	190	ug/Kg
N4189-01	SB18	SOIL	Chrysene	160.000	J	93.6	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(b)fluoranthene	180.000	J	75.5	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)pyrene	170.000	J	74.1	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(g,h,i)perylene	130.000	J	110	190	ug/Kg
			Total Svoc :	**1,920.00**				
			Total Concentration:	**1,920.00**				
Client ID : SB20								
N4189-05	SB20	SOIL	Phenanthrene	180.000	J	94	190	ug/Kg
N4189-05	SB20	SOIL	Fluoranthene	260.000		89.7	190	ug/Kg
N4189-05	SB20	SOIL	Pyrene	220.000		83.4	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)anthracene	150.000	J	97.6	190	ug/Kg
N4189-05	SB20	SOIL	Chrysene	150.000	J	96.1	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(b)fluoranthene	190.000		77.6	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)pyrene	150.000	J	76.1	190	ug/Kg
			Total Svoc :	**1,300.00**				
			Total Concentration:	**1,300.00**				
Client ID : SB17								
N4189-11	SB17	SOIL	Fluoranthene	190.000		82.6	180	ug/Kg
N4189-11	SB17	SOIL	Pyrene	140.000	J	76.8	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)anthracene	94.100	J	89.8	180	ug/Kg
N4189-11	SB17	SOIL	Chrysene	98.600	J	88.5	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(b)fluoranthene	150.000	J	71.4	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)pyrene	110.000	J	70.1	180	ug/Kg
			Total Svoc :	**782.70**				
			Total Concentration:	**782.70**				
Client ID : SB11								
N4189-19	SB11	SOIL	Phenanthrene	180.000		87	180	ug/Kg
N4189-19	SB11	SOIL	Fluoranthene	470.000		83	180	ug/Kg
N4189-19	SB11	SOIL	Pyrene	380.000		77.2	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)anthracene	230.000		90.3	180	ug/Kg
N4189-19	SB11	SOIL	Chrysene	260.000		89	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(b)fluoranthene	430.000		71.8	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(k)fluoranthene	120.000	J	76.6	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)pyrene	340.000		70.5	180	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4189-19	SB11	SOIL	Indeno(1,2,3-cd)pyrene	180.000		110	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(g,h,i)perylene	230.000		100	180	ug/Kg
			Total Svoc :	**2,820.00**				
			Total Concentration:	**2,820.00**				

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID :								
			Total Concentration:	**0.000**				

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-02	SB18	TCLP	Barium	1,160.000		77.9	500	ug/L
N4189-02	SB18	TCLP	Chromium	129.000		10.4	50.0	ug/L
Client ID : SB19								
N4189-04	SB19	TCLP	Barium	1,550.000		77.9	500	ug/L
Client ID : SB20								
N4189-06	SB20	TCLP	Barium	1,430.000		77.9	500	ug/L
N4189-06	SB20	TCLP	Chromium	14.000	J	10.4	50.0	ug/L
N4189-06	SB20	TCLP	Lead	34.200	J	19.4	60.0	ug/L
Client ID : SB15								
N4189-08	SB15	TCLP	Barium	773.000		77.9	500	ug/L
N4189-08	SB15	TCLP	Chromium	14.300	J	10.4	50.0	ug/L
Client ID : SB16								
N4189-10	SB16	TCLP	Barium	1,540.000		77.9	500	ug/L
N4189-10	SB16	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4189-10	SB16	TCLP	Lead	19.500	J	19.4	60.0	ug/L
Client ID : SB17								
N4189-12	SB17	TCLP	Barium	1,280.000		77.9	500	ug/L
N4189-12	SB17	TCLP	Chromium	10.700	J	10.4	50.0	ug/L
N4189-12	SB17	TCLP	Lead	21.400	J	19.4	60.0	ug/L
Client ID : SB13								
N4189-14	SB13	TCLP	Barium	1,210.000		77.9	500	ug/L
N4189-14	SB13	TCLP	Chromium	11.200	J	10.4	50.0	ug/L
N4189-14	SB13	TCLP	Lead	31.900	J	19.4	60.0	ug/L
Client ID : SB12								
N4189-16	SB12	TCLP	Barium	1,190.000		77.9	500	ug/L
N4189-16	SB12	TCLP	Chromium	23.800	J	10.4	50.0	ug/L
Client ID : SB14								
N4189-18	SB14	TCLP	Barium	1,180.000		77.9	500	ug/L
N4189-18	SB14	TCLP	Chromium	11.600	J	10.4	50.0	ug/L
Client ID : SB11								
N4189-20	SB11	TCLP	Barium	1,140.000		77.9	500	ug/L
N4189-20	SB11	TCLP	Chromium	95.900		10.4	50.0	ug/L
N4189-20	SB11	TCLP	Lead	23.100	J	19.4	60.0	ug/L

CHEMTECH

DATA PACKAGE

VOLATILE ORGANICS
GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS

PROJECT NAME : QED1059 PHASE II SCI

LOUIS BERGER U.S., INC., A WSP COMPANY

96 Morton Street

8th Floor

New York, NY - 10014

Phone No: 212-462-8500

ORDER ID : N4189

ATTENTION : Jonathan Ganz

NELAP ACCREDITED TNI LABORATORY

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP

Table Of Contents for N4189

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : N4189

Project ID : QED1059 Phase II SCI

Client : Louis Berger U.S., Inc., A WSP Company

Lab Sample Number	Client Sample Number
N4189-01	SB18
N4189-02	SB18
N4189-03	SB19
N4189-04	SB19
N4189-05	SB20
N4189-06	SB20
N4189-07	SB15
N4189-08	SB15
N4189-09	SB16
N4189-10	SB16
N4189-11	SB17
N4189-12	SB17
N4189-13	SB13
N4189-14	SB13
N4189-15	SB12
N4189-16	SB12
N4189-17	SB14
N4189-18	SB14
N4189-19	SB11
N4189-20	SB11

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis performed on instrument MSVOA_Y were done using GC column Rxi-624Sil MS, which is 30 meters, 0.25 mm id, 1.4 um df, Restek Cat. #13868. The Trap was supplied by Supelco, VOCARB 3000, ATOMAX XYZ Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
samples # SB16 [1,2-Dichloroethane-d4 - 205%, Toluene-d8 - 71%] and
SB17 [1,2-Dichloroethane-d4 - 248%, Dibromofluoromethane - 150%] VIAL A analyzed but didnot purge as a corrective action VIAL B analyzed but surrogate failing therefore lab reported VIAL B as final analysis while sample # SB12 [Dibromofluoromethane - 52%], SB12RE [1,2-Dichloroethane-d4 - 236%, Toluene-d8 - 76%] ,SB14RE [1,2-Dichloroethane-d4 - 184%, Toluene-d8 - 73%] All the failure samples were reanalyzed to confirm the results as per method and reported in the data.

The Internal Standards Areas met the acceptable requirements except for samples # SB12, SB12RE, SB14 and SB14RE All the failure samples were reanalyzed to confirm the results as per method and reported in the data. while sample # SB20 VIAL A analyzed but Internal Standard fail as a corrective action VIAL B analyzed but didnot purge therefore lab reported VIAL A as final analysis while samples # SB16, SB17 VIAL

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

A analyzed but didnot purge as a corrective action VIAL B analyzed but internal are failing therefore lab reported VIAL B as final analysis

The Retention Times were acceptable for all samples.

The RPD for {VD0815SBSD01} with File ID: VD074097.D met criteria except for Trichlorofluoromethane[51%] due to difference in results of BS and BSD.

The Blank Spike for {VD0815SBS01} with File ID: VD074096.D met requirements for all samples except for Dichlorodifluoromethane[141%] but no positive hit in associated sample therefore no corrective action taken.

The Blank Spike Duplicate for {VD0815SBSD01} with File ID: VD074097.D met requirements for all samples except for Dichlorodifluoromethane[138%], Trichlorofluoromethane[167%] but no positive hits in associated samples therefore no corrective action taken.

The Blank Spike for {VD0816SBS01} with File ID: VD074104.D met requirements for all samples except for Chloromethane[134%] but no positive hit in associated sample therefore no corrective action taken.

The Blank analysis did not indicate the presence of lab contamination.

The %RSD is greater than 20% in the Initial Calibration method (82Y081522S.M) for Dichlorodifluoromethane, Chloromethane, Chloroethane, Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, 1,1-Dichloroethene, Acetone, Carbon Disulfide, Methyl Acetate, Methylene Chloride, Cyclohexane, 1,2-Dichloroethane-d4 these compounds are passing on Linear Regression.

The %RSD is greater than 15% in the Initial Calibration method (82Y081222S.M) for Bromomethane, Methyl Acetate, Methylene Chloride, these compounds are passing on Linear Regression.

The Continuous Calibration File ID VD074102.D met the requirements except for Trichlorofluoromethane but no positive hit in associated samples therefore no corrective action taken.

The Tuning criteria met requirements.

E. Additional Comments:
sample # SB12 & SB12RE not match for acetone due to in-house contamination.

Samples for MS/MSD for VOC analysis were not provided with this set of samples. The Blank Spike Duplicate is reported with the data.

Trip Blank was not provided with this set of samples.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Gasoline Range Organics

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Gasoline Range Organics.

C. Analytical Techniques:
The analysis performed on instrument FID_B were done using GC column RTX502.2 which is 60 meters, 0.53mm ID, 3.0 um df, cat#10909.The analysis of Gasoline Range Organics was based on method 8015D.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.
The Blank Spike met requirements for all samples.

The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.
Samples SB18, SB20, SB16, SB17, SB13, SB12 and SB14 were diluted due to bad matrices.

E. Additional Comments:
Samples SB18, SB20, SB16, SB17, SB13, SB12 and SB14 were directly run in methanol as both low level soil vials did not purged.
The soil samples results are based on a dry weight basis.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:55 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: SVOC-PAH

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for SVOC-PAH.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column DB-UI 8270D which is 20 meters, 0.18 mm ID, 0.36 um dfThe analysis of SVOC-PAH was based on method 8270E and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for
SB16 [2-Fluorobiphenyl - 27%, Nitrobenzene-d5 - 26%],
SB16RE [2-Fluorobiphenyl - 27% and Nitrobenzene-d5 - 26%], All the failure samples in surrogates were reanalyzed to confirm the results as per method and reported in the data.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .

The Continuous Calibration File ID BF129846.D met the requirements except for Benzo(g,h,i)perylene biased high therefore no corrective action taken.

The Tuning criteria met requirements.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

E. Additional Comments:
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: PCB

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_O. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:
The soil samples results are based on a dry weight basis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Diesel Range Organics

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Diesel Range Organics.

C. Analytical Techniques:
The analysis were performed on instrument FID_G. The column is RXI-1MS which is 20 meters, 0.18mm ID, 0.18 um df, catalog 13302.The analysis of Diesel Range Organics was based on method 8015D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for
SB18 [Tetracosane-d50 - 33%],
SB16 [Tetracosane-d50 - 29%], SB16RE [Tetracosane-d50 - 28%],
SB17 [Tetracosane-d50 - 34%] and SB17RE [Tetracosane-d50 - 34%].
The Retention Times were acceptable for all samples.
The MS {N4189-03MS} with File ID: FF011250.D recoveries met the requirements for all compounds except for DRO[68%] due to matrix interference.
The MSD {N4189-03MSD} with File ID: FF011251.D recoveries met the acceptable requirements except for DRO[65%] due to matrix interference.
The RPD met criteria.
The Blank Spike met requirements for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.
Sample SB11 was diluted due to high concentration.

E. Additional Comments:
The soil samples results are based on a dry weight basis.

SB18: Surrogate recoveries fail in original run but re-analysis run surrogate is passing in lower end so both run reported in hardcopy.

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Sample SB18 original run reported as screening data

F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_ N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:56 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: TCLP Mercury,TCLP ICP Metals

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for TCLP Mercury,TCLP ICP Metals.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:57 am, Aug 26, 2022

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Louis Berger U.S., Inc., A WSP Company
Project Name: QED1059 Phase II SCI
Project # N/A
Chemtech Project # N4189
Test Name: Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/11/2022.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Diesel Range Organics, Gasoline Range Organics, Ignitability, Paint Filter, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS and VOC-TCLVOA-10. This data package contains results for Corrosivity,Paint Filter,Ignitability,Reactive Cyanide,Reactive Sulfide.

C. Analytical Techniques:
The analysis of Ignitability was based on method 1030, The analysis of Reactive Cyanide was based on method 9012B, The analysis of Reactive Sulfide was based on method 9034, The analysis of Corrosivity was based on method 9045D and The analysis of Paint Filter was based on method 9095B.

D. QA/ QC Samples:
The Holding Times were met for all samples except for SB11 of Corrosivity, for SB12 of Corrosivity. for SB13 of Corrosivity. for SB14 of Corrosivity. for SB15 of Corrosivity. for SB16 of Corrosivity .for SB17 of Corrosivity. for SB18 of Corrosivity.for SB19 of Corrosivity .for SB20 of Corrosivity as samples are receive out of hold.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:57 am, Aug 26, 2022

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value**.** This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **N4189**

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: **SOHIL JODHANI** **Date:** **08/26/2022**

2nd Level QA Review Signature: N. N. Pandya

APPROVED
By Nimisha Pandya QA/QC Supervisor at 11:58 am, Aug 26, 2022

Date:

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-15RE	**SB12RE**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	
N4189-17RE	**SB14RE**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/16/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			VOC-TCLVOA-10	8260D			08/14/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter		Concentration	C	MDL	RDL	Units
Client ID:	**SB18**								
N4189-01	SB18	SOIL	unknown10.947	*	6.10	J	0	0	ug/Kg
			Total Tics :		6.10				
			Total Concentration:		6.10				
Client ID:	**SB19**								
N4189-03	SB19	SOIL	Acetone		14.4	J	13.2	27.1	ug/Kg
			Total Voc :		14.4				
			Total Concentration:		14.4				
Client ID:	**SB13**								
N4189-13	SB13	SOIL	Acetone		15.3	J	12.8	26.1	ug/Kg
			Total Voc :		15.3				
			Total Concentration:		15.3				
Client ID:	**SB12RE**								
N4189-15RE	SB12RE	SOIL	Acetone		68.0		13.5	27.7	ug/Kg
			Total Voc :		68.0				
			Total Concentration:		68.0				

SAMPLE DATA

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.94	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.10	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.97	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.94	5.50	ug/Kg
67-64-1	Acetone	27.4	U	13.4	27.4	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.82	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.77	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.92	5.50	ug/Kg
78-93-3	2-Butanone	27.4	U	8.00	27.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.86	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.89	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.73	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.82	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.88	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.72	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.92	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.71	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.77	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.4	U	5.00	27.4	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.81	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.94	5.50	ug/Kg
591-78-6	2-Hexanone	27.4	U	5.10	27.4	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.82	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.82	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.83	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.71	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.77	5.50	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.50	U	0.86	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.86	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.89	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.73	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.0		50 - 163	112%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		54 - 147	96%	SPK: 50
2037-26-5	Toluene-d8	43.0		78 - 125	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.3		50 - 146	85%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	53300	7.782			
540-36-3	1,4-Difluorobenzene	103000	8.685			
3114-55-4	Chlorobenzene-d5	106000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	47200	13.428			
TENTATIVE IDENTIFIED COMPOUNDS						
	unknown10.947	6.10	J		10.9	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.8
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010006.D	1		08/14/22 18:40	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	UQ	0.93	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.99	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.30	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.97	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	UQ	1.10	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.93	5.40	ug/Kg
67-64-1	Acetone	14.4	J	13.2	27.1	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.81	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.8	U	6.50	10.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.76	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	27.1	U	7.90	27.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.86	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.88	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.73	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.81	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.87	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.72	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.76	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.1	U	5.00	27.1	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.80	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.93	5.40	ug/Kg
591-78-6	2-Hexanone	27.1	U	5.10	27.1	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.81	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.81	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.76	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.8	U	1.60	10.8	ug/Kg
95-47-6	o-Xylene	5.40	U	0.86	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.86	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.88	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.73	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	66.0		50 - 163	132%	SPK: 50
1868-53-7	Dibromofluoromethane	50.6		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	39.5		78 - 125	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.2		50 - 146	92%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	113000	7.973			
540-36-3	1,4-Difluorobenzene	202000	8.856			
3114-55-4	Chlorobenzene-d5	192000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	88900	13.555			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.7
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074098.D	1		08/15/22 19:06	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	U	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	28.1	U	13.7	28.1	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.2	U	6.70	11.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.94	5.60	ug/Kg
78-93-3	2-Butanone	28.1	U	8.20	28.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.76	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.94	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.1	U	5.10	28.1	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.1	U	5.30	28.1	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.85	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.2	U	1.70	11.2	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	42.8		50 - 163	86%	SPK: 50
1868-53-7	Dibromofluoromethane	43.3		54 - 147	87%	SPK: 50
2037-26-5	Toluene-d8	40.2		78 - 125	80%	SPK: 50
460-00-4	4-Bromofluorobenzene	31.0		50 - 146	62%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	11900	7.783			
540-36-3	1,4-Difluorobenzene	20500	8.685			
3114-55-4	Chlorobenzene-d5	17700	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	6500	13.422			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010008.D	1		08/14/22 19:27	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	U	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.10	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.6		50 - 163	103%	SPK: 50
1868-53-7	Dibromofluoromethane	45.2		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	42.0		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.3		50 - 146	81%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	75100	7.783			
540-36-3	1,4-Difluorobenzene	146000	8.685			
3114-55-4	Chlorobenzene-d5	149000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	66900	13.422			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.8
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010009.D	1		08/14/22 19:50	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	UQ	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.97	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	26.5	U	12.9	26.5	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.80	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.99	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.6	U	6.30	10.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.5	U	7.70	26.5	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.80	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.5	U	4.90	26.5	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.5	U	5.00	26.5	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.80	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.80	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.81	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.6	U	1.60	10.6	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	1.00	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	100	*	50 - 163	205%	SPK: 50
1868-53-7	Dibromofluoromethane	60.5		54 - 147	121%	SPK: 50
2037-26-5	Toluene-d8	35.5	*	78 - 125	71%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.2		50 - 146	84%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	38000	7.973			
540-36-3	1,4-Difluorobenzene	67600	8.855			
3114-55-4	Chlorobenzene-d5	70300	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	29600	13.561			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074109.D	1		08/16/22 18:50	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	UQ	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.2	U	6.10	10.2	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.2	U	1.50	10.2	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	120	*	50 - 163	248%	SPK: 50
1868-53-7	Dibromofluoromethane	75.2	*	54 - 147	150%	SPK: 50
2037-26-5	Toluene-d8	39.3		78 - 125	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.1		50 - 146	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	7530	7.973			
540-36-3	1,4-Difluorobenzene	12700	8.861			
3114-55-4	Chlorobenzene-d5	14400	11.637			
3855-82-1	1,4-Dichlorobenzene-d4	6380	13.555			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	3.4
Sample Wt/Vol:	5.05 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074110.D	1		08/16/22 19:18	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.90	5.20	ug/Kg
74-87-3	Chloromethane	5.20	U	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.95	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.93	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.75	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.90	5.20	ug/Kg
67-64-1	Acetone	15.3	J	12.8	26.1	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.78	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.97	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.5	U	6.20	10.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.73	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.88	5.20	ug/Kg
78-93-3	2-Butanone	26.1	U	7.60	26.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.83	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.85	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.70	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.78	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.84	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.69	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.88	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.76	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.68	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.73	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.1	U	4.80	26.1	ug/Kg
108-88-3	Toluene	5.20	U	0.66	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.77	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.74	5.20	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.90	5.20	ug/Kg
591-78-6	2-Hexanone	26.1	U	4.90	26.1	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.78	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.78	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.79	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.68	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.73	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.5	U	1.50	10.5	ug/Kg
95-47-6	o-Xylene	5.20	U	0.83	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.83	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.85	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.75	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.70	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.67	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.98	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.10	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.4		50 - 163	101%	SPK: 50
1868-53-7	Dibromofluoromethane	45.0		54 - 147	90%	SPK: 50
2037-26-5	Toluene-d8	41.4		78 - 125	83%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.9		50 - 146	78%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	76300	7.783			
540-36-3	1,4-Difluorobenzene	148000	8.685			
3114-55-4	Chlorobenzene-d5	148000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	66100	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010012.D	1		08/14/22 21:00	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	U	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	28.1	U	13.7	28.1	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.3	U	6.70	11.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.95	5.60	ug/Kg
78-93-3	2-Butanone	28.1	U	8.20	28.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.95	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.1	U	5.20	28.1	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.1	U	5.30	28.1	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.86	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.3	U	1.70	11.3	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.5		50 - 163	115%	SPK: 50
1868-53-7	Dibromofluoromethane	26.0	*	54 - 147	52%	SPK: 50
2037-26-5	Toluene-d8	42.2		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	34.3		50 - 146	69%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	3400	7.789			
540-36-3	1,4-Difluorobenzene	6090	8.685			
3114-55-4	Chlorobenzene-d5	5910	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	2200	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010013.D	1		08/14/22 21:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	UQ	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.99	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.80	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	68.0		13.5	27.7	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	11.1	U	6.60	11.1	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.78	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.7	U	8.10	27.7	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.88	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.90	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.89	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.81	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.78	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.7	U	5.10	27.7	ug/Kg
108-88-3	Toluene	5.50	U	0.70	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.79	5.50	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.7	U	5.20	27.7	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.78	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.1	U	1.60	11.1	ug/Kg
95-47-6	o-Xylene	5.50	U	0.88	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.88	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.90	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.80	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.30	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	120	*	50 - 163	236%	SPK: 50
1868-53-7	Dibromofluoromethane	70.9		54 - 147	142%	SPK: 50
2037-26-5	Toluene-d8	37.8	*	78 - 125	76%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.9		50 - 146	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	27200	7.973			
540-36-3	1,4-Difluorobenzene	50000	8.855			
3114-55-4	Chlorobenzene-d5	56800	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	26800	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12RE	SDG No.:	N4189
Lab Sample ID:	N4189-15RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	11.5
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074111.D	1		08/16/22 19:47	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.89	5.20	ug/Kg
74-87-3	Chloromethane	5.20	U	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.94	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.92	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.74	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.89	5.20	ug/Kg
67-64-1	Acetone	25.8	U	12.6	25.8	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.77	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.96	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.20	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.70	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.72	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.87	5.20	ug/Kg
78-93-3	2-Butanone	25.8	U	7.50	25.8	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.81	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.70	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.84	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.69	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.77	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.83	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.68	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.87	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.75	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.67	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.72	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.8	U	4.70	25.8	ug/Kg
108-88-3	Toluene	5.20	U	0.65	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.76	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.73	5.20	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.89	5.20	ug/Kg
591-78-6	2-Hexanone	25.8	U	4.80	25.8	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.77	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.77	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.78	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.67	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.72	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.20	U	0.81	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.81	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.84	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.74	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.69	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.65	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.97	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.00	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.1		50 - 163	108%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		54 - 147	97%	SPK: 50
2037-26-5	Toluene-d8	42.5		78 - 125	85%	SPK: 50
460-00-4	4-Bromofluorobenzene	39.8		50 - 146	80%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	38200	7.789			
540-36-3	1,4-Difluorobenzene	72600	8.685			
3114-55-4	Chlorobenzene-d5	75400	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	33000	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010014.D	1		08/14/22 21:47	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.20	U	0.89	5.20	ug/Kg
74-87-3	Chloromethane	5.20	UQ	1.10	5.20	ug/Kg
75-01-4	Vinyl Chloride	5.20	U	0.94	5.20	ug/Kg
74-83-9	Bromomethane	5.20	U	1.20	5.20	ug/Kg
75-00-3	Chloroethane	5.20	U	0.92	5.20	ug/Kg
75-69-4	Trichlorofluoromethane	5.20	U	1.00	5.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.20	U	0.75	5.20	ug/Kg
75-35-4	1,1-Dichloroethene	5.20	U	0.89	5.20	ug/Kg
67-64-1	Acetone	25.9	U	12.7	25.9	ug/Kg
75-15-0	Carbon Disulfide	5.20	U	0.78	5.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.20	U	0.97	5.20	ug/Kg
79-20-9	Methyl Acetate	5.20	U	1.30	5.20	ug/Kg
75-09-2	Methylene Chloride	10.4	U	6.20	10.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
75-34-3	1,1-Dichloroethane	5.20	U	0.73	5.20	ug/Kg
110-82-7	Cyclohexane	5.20	U	0.87	5.20	ug/Kg
78-93-3	2-Butanone	25.9	U	7.60	25.9	ug/Kg
56-23-5	Carbon Tetrachloride	5.20	U	0.82	5.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.20	U	0.71	5.20	ug/Kg
74-97-5	Bromochloromethane	5.20	U	0.84	5.20	ug/Kg
67-66-3	Chloroform	5.20	U	0.70	5.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.20	U	0.78	5.20	ug/Kg
108-87-2	Methylcyclohexane	5.20	U	0.83	5.20	ug/Kg
71-43-2	Benzene	5.20	U	0.68	5.20	ug/Kg
107-06-2	1,2-Dichloroethane	5.20	U	0.87	5.20	ug/Kg
79-01-6	Trichloroethene	5.20	U	0.76	5.20	ug/Kg
78-87-5	1,2-Dichloropropane	5.20	U	0.67	5.20	ug/Kg
75-27-4	Bromodichloromethane	5.20	U	0.73	5.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.9	U	4.80	25.9	ug/Kg
108-88-3	Toluene	5.20	U	0.65	5.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.20	U	0.77	5.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.20	U	0.74	5.20	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.20	U	0.89	5.20	ug/Kg
591-78-6	2-Hexanone	25.9	U	4.90	25.9	ug/Kg
124-48-1	Dibromochloromethane	5.20	U	0.78	5.20	ug/Kg
106-93-4	1,2-Dibromoethane	5.20	U	0.78	5.20	ug/Kg
127-18-4	Tetrachloroethene	5.20	U	0.79	5.20	ug/Kg
108-90-7	Chlorobenzene	5.20	U	0.67	5.20	ug/Kg
100-41-4	Ethyl Benzene	5.20	U	0.73	5.20	ug/Kg
179601-23-1	m/p-Xylenes	10.4	U	1.50	10.4	ug/Kg
95-47-6	o-Xylene	5.20	U	0.82	5.20	ug/Kg
100-42-5	Styrene	5.20	U	0.82	5.20	ug/Kg
75-25-2	Bromoform	5.20	U	0.84	5.20	ug/Kg
98-82-8	Isopropylbenzene	5.20	U	0.75	5.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.20	U	1.20	5.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.20	U	0.70	5.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.20	U	0.65	5.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.20	U	0.66	5.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.20	U	1.30	5.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.20	U	0.98	5.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.20	U	1.00	5.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	92.0	*	50 - 163	184%	SPK: 50
1868-53-7	Dibromofluoromethane	57.4		54 - 147	115%	SPK: 50
2037-26-5	Toluene-d8	36.5	*	78 - 125	73%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.9		50 - 146	88%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	56000	7.973			
540-36-3	1,4-Difluorobenzene	104000	8.855			
3114-55-4	Chlorobenzene-d5	108000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	44700	13.561			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14RE	SDG No.:	N4189
Lab Sample ID:	N4189-17RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.4
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074112.D	1		08/16/22 20:16	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.10	U	0.88	5.10	ug/Kg
74-87-3	Chloromethane	5.10	U	1.10	5.10	ug/Kg
75-01-4	Vinyl Chloride	5.10	U	0.93	5.10	ug/Kg
74-83-9	Bromomethane	5.10	U	1.20	5.10	ug/Kg
75-00-3	Chloroethane	5.10	U	0.91	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	5.10	U	0.99	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.10	U	0.74	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	5.10	U	0.88	5.10	ug/Kg
67-64-1	Acetone	25.6	U	12.5	25.6	ug/Kg
75-15-0	Carbon Disulfide	5.10	U	0.77	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.10	U	0.95	5.10	ug/Kg
79-20-9	Methyl Acetate	5.10	U	1.30	5.10	ug/Kg
75-09-2	Methylene Chloride	10.3	U	6.10	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	5.10	U	0.72	5.10	ug/Kg
110-82-7	Cyclohexane	5.10	U	0.86	5.10	ug/Kg
78-93-3	2-Butanone	25.6	U	7.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.10	U	0.81	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.10	U	0.70	5.10	ug/Kg
74-97-5	Bromochloromethane	5.10	U	0.83	5.10	ug/Kg
67-66-3	Chloroform	5.10	U	0.69	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.10	U	0.77	5.10	ug/Kg
108-87-2	Methylcyclohexane	5.10	U	0.82	5.10	ug/Kg
71-43-2	Benzene	5.10	U	0.68	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	5.10	U	0.86	5.10	ug/Kg
79-01-6	Trichloroethene	5.10	U	0.75	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	5.10	U	0.67	5.10	ug/Kg
75-27-4	Bromodichloromethane	5.10	U	0.72	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.6	U	4.70	25.6	ug/Kg
108-88-3	Toluene	5.10	U	0.65	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.10	U	0.76	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.10	U	0.73	5.10	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.10	U	0.88	5.10	ug/Kg
591-78-6	2-Hexanone	25.6	U	4.80	25.6	ug/Kg
124-48-1	Dibromochloromethane	5.10	U	0.77	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	5.10	U	0.77	5.10	ug/Kg
127-18-4	Tetrachloroethene	5.10	U	0.78	5.10	ug/Kg
108-90-7	Chlorobenzene	5.10	U	0.67	5.10	ug/Kg
100-41-4	Ethyl Benzene	5.10	U	0.72	5.10	ug/Kg
179601-23-1	m/p-Xylenes	10.3	U	1.50	10.3	ug/Kg
95-47-6	o-Xylene	5.10	U	0.81	5.10	ug/Kg
100-42-5	Styrene	5.10	U	0.81	5.10	ug/Kg
75-25-2	Bromoform	5.10	U	0.83	5.10	ug/Kg
98-82-8	Isopropylbenzene	5.10	U	0.74	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.10	U	1.20	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.10	U	0.69	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.10	U	0.65	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.10	U	0.66	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.10	U	1.30	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.10	U	0.96	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.10	U	1.00	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.7		50 - 163	109%	SPK: 50
1868-53-7	Dibromofluoromethane	46.4		54 - 147	93%	SPK: 50
2037-26-5	Toluene-d8	43.0		78 - 125	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	39.2		50 - 146	78%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	68200	7.783			
540-36-3	1,4-Difluorobenzene	130000	8.685			
3114-55-4	Chlorobenzene-d5	131000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	58800	13.422			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010015.D	1		08/14/22 22:11	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	Recovery	Qual	Limits Low	Limits High
N4189-01	SB18	1,2-Dichloroethane-d4	50	56.0	112		50	163
		Dibromofluoromethane	50	47.8	96		54	147
		Toluene-d8	50	43.0	86		78	125
		4-Bromofluorobenzene	50	42.4	85		50	146
N4189-03	SB19	1,2-Dichloroethane-d4	50	66.0	132		50	163
		Dibromofluoromethane	50	50.6	101		54	147
		Toluene-d8	50	39.5	79		78	125
		4-Bromofluorobenzene	50	46.3	92		50	146
N4189-05	SB20	1,2-Dichloroethane-d4	50	42.8	86		50	163
		Dibromofluoromethane	50	43.3	87		54	147
		Toluene-d8	50	40.2	80		78	125
		4-Bromofluorobenzene	50	31.0	62		50	146
N4189-07	SB15	1,2-Dichloroethane-d4	50	51.6	103		50	163
		Dibromofluoromethane	50	45.2	90		54	147
		Toluene-d8	50	42.0	84		78	125
		4-Bromofluorobenzene	50	40.3	81		50	146
N4189-09	SB16	1,2-Dichloroethane-d4	50	102	205	*	50	163
		Dibromofluoromethane	50	60.5	121		54	147
		Toluene-d8	50	35.5	71	*	78	125
		4-Bromofluorobenzene	50	42.2	84		50	146
N4189-11	SB17	1,2-Dichloroethane-d4	50	124	248	*	50	163
		Dibromofluoromethane	50	75.2	150	*	54	147
		Toluene-d8	50	39.3	79		78	125
		4-Bromofluorobenzene	50	51.1	102		50	146
N4189-13	SB13	1,2-Dichloroethane-d4	50	50.4	101		50	163
		Dibromofluoromethane	50	45.0	90		54	147
		Toluene-d8	50	41.4	83		78	125
		4-Bromofluorobenzene	50	38.9	78		50	146
N4189-15	SB12	1,2-Dichloroethane-d4	50	57.5	115		50	163
		Dibromofluoromethane	50	26.0	52	*	54	147
		Toluene-d8	50	42.2	84		78	125
		4-Bromofluorobenzene	50	34.3	69		50	146
N4189-15RE	SB12RE	1,2-Dichloroethane-d4	50	118	236	*	50	163
		Dibromofluoromethane	50	70.9	142		54	147
		Toluene-d8	50	37.8	76	*	78	125
		4-Bromofluorobenzene	50	49.9	100		50	146
N4189-17	SB14	1,2-Dichloroethane-d4	50	54.1	108		50	163
		Dibromofluoromethane	50	48.6	97		54	147
		Toluene-d8	50	42.5	85		78	125
		4-Bromofluorobenzene	50	39.8	80		50	146
N4189-17RE	SB14RE	1,2-Dichloroethane-d4	50	92.0	184	*	50	163
		Dibromofluoromethane	50	57.4	115		54	147
		Toluene-d8	50	36.5	73	*	78	125
		4-Bromofluorobenzene	50	43.9	88		50	146
N4189-19	SB11	1,2-Dichloroethane-d4	50	54.7	109		50	163
		Dibromofluoromethane	50	46.4	93		54	147
		Toluene-d8	50	43.0	86		78	125
		4-Bromofluorobenzene	50	39.2	78		50	146
VD0815SBL01	VD0815SBL01	1,2-Dichloroethane-d4	50	59.9	120		50	163
		Dibromofluoromethane	50	46.8	94		54	147
		Toluene-d8	50	38.9	78		78	125
		4-Bromofluorobenzene	50	44.5	89		50	146

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
VD0815SBS01	VD0815SBS01	1,2-Dichloroethane-d4	50	52.2	104	50	163
		Dibromofluoromethane	50	44.6	89	54	147
		Toluene-d8	50	41.3	83	78	125
		4-Bromofluorobenzene	50	47.8	96	50	146
VD0815SBSD01	VD0815SBSD01	1,2-Dichloroethane-d4	50	54.1	108	50	163
		Dibromofluoromethane	50	45.5	91	54	147
		Toluene-d8	50	41.0	82	78	125
		4-Bromofluorobenzene	50	47.9	96	50	146
VD0816SBL01	VD0816SBL01	1,2-Dichloroethane-d4	50	63.0	126	50	163
		Dibromofluoromethane	50	50.7	101	54	147
		Toluene-d8	50	40.0	80	78	125
		4-Bromofluorobenzene	50	45.4	91	50	146
VD0816SBS01	VD0816SBS01	1,2-Dichloroethane-d4	50	56.6	113	50	163
		Dibromofluoromethane	50	49.1	98	54	147
		Toluene-d8	50	42.1	84	78	125
		4-Bromofluorobenzene	50	50.2	100	50	146
VY0814SBL01	VY0814SBL01	1,2-Dichloroethane-d4	50	57.2	114	50	163
		Dibromofluoromethane	50	55.2	110	54	147
		Toluene-d8	50	52.0	104	78	125
		4-Bromofluorobenzene	50	47.0	94	50	146
VY0814SBS01	VY0814SBS01	1,2-Dichloroethane-d4	50	50.1	100	50	163
		Dibromofluoromethane	50	52.7	105	54	147
		Toluene-d8	50	52.2	104	78	125
		4-Bromofluorobenzene	50	51.9	104	50	146

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074096.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0815SBS01	Dichlorodifluoromethane	20	28.1	ug/Kg	141		*	64	136	
	Chloromethane	20	25.4	ug/Kg	127			70	130	
	Vinyl chloride	20	25.4	ug/Kg	127			72	129	
	Bromomethane	20	22.4	ug/Kg	112			58	141	
	Chloroethane	20	22.7	ug/Kg	114			69	130	
	Trichlorofluoromethane	20	19.7	ug/Kg	99			69	134	
	1,1,2-Trichlorotrifluoroethane	20	20.9	ug/Kg	104			81	123	
	1,1-Dichloroethene	20	21.0	ug/Kg	105			79	121	
	Acetone	100	82.5	ug/Kg	83			60	131	
	Carbon disulfide	20	23.8	ug/Kg	119			60	128	
	Methyl tert-butyl Ether	20	20.8	ug/Kg	104			77	129	
	Methyl Acetate	20	21.6	ug/Kg	108			69	149	
	Methylene Chloride	20	21.1	ug/Kg	106			49	160	
	trans-1,2-Dichloroethene	20	20.9	ug/Kg	104			80	123	
	1,1-Dichloroethane	20	21.2	ug/Kg	106			82	123	
	Cyclohexane	20	20.9	ug/Kg	104			76	122	
	2-Butanone	100	100	ug/Kg	100			69	131	
	Carbon Tetrachloride	20	20.9	ug/Kg	104			76	129	
	cis-1,2-Dichloroethene	20	20.3	ug/Kg	102			82	123	
	Bromochloromethane	20	20.9	ug/Kg	104			62	134	
	Chloroform	20	20.9	ug/Kg	104			82	125	
	1,1,1-Trichloroethane	20	21.0	ug/Kg	105			80	126	
	Methylcyclohexane	20	21.0	ug/Kg	105			77	123	
	Benzene	20	20.8	ug/Kg	104			84	121	
	1,2-Dichloroethane	20	20.5	ug/Kg	103			81	126	
	Trichloroethene	20	21.1	ug/Kg	106			83	122	
	1,2-Dichloropropane	20	20.5	ug/Kg	103			83	122	
	Bromodichloromethane	20	21.1	ug/Kg	106			82	123	
	4-Methyl-2-Pentanone	100	110	ug/Kg	110			70	135	
	Toluene	20	20.9	ug/Kg	104			83	122	
	t-1,3-Dichloropropene	20	20.9	ug/Kg	104			78	124	
	cis-1,3-Dichloropropene	20	20.6	ug/Kg	103			81	122	
	1,1,2-Trichloroethane	20	21.0	ug/Kg	105			82	125	
	2-Hexanone	100	100	ug/Kg	100			66	138	
	Dibromochloromethane	20	20.1	ug/Kg	101			79	125	
	1,2-Dibromoethane	20	20.9	ug/Kg	104			80	125	
	Tetrachloroethene	20	22.5	ug/Kg	113			83	125	
	Chlorobenzene	20	20.8	ug/Kg	104			84	122	
	Ethyl Benzene	20	20.9	ug/Kg	104			82	124	
	m/p-Xylenes	40	41.9	ug/Kg	105			83	124	
	o-Xylene	20	20.7	ug/Kg	104			83	123	
	Styrene	20	20.8	ug/Kg	104			82	124	
	Bromoform	20	21.8	ug/Kg	109			75	127	
	Isopropylbenzene	20	20.7	ug/Kg	104			82	124	
	1,1,2,2-Tetrachloroethane	20	21.6	ug/Kg	108			77	127	
	1,3-Dichlorobenzene	20	20.7	ug/Kg	104			83	122	
	1,4-Dichlorobenzene	20	20.8	ug/Kg	104			84	121	
	1,2-Dichlorobenzene	20	20.2	ug/Kg	101			83	124	
	1,2-Dibromo-3-Chloropropane	20	20.8	ug/Kg	104			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074096.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0815SBS01	1,2,4-Trichlorobenzene	20	18.6	ug/Kg	93			78	127	
	1,2,3-Trichlorobenzene	20	17.5	ug/Kg	88			70	137	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074097.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Qual	Limits Low	Limits High	Limits RPD
VD0815SBSD01	Dichlorodifluoromethane	20	27.5	ug/Kg	138	2	*		64	136	20
	Chloromethane	20	25.6	ug/Kg	128	1			70	130	20
	Vinyl chloride	20	24.8	ug/Kg	124	2			72	129	20
	Bromomethane	20	23.7	ug/Kg	119	6			58	141	20
	Chloroethane	20	25.6	ug/Kg	128	12			69	130	20
	Trichlorofluoromethane	20	33.3	ug/Kg	167	51	*	*	69	134	20
	1,1,2-Trichlorotrifluoroethane	20	19.9	ug/Kg	100	4			81	123	20
	1,1-Dichloroethene	20	21.7	ug/Kg	109	4			79	121	20
	Acetone	100	87.3	ug/Kg	87	5			60	131	20
	Carbon disulfide	20	24.0	ug/Kg	120	1			60	128	20
	Methyl tert-butyl Ether	20	22.8	ug/Kg	114	9			77	129	20
	Methyl Acetate	20	23.0	ug/Kg	115	6			69	149	20
	Methylene Chloride	20	23.7	ug/Kg	119	12			49	160	20
	trans-1,2-Dichloroethene	20	21.7	ug/Kg	109	5			80	123	20
	1,1-Dichloroethane	20	21.9	ug/Kg	110	4			82	123	20
	Cyclohexane	20	21.1	ug/Kg	106	2			76	122	20
	2-Butanone	100	110	ug/Kg	110	10			69	131	20
	Carbon Tetrachloride	20	20.5	ug/Kg	103	1			76	129	20
	cis-1,2-Dichloroethene	20	21.0	ug/Kg	105	3			82	123	20
	Bromochloromethane	20	22.5	ug/Kg	113	8			62	134	20
	Chloroform	20	21.6	ug/Kg	108	4			82	125	20
	1,1,1-Trichloroethane	20	21.0	ug/Kg	105	0			80	126	20
	Methylcyclohexane	20	19.9	ug/Kg	100	5			77	123	20
	Benzene	20	21.0	ug/Kg	105	1			84	121	20
	1,2-Dichloroethane	20	21.7	ug/Kg	109	6			81	126	20
	Trichloroethene	20	20.9	ug/Kg	104	2			83	122	20
	1,2-Dichloropropane	20	21.1	ug/Kg	106	3			83	122	20
	Bromodichloromethane	20	20.8	ug/Kg	104	2			82	123	20
	4-Methyl-2-Pentanone	100	110	ug/Kg	110	0			70	135	20
	Toluene	20	20.9	ug/Kg	104	0			83	122	20
	t-1,3-Dichloropropene	20	21.3	ug/Kg	106	2			78	124	20
	cis-1,3-Dichloropropene	20	21.1	ug/Kg	106	3			81	122	20
	1,1,2-Trichloroethane	20	22.3	ug/Kg	112	6			82	125	20
	2-Hexanone	100	110	ug/Kg	110	10			66	138	20
	Dibromochloromethane	20	21.2	ug/Kg	106	5			79	125	20
	1,2-Dibromoethane	20	21.7	ug/Kg	109	5			80	125	20
	Tetrachloroethene	20	21.1	ug/Kg	106	6			83	125	20
	Chlorobenzene	20	20.5	ug/Kg	103	1			84	122	20
	Ethyl Benzene	20	20.2	ug/Kg	101	3			82	124	20
	m/p-Xylenes	40	41.1	ug/Kg	103	2			83	124	20
	o-Xylene	20	19.7	ug/Kg	99	5			83	123	20
	Styrene	20	20.3	ug/Kg	102	2			82	124	20
	Bromoform	20	21.9	ug/Kg	110	1			75	127	20
	Isopropylbenzene	20	20.4	ug/Kg	102	2			82	124	20
	1,1,2,2-Tetrachloroethane	20	22.9	ug/Kg	115	6			77	127	20
	1,3-Dichlorobenzene	20	20.8	ug/Kg	104	0			83	122	20
	1,4-Dichlorobenzene	20	20.6	ug/Kg	103	1			84	121	20
	1,2-Dichlorobenzene	20	20.1	ug/Kg	101	0			83	124	20
	1,2-Dibromo-3-Chloropropane	20	18.6	ug/Kg	93	11			66	134	20

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074097.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0815SBSD01	1,2,4-Trichlorobenzene	20	18.5	ug/Kg	93	0		78	127	20
	1,2,3-Trichlorobenzene	20	18.1	ug/Kg	91	3		70	137	20

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074104.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0816SBS01	Dichlorodifluoromethane	20	25.8	ug/Kg	129			64	136	
	Chloromethane	20	26.8	ug/Kg	134		*	70	130	
	Vinyl chloride	20	25.6	ug/Kg	128			72	129	
	Bromomethane	20	23.7	ug/Kg	119			58	141	
	Chloroethane	20	25.4	ug/Kg	127			69	130	
	Trichlorofluoromethane	20	21.8	ug/Kg	109			69	134	
	1,1,2-Trichlorotrifluoroethane	20	21.9	ug/Kg	110			81	123	
	1,1-Dichloroethene	20	21.5	ug/Kg	108			79	121	
	Acetone	100	98.5	ug/Kg	99			60	131	
	Carbon disulfide	20	23.1	ug/Kg	116			60	128	
	Methyl tert-butyl Ether	20	21.8	ug/Kg	109			77	129	
	Methyl Acetate	20	24.8	ug/Kg	124			69	149	
	Methylene Chloride	20	28.1	ug/Kg	141			49	160	
	trans-1,2-Dichloroethene	20	22.3	ug/Kg	112			80	123	
	1,1-Dichloroethane	20	22.9	ug/Kg	115			82	123	
	Cyclohexane	20	20.4	ug/Kg	102			76	122	
	2-Butanone	100	110	ug/Kg	110			69	131	
	Carbon Tetrachloride	20	22.0	ug/Kg	110			76	129	
	cis-1,2-Dichloroethene	20	21.0	ug/Kg	105			82	123	
	Bromochloromethane	20	23.3	ug/Kg	117			62	134	
	Chloroform	20	23.3	ug/Kg	117			82	125	
	1,1,1-Trichloroethane	20	22.3	ug/Kg	112			80	126	
	Methylcyclohexane	20	20.1	ug/Kg	101			77	123	
	Benzene	20	22.6	ug/Kg	113			84	121	
	1,2-Dichloroethane	20	22.7	ug/Kg	114			81	126	
	Trichloroethene	20	22.0	ug/Kg	110			83	122	
	1,2-Dichloropropane	20	22.0	ug/Kg	110			83	122	
	Bromodichloromethane	20	22.4	ug/Kg	112			82	123	
	4-Methyl-2-Pentanone	100	120	ug/Kg	120			70	135	
	Toluene	20	21.8	ug/Kg	109			83	122	
	t-1,3-Dichloropropene	20	22.1	ug/Kg	111			78	124	
	cis-1,3-Dichloropropene	20	20.9	ug/Kg	104			81	122	
	1,1,2-Trichloroethane	20	22.9	ug/Kg	115			82	125	
	2-Hexanone	100	110	ug/Kg	110			66	138	
	Dibromochloromethane	20	21.8	ug/Kg	109			79	125	
	1,2-Dibromoethane	20	21.7	ug/Kg	109			80	125	
	Tetrachloroethene	20	20.8	ug/Kg	104			83	125	
	Chlorobenzene	20	21.2	ug/Kg	106			84	122	
	Ethyl Benzene	20	20.8	ug/Kg	104			82	124	
	m/p-Xylenes	40	41.1	ug/Kg	103			83	124	
	o-Xylene	20	20.6	ug/Kg	103			83	123	
	Styrene	20	21.0	ug/Kg	105			82	124	
	Bromoform	20	23.0	ug/Kg	115			75	127	
	Isopropylbenzene	20	20.4	ug/Kg	102			82	124	
	1,1,2,2-Tetrachloroethane	20	22.7	ug/Kg	114			77	127	
	1,3-Dichlorobenzene	20	19.9	ug/Kg	100			83	122	
	1,4-Dichlorobenzene	20	20.5	ug/Kg	103			84	121	
	1,2-Dichlorobenzene	20	20.2	ug/Kg	101			83	124	
	1,2-Dibromo-3-Chloropropane	20	21.3	ug/Kg	106			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VD074104.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VD0816SBS01	1,2,4-Trichlorobenzene	20	17.6	ug/Kg	88			78	127	
	1,2,3-Trichlorobenzene	20	17.6	ug/Kg	88			70	137	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VY010004.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VY0814SBS01	Dichlorodifluoromethane	20	23.4	ug/Kg	117			64	136	
	Chloromethane	20	17.7	ug/Kg	89			70	130	
	Vinyl chloride	20	17.2	ug/Kg	86			72	129	
	Bromomethane	20	18.1	ug/Kg	91			58	141	
	Chloroethane	20	17.3	ug/Kg	86			69	130	
	Trichlorofluoromethane	20	19.1	ug/Kg	96			69	134	
	1,1,2-Trichlorotrifluoroethane	20	19.3	ug/Kg	97			81	123	
	1,1-Dichloroethene	20	18.6	ug/Kg	93			79	121	
	Acetone	100	83.9	ug/Kg	84			60	131	
	Carbon disulfide	20	16.4	ug/Kg	82			60	128	
	Methyl tert-butyl Ether	20	18.5	ug/Kg	93			77	129	
	Methyl Acetate	20	15.0	ug/Kg	75			69	149	
	Methylene Chloride	20	20.1	ug/Kg	101			49	160	
	trans-1,2-Dichloroethene	20	18.2	ug/Kg	91			80	123	
	1,1-Dichloroethane	20	17.9	ug/Kg	90			82	123	
	Cyclohexane	20	16.7	ug/Kg	84			76	122	
	2-Butanone	100	80.7	ug/Kg	81			69	131	
	Carbon Tetrachloride	20	20.9	ug/Kg	104			76	129	
	cis-1,2-Dichloroethene	20	18.9	ug/Kg	95			82	123	
	Bromochloromethane	20	15.7	ug/Kg	79			62	134	
	Chloroform	20	19.5	ug/Kg	98			82	125	
	1,1,1-Trichloroethane	20	19.4	ug/Kg	97			80	126	
	Methylcyclohexane	20	17.9	ug/Kg	90			77	123	
	Benzene	20	18.8	ug/Kg	94			84	121	
	1,2-Dichloroethane	20	19.3	ug/Kg	97			81	126	
	Trichloroethene	20	19.2	ug/Kg	96			83	122	
	1,2-Dichloropropane	20	18.0	ug/Kg	90			83	122	
	Bromodichloromethane	20	19.9	ug/Kg	100			82	123	
	4-Methyl-2-Pentanone	100	83.1	ug/Kg	83			70	135	
	Toluene	20	19.7	ug/Kg	99			83	122	
	t-1,3-Dichloropropene	20	19.1	ug/Kg	96			78	124	
	cis-1,3-Dichloropropene	20	19.3	ug/Kg	97			81	122	
	1,1,2-Trichloroethane	20	19.5	ug/Kg	98			82	125	
	2-Hexanone	100	81.7	ug/Kg	82			66	138	
	Dibromochloromethane	20	20.4	ug/Kg	102			79	125	
	1,2-Dibromoethane	20	19.5	ug/Kg	98			80	125	
	Tetrachloroethene	20	20.4	ug/Kg	102			83	125	
	Chlorobenzene	20	19.8	ug/Kg	99			84	122	
	Ethyl Benzene	20	19.7	ug/Kg	99			82	124	
	m/p-Xylenes	40	40.7	ug/Kg	102			83	124	
	o-Xylene	20	19.4	ug/Kg	97			83	123	
	Styrene	20	20.1	ug/Kg	101			82	124	
	Bromoform	20	20.3	ug/Kg	102			75	127	
	Isopropylbenzene	20	19.6	ug/Kg	98			82	124	
	1,1,2,2-Tetrachloroethane	20	18.3	ug/Kg	92			77	127	
	1,3-Dichlorobenzene	20	21.0	ug/Kg	105			83	122	
	1,4-Dichlorobenzene	20	20.1	ug/Kg	101			84	121	
	1,2-Dichlorobenzene	20	21.2	ug/Kg	106			83	124	
	1,2-Dibromo-3-Chloropropane	20	17.6	ug/Kg	88			66	134	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8260D **Datafile :** VY010004.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VY0814SBS01	1,2,4-Trichlorobenzene	20	20.4	ug/Kg	102			78	127	
	1,2,3-Trichlorobenzene	20	20.4	ug/Kg	102			70	137	

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0815SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074095.D Lab Sample ID: VD0815SBL01

Date Analyzed: 08/15/2022 Time Analyzed: 17:40

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0815SBS01	VD0815SBS01	VD074096.D	08/15/2022
VD0815SBSD01	VD0815SBSD01	VD074097.D	08/15/2022
SB19	N4189-03	VD074098.D	08/15/2022

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0816SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074103.D Lab Sample ID: VD0816SBL01

Date Analyzed: 08/16/2022 Time Analyzed: 15:57

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0816SBS01	VD0816SBS01	VD074104.D	08/16/2022
SB16	N4189-09	VD074109.D	08/16/2022
SB17	N4189-11	VD074110.D	08/16/2022
SB12RE	N4189-15RE	VD074111.D	08/16/2022
SB14RE	N4189-17RE	VD074112.D	08/16/2022

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VY0814SBL01

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010003.D Lab Sample ID: VY0814SBL01

Date Analyzed: 08/14/2022 Time Analyzed: 17:24

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VY0814SBS01	VY0814SBS01	VY010004.D	08/14/2022
SB18	N4189-01	VY010006.D	08/14/2022
SB20	N4189-05	VY010008.D	08/14/2022
SB15	N4189-07	VY010009.D	08/14/2022
SB13	N4189-13	VY010012.D	08/14/2022
SB12	N4189-15	VY010013.D	08/14/2022
SB14	N4189-17	VY010014.D	08/14/2022
SB11	N4189-19	VY010015.D	08/14/2022

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074086.D BFB Injection Date: 08/15/2022

Instrument ID: MSVOA_D BFB Injection Time: 08:42

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.1
75	30.0 - 60.0% of mass 95	57.3
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	1.2 (1.5) 1
174	50.0 - 100.0% of mass 95	83.4
175	5.0 - 9.0% of mass 174	6.2 (7.5) 1
176	95.0 - 101.0% of mass 174	80.6 (96.6) 1
177	5.0 - 9.0% of mass 176	5.6 (7) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VD074087.D	08/15/2022	09:25
VSTDICC010	VSTDICC010	VD074088.D	08/15/2022	10:51
VSTDICC020	VSTDICC020	VD074089.D	08/15/2022	11:19
VSTDICCC050	VSTDICCC050	VD074090.D	08/15/2022	12:35
VSTDICC100	VSTDICC100	VD074091.D	08/15/2022	13:04
VSTDICC150	VSTDICC150	VD074092.D	08/15/2022	13:32
VD0815SBL01	VD0815SBL01	VD074095.D	08/15/2022	17:40
VD0815SBS01	VD0815SBS01	VD074096.D	08/15/2022	18:08
VD0815SBSD01	VD0815SBSD01	VD074097.D	08/15/2022	18:37
SB19	N4189-03	VD074098.D	08/15/2022	19:06

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074101.D BFB Injection Date: 08/16/2022

Instrument ID: MSVOA_D BFB Injection Time: 13:41

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.5
75	30.0 - 60.0% of mass 95	54.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	1.4 (1.7) 1
174	50.0 - 100.0% of mass 95	80.9
175	5.0 - 9.0% of mass 174	6.6 (8.2) 1
176	95.0 - 101.0% of mass 174	80.1 (98.9) 1
177	5.0 - 9.0% of mass 176	5.3 (6.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VD074102.D	08/16/2022	14:52
VD0816SBL01	VD0816SBL01	VD074103.D	08/16/2022	15:57
VD0816SBS01	VD0816SBS01	VD074104.D	08/16/2022	16:25
SB16	N4189-09	VD074109.D	08/16/2022	18:50
SB17	N4189-11	VD074110.D	08/16/2022	19:18
SB12RE	N4189-15RE	VD074111.D	08/16/2022	19:47
SB14RE	N4189-17RE	VD074112.D	08/16/2022	20:16

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY009981.D BFB Injection Date: 08/12/2022

Instrument ID: MSVOA_Y BFB Injection Time: 09:06

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	52.2
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	1.3 (1.5) 1
174	50.0 - 100.0% of mass 95	86.8
175	5.0 - 9.0% of mass 174	6.5 (7.5) 1
176	95.0 - 101.0% of mass 174	82.5 (95) 1
177	5.0 - 9.0% of mass 176	6.2 (7.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VY009983.D	08/12/2022	13:25
VSTDICC010	VSTDICC010	VY009984.D	08/12/2022	14:11
VSTDICC020	VSTDICC020	VY009985.D	08/12/2022	14:34
VSTDICCC050	VSTDICCC050	VY009986.D	08/12/2022	14:57
VSTDICC075	VSTDICC075	VY009987.D	08/12/2022	15:19
VSTDICC100	VSTDICC100	VY009988.D	08/12/2022	15:42

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010001.D BFB Injection Date: 08/14/2022

Instrument ID: MSVOA_Y BFB Injection Time: 15:48

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.6
75	30.0 - 60.0% of mass 95	46.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1.1 (1.5) 1
174	50.0 - 100.0% of mass 95	76.6
175	5.0 - 9.0% of mass 174	6.2 (8) 1
176	95.0 - 101.0% of mass 174	73.1 (95.4) 1
177	5.0 - 9.0% of mass 176	4.8 (6.5) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VY010002.D	08/14/2022	16:28
VY0814SBL01	VY0814SBL01	VY010003.D	08/14/2022	17:24
VY0814SBS01	VY0814SBS01	VY010004.D	08/14/2022	17:52
SB18	N4189-01	VY010006.D	08/14/2022	18:40
SB20	N4189-05	VY010008.D	08/14/2022	19:27
SB15	N4189-07	VY010009.D	08/14/2022	19:50
SB13	N4189-13	VY010012.D	08/14/2022	21:00
SB12	N4189-15	VY010013.D	08/14/2022	21:24
SB14	N4189-17	VY010014.D	08/14/2022	21:47
SB11	N4189-19	VY010015.D	08/14/2022	22:11

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074090.D Date Analyzed: 08/15/2022

Instrument ID: MSVOA_D Time Analyzed: 12:35

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	164497	7.97	268762	8.86	250251	11.63
UPPER LIMIT	328994	8.467	537524	9.355	500502	12.132
LOWER LIMIT	82248.5	7.467	134381	8.355	125126	11.132
EPA SAMPLE NO.						
SB19	113200	7.97	202299	8.86	192463	11.63
VD0815SBL01	128903	7.97	224273	8.86	210647	11.63
VD0815SBS01	154610	7.97	253223	8.86	233972	11.63
VD0815SBSD01	150142	7.97	247874	8.86	235022	11.63

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074090.D Date Analyzed: 08/15/2022

Instrument ID: MSVOA_D Time Analyzed: 12:35

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #	RT #				
12 HOUR STD	166350	13.561				
UPPER LIMIT	332700	14.061				
LOWER LIMIT	83175	13.061				
EPA SAMPLE NO.						
SB19	88944	13.56				
VD0815SBL01	93718	13.56				
VD0815SBS01	121467	13.56				
VD0815SBSD01	119200	13.56				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074102.D Date Analyzed: 08/16/2022

Instrument ID: MSVOA_D Time Analyzed: 14:52

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #		RT #	IS2 AREA #		RT #	IS3 AREA #		RT #
12 HOUR STD	147564		7.97	231892		8.86	221085		11.63
UPPER LIMIT	295128		8.467	463784		9.356	442170		12.132
LOWER LIMIT	73782		7.467	115946		8.356	110543		11.132
EPA SAMPLE NO.									
SB16	38015	*	7.97	67647	*	8.86	70315	*	11.63
SB17	7529	*	7.97	12675	*	8.86	14392	*	11.64
SB12RE	27171	*	7.97	50001	*	8.86	56750	*	11.63
SB14RE	55973	*	7.97	103556	*	8.86	108357	*	11.63
VD0816SBL01	118624		7.97	209662		8.86	193982		11.63
VD0816SBS01	127614		7.97	209749		8.86	199342		11.63

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VD074102.D Date Analyzed: 08/16/2022

Instrument ID: MSVOA_D Time Analyzed: 14:52

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #		RT #				
12 HOUR STD	119567		13.561				
UPPER LIMIT	239134		14.061				
LOWER LIMIT	59783.5		13.061				
EPA SAMPLE NO.							
SB16	29609	*	13.56				
SB17	6377	*	13.56				
SB12RE	26843	*	13.56				
SB14RE	44657	*	13.56				
VD0816SBL01	84341		13.56				
VD0816SBS01	105791		13.56				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010002.D Date Analyzed: 08/14/2022

Instrument ID: MSVOA_Y Time Analyzed: 16:28

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #		RT #	IS2 AREA #		RT #	IS3 AREA #		RT #
12 HOUR STD	104500		7.78	169460		8.69	152999		11.49
UPPER LIMIT	209000		8.283	338920		9.185	305998		11.989
LOWER LIMIT	52250		7.283	84730		8.185	76499.5		10.989
EPA SAMPLE NO.									
SB18	53318		7.78	103133		8.69	106172		11.49
SB20	11887	*	7.78	20548	*	8.69	17711	*	11.49
SB15	75073		7.78	146364		8.69	149193		11.49
SB13	76264		7.78	147909		8.69	147964		11.49
SB12	3402	*	7.79	6093	*	8.69	5912	*	11.49
SB14	38244	*	7.79	72617	*	8.69	75412	*	11.49
SB11	68224		7.78	130182		8.69	131022		11.49
VY0814SBL01	87933		7.78	159417		8.69	143173		11.49
VY0814SBS01	103699		7.78	172434		8.69	155522		11.49

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: VY010002.D Date Analyzed: 08/14/2022

Instrument ID: MSVOA_Y Time Analyzed: 16:28

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #		RT #				
12 HOUR STD	75236		13.428				
UPPER LIMIT	150472		13.928				
LOWER LIMIT	37618		12.928				
EPA SAMPLE NO.							
SB18	47194		13.43				
SB20	6500	*	13.42				
SB15	66933		13.42				
SB13	66057		13.42				
SB12	2197	*	13.42				
SB14	33004	*	13.42				
SB11	58835		13.42				
VY0814SBL01	64130		13.42				
VY0814SBS01	77375		13.42				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	59.9		50 - 163	120%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		54 - 147	94%	SPK: 50
2037-26-5	Toluene-d8	38.9		78 - 125	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		50 - 146	89%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	129000	7.967			
540-36-3	1,4-Difluorobenzene	224000	8.856			
3114-55-4	Chlorobenzene-d5	211000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	93700	13.561			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBL01	SDG No.:	N4189
Lab Sample ID:	VD0815SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074095.D	1		08/15/22 17:40	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	63.0		50 - 163	126%	SPK: 50
1868-53-7	Dibromofluoromethane	50.7		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	40.1		78 - 125	80%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		50 - 146	91%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	119000	7.973			
540-36-3	1,4-Difluorobenzene	210000	8.855			
3114-55-4	Chlorobenzene-d5	194000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	84300	13.555			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBL01	SDG No.:	N4189
Lab Sample ID:	VD0816SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074103.D	1		08/16/22 15:57	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.00	U	0.86	5.00	ug/Kg
74-87-3	Chloromethane	5.00	U	1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	5.00	U	0.91	5.00	ug/Kg
74-83-9	Bromomethane	5.00	U	1.20	5.00	ug/Kg
75-00-3	Chloroethane	5.00	U	0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	5.00	U	0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	U	0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	5.00	U	0.86	5.00	ug/Kg
67-64-1	Acetone	25.0	U	12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	5.00	U	0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.00	U	0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	5.00	U	1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	10.0	U	6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	5.00	U	0.70	5.00	ug/Kg
110-82-7	Cyclohexane	5.00	U	0.84	5.00	ug/Kg
78-93-3	2-Butanone	25.0	U	7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	5.00	U	0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.00	U	0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	5.00	U	0.81	5.00	ug/Kg
67-66-3	Chloroform	5.00	U	0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	5.00	U	0.80	5.00	ug/Kg
71-43-2	Benzene	5.00	U	0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	5.00	U	0.84	5.00	ug/Kg
79-01-6	Trichloroethene	5.00	U	0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	5.00	U	0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	5.00	U	0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	25.0	U	4.60	25.0	ug/Kg
108-88-3	Toluene	5.00	U	0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.00	U	0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.00	U	0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.00	U	0.86	5.00	ug/Kg
591-78-6	2-Hexanone	25.0	U	4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	5.00	U	0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	5.00	U	0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	5.00	U	0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	5.00	U	0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	5.00	U	0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	10.0	U	1.50	10.0	ug/Kg
95-47-6	o-Xylene	5.00	U	0.79	5.00	ug/Kg
100-42-5	Styrene	5.00	U	0.79	5.00	ug/Kg
75-25-2	Bromoform	5.00	U	0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	5.00	U	0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.00	U	1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.00	U	0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.00	U	0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.00	U	0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.00	U	1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.00	U	0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.00	U	1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.2		50 - 163	114%	SPK: 50
1868-53-7	Dibromofluoromethane	55.2		54 - 147	110%	SPK: 50
2037-26-5	Toluene-d8	52.0		78 - 125	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.0		50 - 146	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	87900	7.783			
540-36-3	1,4-Difluorobenzene	159000	8.685			
3114-55-4	Chlorobenzene-d5	143000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	64100	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBL01	SDG No.:	N4189
Lab Sample ID:	VY0814SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010003.D	1		08/14/22 17:24	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	28.1		0.86	5.00	ug/Kg
74-87-3	Chloromethane	25.4		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	25.4		0.91	5.00	ug/Kg
74-83-9	Bromomethane	22.4		1.20	5.00	ug/Kg
75-00-3	Chloroethane	22.7		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	19.7		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	20.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.0		0.86	5.00	ug/Kg
67-64-1	Acetone	82.5		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	23.8		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	20.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	21.6		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	21.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	20.9		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	21.2		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	20.9		0.84	5.00	ug/Kg
78-93-3	2-Butanone	100		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.9		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	20.3		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	20.9		0.81	5.00	ug/Kg
67-66-3	Chloroform	20.9		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	21.0		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	21.0		0.80	5.00	ug/Kg
71-43-2	Benzene	20.8		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	20.5		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	21.1		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	20.5		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	21.1		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		4.60	25.0	ug/Kg
108-88-3	Toluene	20.9		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.9		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.6		0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	21.0		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	100		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	20.1		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	20.9		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	22.5		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	20.8		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.9		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.9		1.50	10.0	ug/Kg
95-47-6	o-Xylene	20.7		0.79	5.00	ug/Kg
100-42-5	Styrene	20.8		0.79	5.00	ug/Kg
75-25-2	Bromoform	21.8		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.7		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	21.6		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.7		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.8		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	20.8		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	18.6		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	17.5		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	52.2		50 - 163	104%	SPK: 50
1868-53-7	Dibromofluoromethane	44.6		54 - 147	89%	SPK: 50
2037-26-5	Toluene-d8	41.3		78 - 125	83%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.8		50 - 146	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	155000	7.973			
540-36-3	1,4-Difluorobenzene	253000	8.855			
3114-55-4	Chlorobenzene-d5	234000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	121000	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBS01	SDG No.:	N4189
Lab Sample ID:	VD0815SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074096.D	1		08/15/22 18:08	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	25.8		0.86	5.00	ug/Kg
74-87-3	Chloromethane	26.8		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	25.6		0.91	5.00	ug/Kg
74-83-9	Bromomethane	23.7		1.20	5.00	ug/Kg
75-00-3	Chloroethane	25.4		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	21.8		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	21.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.5		0.86	5.00	ug/Kg
67-64-1	Acetone	98.5		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	23.1		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	21.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	24.8		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	28.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	22.3		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	22.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	20.4		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	22.0		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	21.0		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	23.3		0.81	5.00	ug/Kg
67-66-3	Chloroform	23.3		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	22.3		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	20.1		0.80	5.00	ug/Kg
71-43-2	Benzene	22.6		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	22.7		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	22.0		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	22.0		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	22.4		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	120		4.60	25.0	ug/Kg
108-88-3	Toluene	21.8		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	22.1		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.9		0.71	5.00	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	22.9		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	110		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	21.8		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	21.7		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	20.8		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	21.2		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.8		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.1		1.50	10.0	ug/Kg
95-47-6	o-Xylene	20.6		0.79	5.00	ug/Kg
100-42-5	Styrene	21.0		0.79	5.00	ug/Kg
75-25-2	Bromoform	23.0		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.4		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	22.7		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	19.9		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.5		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	21.3		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	17.6		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	17.6		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.6		50 - 163	113%	SPK: 50
1868-53-7	Dibromofluoromethane	49.1		54 - 147	98%	SPK: 50
2037-26-5	Toluene-d8	42.1		78 - 125	84%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.2		50 - 146	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	128000	7.967			
540-36-3	1,4-Difluorobenzene	210000	8.856			
3114-55-4	Chlorobenzene-d5	199000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	106000	13.555			

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0816SBS01	SDG No.:	N4189
Lab Sample ID:	VD0816SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074104.D	1		08/16/22 16:25	VD081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	23.4		0.86	5.00	ug/Kg
74-87-3	Chloromethane	17.7		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	17.2		0.91	5.00	ug/Kg
74-83-9	Bromomethane	18.1		1.20	5.00	ug/Kg
75-00-3	Chloroethane	17.3		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	19.1		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	19.3		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	18.6		0.86	5.00	ug/Kg
67-64-1	Acetone	83.9		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	16.4		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	18.5		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	15.0		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	20.1		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	18.2		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	17.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	16.7		0.84	5.00	ug/Kg
78-93-3	2-Butanone	80.7		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.9		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	18.9		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	15.7		0.81	5.00	ug/Kg
67-66-3	Chloroform	19.5		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	19.4		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	17.9		0.80	5.00	ug/Kg
71-43-2	Benzene	18.8		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	19.3		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	19.2		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	18.0		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	19.9		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	83.1		4.60	25.0	ug/Kg
108-88-3	Toluene	19.7		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	19.1		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	19.3		0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	19.5		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	81.7		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	20.4		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	19.5		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	20.4		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	19.8		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	19.7		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	40.7		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.4		0.79	5.00	ug/Kg
100-42-5	Styrene	20.1		0.79	5.00	ug/Kg
75-25-2	Bromoform	20.3		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	19.6		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	18.3		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	21.0		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.1		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	21.2		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	17.6		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	20.4		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	20.4		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.2		50 - 163	100%	SPK: 50
1868-53-7	Dibromofluoromethane	52.7		54 - 147	105%	SPK: 50
2037-26-5	Toluene-d8	52.2		78 - 125	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.9		50 - 146	104%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	104000	7.783			
540-36-3	1,4-Difluorobenzene	172000	8.685			
3114-55-4	Chlorobenzene-d5	156000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	77400	13.422			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VY0814SBS01	SDG No.:	N4189
Lab Sample ID:	VY0814SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY010004.D	1		08/14/22 17:52	VY081422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	27.5		0.86	5.00	ug/Kg
74-87-3	Chloromethane	25.6		1.10	5.00	ug/Kg
75-01-4	Vinyl Chloride	24.8		0.91	5.00	ug/Kg
74-83-9	Bromomethane	23.7		1.20	5.00	ug/Kg
75-00-3	Chloroethane	25.6		0.89	5.00	ug/Kg
75-69-4	Trichlorofluoromethane	33.3		0.97	5.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	19.9		0.72	5.00	ug/Kg
75-35-4	1,1-Dichloroethene	21.7		0.86	5.00	ug/Kg
67-64-1	Acetone	87.3		12.2	25.0	ug/Kg
75-15-0	Carbon Disulfide	24.0		0.75	5.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	22.8		0.93	5.00	ug/Kg
79-20-9	Methyl Acetate	23.0		1.30	5.00	ug/Kg
75-09-2	Methylene Chloride	23.7		6.00	10.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	21.7		0.68	5.00	ug/Kg
75-34-3	1,1-Dichloroethane	21.9		0.70	5.00	ug/Kg
110-82-7	Cyclohexane	21.1		0.84	5.00	ug/Kg
78-93-3	2-Butanone	110		7.30	25.0	ug/Kg
56-23-5	Carbon Tetrachloride	20.5		0.79	5.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	21.0		0.68	5.00	ug/Kg
74-97-5	Bromochloromethane	22.5		0.81	5.00	ug/Kg
67-66-3	Chloroform	21.6		0.67	5.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	21.0		0.75	5.00	ug/Kg
108-87-2	Methylcyclohexane	19.9		0.80	5.00	ug/Kg
71-43-2	Benzene	21.0		0.66	5.00	ug/Kg
107-06-2	1,2-Dichloroethane	21.7		0.84	5.00	ug/Kg
79-01-6	Trichloroethene	20.9		0.73	5.00	ug/Kg
78-87-5	1,2-Dichloropropane	21.1		0.65	5.00	ug/Kg
75-27-4	Bromodichloromethane	20.8		0.70	5.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		4.60	25.0	ug/Kg
108-88-3	Toluene	20.9		0.63	5.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	21.3		0.74	5.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	21.1		0.71	5.00	ug/Kg

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	22.3		0.86	5.00	ug/Kg
591-78-6	2-Hexanone	110		4.70	25.0	ug/Kg
124-48-1	Dibromochloromethane	21.2		0.75	5.00	ug/Kg
106-93-4	1,2-Dibromoethane	21.7		0.75	5.00	ug/Kg
127-18-4	Tetrachloroethene	21.1		0.76	5.00	ug/Kg
108-90-7	Chlorobenzene	20.5		0.65	5.00	ug/Kg
100-41-4	Ethyl Benzene	20.2		0.70	5.00	ug/Kg
179601-23-1	m/p-Xylenes	41.1		1.50	10.0	ug/Kg
95-47-6	o-Xylene	19.7		0.79	5.00	ug/Kg
100-42-5	Styrene	20.3		0.79	5.00	ug/Kg
75-25-2	Bromoform	21.9		0.81	5.00	ug/Kg
98-82-8	Isopropylbenzene	20.4		0.72	5.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	22.9		1.10	5.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.8		0.67	5.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.6		0.63	5.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.1		0.64	5.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	18.6		1.20	5.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	18.5		0.94	5.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	18.1		1.00	5.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.1		50 - 163	108%	SPK: 50
1868-53-7	Dibromofluoromethane	45.5		54 - 147	91%	SPK: 50
2037-26-5	Toluene-d8	41.0		78 - 125	82%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.9		50 - 146	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	150000	7.973			
540-36-3	1,4-Difluorobenzene	248000	8.855			
3114-55-4	Chlorobenzene-d5	235000	11.632			
3855-82-1	1,4-Dichlorobenzene-d4	119000	13.555			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VD0815SBSD01	SDG No.:	N4189
Lab Sample ID:	VD0815SBSD01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD074097.D	1		08/15/22 18:37	VD081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Calibration Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074087.D RRF010 = VD074088.D RRF020 = VD074089.D
RRF050 = VD074090.D RRF100 = VD074091.D RRF150 = VD074092.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.715	0.594	0.549	0.356	0.323	0.303	0.473	35.9
Chloromethane	0.710	0.715	0.664	0.454	0.419	0.381	0.557	27.8
Vinyl Chloride	0.855	0.872	0.875	0.657	0.603	0.571	0.739	19.5
Bromomethane	0.687	0.657	0.715	0.480	0.505	0.495	0.590	18.3
Chloroethane	0.674	0.799	0.771	0.555	0.491	0.467	0.626	22.8
Trichlorofluoromethane	1.561	1.406	0.990	0.800	0.734	0.706	1.033	35.4
1,1,2-Trichlorotrifluoroethane	0.875	0.555	0.596	0.482	0.434	0.418	0.560	30.1
1,1-Dichloroethene	0.675	0.449	0.487	0.391	0.373	0.366	0.457	25.6
Acetone	0.155	0.095	0.089	0.096	0.078	0.076	0.098	29.5
Carbon Disulfide	1.384	1.377	1.365	0.922	0.890	0.861	1.133	23.5
Methyl tert-butyl Ether	1.030	0.970	1.041	1.014	1.017	0.987	1.010	2.6
Methyl Acetate	0.379	0.233	0.233	0.203	0.194	0.188	0.238	30
Methylene Chloride	1.248	0.938	0.796	0.528	0.461	0.433	0.734	43.8
trans-1,2-Dichloroethene	0.553	0.551	0.538	0.469	0.454	0.441	0.501	10.4
1,1-Dichloroethane	0.969	0.936	0.936	0.831	0.792	0.754	0.870	10.2
Cyclohexane	0.962	0.778	0.801	0.635	0.601	0.578	0.726	20.4
2-Butanone	0.160	0.128	0.130	0.121	0.117	0.110	0.128	13.7
Carbon Tetrachloride	0.505	0.521	0.543	0.486	0.482	0.481	0.503	5
cis-1,2-Dichloroethene	0.684	0.611	0.612	0.555	0.550	0.530	0.591	9.6
Bromochloromethane	0.375	0.335	0.355	0.309	0.297	0.278	0.325	11.3
Chloroform	1.125	1.083	1.094	0.978	0.931	0.888	1.017	9.6
1,1,1-Trichloroethane	1.018	1.057	1.028	0.932	0.876	0.839	0.959	9.3
Methylcyclohexane	0.496	0.482	0.512	0.469	0.462	0.462	0.480	4.2
Benzene	1.343	1.270	1.302	1.146	1.181	1.146	1.231	6.9
1,2-Dichloroethane	0.405	0.382	0.404	0.362	0.349	0.331	0.372	8.1
Trichloroethene	0.408	0.373	0.378	0.336	0.336	0.333	0.361	8.5
1,2-Dichloropropane	0.313	0.309	0.319	0.285	0.285	0.278	0.298	5.9
Bromodichloromethane	0.515	0.499	0.517	0.466	0.468	0.450	0.486	5.8
4-Methyl-2-Pentanone	0.157	0.155	0.165	0.161	0.172	0.165	0.162	3.8
Toluene	0.780	0.782	0.843	0.783	0.833	0.810	0.805	3.5
t-1,3-Dichloropropene	0.391	0.394	0.439	0.411	0.429	0.422	0.414	4.6
cis-1,3-Dichloropropene	0.483	0.458	0.501	0.465	0.488	0.479	0.479	3.3
1,1,2-Trichloroethane	0.243	0.260	0.264	0.245	0.254	0.243	0.252	3.6

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Calibration Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD074087.D RRF010 = VD074088.D RRF020 = VD074089.D
RRF050 = VD074090.D RRF100 = VD074091.D RRF150 = VD074092.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.101	0.104	0.112	0.115	0.120	0.115	0.111	6.6
Dibromochloromethane	0.348	0.345	0.345	0.329	0.343	0.331	0.340	2.4
1,2-Dibromoethane	0.264	0.232	0.248	0.235	0.250	0.237	0.244	5
Tetrachloroethene	0.287	0.356	0.349	0.310	0.299	0.297	0.316	9.2
Chlorobenzene	1.020	1.010	1.019	0.942	0.945	0.933	0.978	4.3
Ethyl Benzene	1.628	1.633	1.707	1.676	1.712	1.691	1.675	2.2
m/p-Xylenes	0.632	0.643	0.706	0.679	0.691	0.683	0.672	4.3
o-Xylene	0.547	0.564	0.644	0.631	0.644	0.646	0.613	7.4
Styrene	0.977	1.003	1.084	1.085	1.137	1.123	1.068	6
Bromoform	0.158	0.206	0.208	0.209	0.217	0.211	0.201	10.8
Isopropylbenzene	3.122	3.053	3.332	2.593	3.350	3.407	3.143	9.6
1,1,2,2-Tetrachloroethane	0.666	0.599	0.611	0.443	0.570	0.560	0.575	13
1,3-Dichlorobenzene	1.809	1.613	1.744	1.533	1.625	1.622	1.658	6.1
1,4-Dichlorobenzene	1.836	1.674	1.734	1.551	1.595	1.574	1.661	6.6
1,2-Dichlorobenzene	1.473	1.417	1.483	1.359	1.746	1.405	1.481	9.3
1,2-Dibromo-3-Chloropropane	0.103	0.109	0.106	0.082	0.105	0.090	0.099	10.5
1,2,4-Trichlorobenzene	0.850	0.835	0.873	0.939	1.314	0.889	0.950	19.1
1,2,3-Trichlorobenzene	0.810	0.711	0.762	0.823	1.150	0.785	0.840	18.7
1,2-Dichloroethane-d4	0.630	0.524	0.512	0.392	0.352	0.329	0.457	25.8
Dibromofluoromethane	0.385	0.341	0.338	0.301	0.277	0.275	0.320	13.4
Toluene-d8	1.164	1.102	1.121	0.830	0.805	0.799	0.970	18.1
4-Bromofluorobenzene	0.418	0.398	0.403	0.403	0.392	0.390	0.401	2.5

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Calibration Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF005 = VY009983.D RRF010 = VY009984.D RRF020 = VY009985.D
RRF050 = VY009986.D RRF075 = VY009987.D RRF100 = VY009988.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.533	0.455	0.518	0.414	0.369	0.403	0.449	14.7
Chloromethane	0.332	0.317	0.343	0.326	0.331	0.329	0.330	2.5
Vinyl Chloride	0.336	0.352	0.356	0.342	0.349	0.349	0.347	2.2
Bromomethane	0.368	0.320	0.256	0.242	0.239	0.236	0.277	19.7
Chloroethane	0.274	0.260	0.218	0.211	0.206	0.208	0.230	12.9
Trichlorofluoromethane	0.991	0.903	0.843	0.813	0.803	0.810	0.861	8.6
1,1,2-Trichlorotrifluoroethane	0.592	0.581	0.541	0.536	0.531	0.537	0.553	4.7
1,1-Dichloroethene	0.566	0.560	0.531	0.522	0.520	0.523	0.537	3.9
Acetone	0.152	0.127	0.108	0.128	0.113	0.102	0.122	14.9
Carbon Disulfide	1.787	1.909	1.752	1.700	1.674	1.663	1.747	5.3
Methyl tert-butyl Ether	1.293	1.259	1.281	1.356	1.346	1.336	1.312	3
Methyl Acetate	0.561	0.411	0.329	0.345	0.333	0.322	0.384	24.2
Methylene Chloride	1.400	0.821	0.775	0.655	0.603	0.598	0.809	37.6
trans-1,2-Dichloroethene	0.620	0.623	0.583	0.588	0.589	0.577	0.597	3.3
1,1-Dichloroethane	1.073	1.017	0.921	0.940	0.939	0.903	0.966	6.8
Cyclohexane	1.061	0.935	0.867	0.856	0.875	0.852	0.908	8.9
2-Butanone	0.235	0.200	0.171	0.186	0.180	0.162	0.189	13.7
Carbon Tetrachloride	0.411	0.443	0.477	0.467	0.450	0.481	0.455	5.7
cis-1,2-Dichloroethene	0.652	0.646	0.637	0.644	0.642	0.625	0.641	1.5
Bromochloromethane	0.427	0.418	0.350	0.386	0.385	0.349	0.386	8.5
Chloroform	1.027	1.051	0.986	0.990	0.968	0.970	0.999	3.3
1,1,1-Trichloroethane	0.851	0.842	0.851	0.851	0.837	0.858	0.849	0.9
Methylcyclohexane	0.489	0.538	0.544	0.573	0.566	0.581	0.549	6.1
Benzene	1.366	1.441	1.393	1.396	1.344	1.335	1.379	2.8
1,2-Dichloroethane	0.351	0.367	0.354	0.367	0.349	0.355	0.357	2.2
Trichloroethene	0.368	0.371	0.370	0.385	0.367	0.380	0.373	2
1,2-Dichloropropane	0.337	0.351	0.327	0.331	0.325	0.315	0.331	3.7
Bromodichloromethane	0.418	0.447	0.442	0.459	0.442	0.449	0.443	3
4-Methyl-2-Pentanone	0.222	0.245	0.221	0.242	0.234	0.226	0.231	4.5
Toluene	0.753	0.845	0.839	0.872	0.829	0.846	0.830	4.9
t-1,3-Dichloropropene	0.424	0.441	0.447	0.478	0.466	0.474	0.455	4.6
cis-1,3-Dichloropropene	0.476	0.521	0.525	0.554	0.537	0.544	0.526	5.1
1,1,2-Trichloroethane	0.269	0.297	0.292	0.293	0.277	0.280	0.285	3.8

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Calibration Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF005 = VY009983.D RRF010 = VY009984.D RRF020 = VY009985.D
RRF050 = VY009986.D RRF075 = VY009987.D RRF100 = VY009988.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF075	RRF100	$\overline{RRF}$	% RSD
2-Hexanone	0.144	0.162	0.152	0.173	0.167	0.161	0.160	6.6
Dibromochloromethane	0.292	0.316	0.334	0.347	0.329	0.334	0.325	5.9
1,2-Dibromoethane	0.261	0.269	0.276	0.284	0.272	0.275	0.273	2.8
Tetrachloroethene	0.357	0.331	0.380	0.378	0.371	0.375	0.365	5.1
Chlorobenzene	1.009	1.035	1.014	1.025	1.001	1.006	1.015	1.2
Ethyl Benzene	1.557	1.677	1.707	1.780	1.756	1.761	1.706	4.8
m/p-Xylenes	0.580	0.661	0.682	0.694	0.675	0.671	0.661	6.2
o-Xylene	0.632	0.589	0.615	0.647	0.638	0.637	0.626	3.4
Styrene	1.011	1.027	1.064	1.119	1.099	1.084	1.067	3.9
Bromoform	0.242	0.223	0.221	0.233	0.225	0.226	0.228	3.4
Isopropylbenzene	3.068	3.223	3.324	3.490	3.436	3.593	3.356	5.7
1,1,2,2-Tetrachloroethane	0.834	0.808	0.771	0.772	0.728	0.734	0.775	5.3
1,3-Dichlorobenzene	1.390	1.724	1.675	1.633	1.567	1.612	1.600	7.2
1,4-Dichlorobenzene	1.711	1.676	1.674	1.657	1.609	1.653	1.664	2
1,2-Dichlorobenzene	1.276	1.409	1.503	1.516	1.443	1.489	1.439	6.2
1,2-Dibromo-3-Chloropropane	0.130	0.127	0.119	0.126	0.121	0.123	0.124	3.3
1,2,4-Trichlorobenzene	0.630	0.823	0.793	0.883	0.875	0.909	0.819	12.4
1,2,3-Trichlorobenzene	0.566	0.744	0.703	0.790	0.785	0.806	0.732	12.2
1,2-Dichloroethane-d4	0.546	0.516	0.505	0.504	0.485	0.487	0.507	4.4
Dibromofluoromethane	0.303	0.297	0.309	0.321	0.301	0.305	0.306	2.8
Toluene-d8	1.094	1.172	1.199	1.233	1.155	1.182	1.173	4
4-Bromofluorobenzene	0.445	0.441	0.417	0.442	0.416	0.417	0.430	3.3

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date/Time: 08/16/2022 14:52

Lab File ID: VD074102.D Init. Calib. Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.473	0.349		-26.22	20
Chloromethane	0.557	0.449	0.1	-19.39	20
Vinyl Chloride	0.739	0.631		-14.61	20
Bromomethane	0.590	0.475		-19.49	20
Chloroethane	0.626	0.548		-12.46	20
Trichlorofluoromethane	1.033	1.336		29.33	20
1,1,2-Trichlorotrifluoroethane	0.560	0.490		-12.5	20
1,1-Dichloroethene	0.457	0.383		-16.19	20
Acetone	0.098	0.090		-8.16	20
Carbon Disulfide	1.133	0.816		-27.98	20
Methyl tert-butyl Ether	1.010	1.064		5.35	20
Methyl Acetate	0.238	0.215		-9.66	20
Methylene Chloride	0.734	0.550		-25.07	20
trans-1,2-Dichloroethene	0.501	0.449		-10.38	20
1,1-Dichloroethane	0.870	0.861	0.1	-1.03	20
Cyclohexane	0.726	0.590		-18.73	20
2-Butanone	0.128	0.129		0.78	20
Carbon Tetrachloride	0.503	0.511		1.59	20
cis-1,2-Dichloroethene	0.591	0.567		-4.06	20
Bromochloromethane	0.325	0.297		-8.61	20
Chloroform	1.017	1.022		0.49	20
1,1,1-Trichloroethane	0.959	0.954		-0.52	20
Methylcyclohexane	0.480	0.444		-7.5	20
Benzene	1.231	1.227		-0.32	20
1,2-Dichloroethane	0.372	0.372		0	20
Trichloroethene	0.361	0.348		-3.6	20
1,2-Dichloropropane	0.298	0.306		2.68	20
Bromodichloromethane	0.486	0.504		3.7	20
4-Methyl-2-Pentanone	0.162	0.185		14.2	20
Toluene	0.805	0.838		4.1	20
t-1,3-Dichloropropene	0.414	0.433		4.59	20
cis-1,3-Dichloropropene	0.479	0.492		2.71	20
1,1,2-Trichloroethane	0.252	0.271		7.54	20
2-Hexanone	0.111	0.129		16.22	20
Dibromochloromethane	0.340	0.362		6.47	20
1,2-Dibromoethane	0.244	0.258		5.74	20
Tetrachloroethene	0.316	0.305		-3.48	20
Chlorobenzene	0.978	0.997	0.3	1.94	20
Ethyl Benzene	1.675	1.763		5.25	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_D Calibration Date/Time: 08/16/2022 14:52

Lab File ID: VD074102.D Init. Calib. Date(s): 08/15/2022 08/15/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 09:25 13:32

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.672	0.704		4.76	20
o-Xylene	0.613	0.662		7.99	20
Styrene	1.068	1.185		10.95	20
Bromoform	0.201	0.227	0.1	12.94	20
Isopropylbenzene	3.143	3.354		6.71	20
1,1,2,2-Tetrachloroethane	0.575	0.604	0.3	5.04	20
1,3-Dichlorobenzene	1.658	1.709		3.08	20
1,4-Dichlorobenzene	1.661	1.693		1.93	20
1,2-Dichlorobenzene	1.481	1.462		-1.28	20
1,2-Dibromo-3-Chloropropane	0.099	0.097		-2.02	20
1,2,4-Trichlorobenzene	0.950	0.861		-9.37	20
1,2,3-Trichlorobenzene	0.840	0.787		-6.31	20
1,2-Dichloroethane-d4	0.457	0.369		-19.26	20
Dibromofluoromethane	0.320	0.294		-8.13	20
Toluene-d8	0.970	0.799		-17.63	20
4-Bromofluorobenzene	0.401	0.401		0	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date/Time: 08/14/2022 16:28

Lab File ID: VY010002.D Init. Calib. Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.449	0.426		-5.12	20
Chloromethane	0.330	0.291	0.1	-11.82	20
Vinyl Chloride	0.347	0.321		-7.49	20
Bromomethane	0.277	0.249		-10.11	20
Chloroethane	0.230	0.203		-11.74	20
Trichlorofluoromethane	0.861	0.794		-7.78	20
1,1,2-Trichlorotrifluoroethane	0.553	0.511		-7.59	20
1,1-Dichloroethene	0.537	0.488		-9.13	20
Acetone	0.122	0.127		4.1	20
Carbon Disulfide	1.747	1.611		-7.78	20
Methyl tert-butyl Ether	1.312	1.232		-6.1	20
Methyl Acetate	0.384	0.281		-26.82	20
Methylene Chloride	0.809	0.632		-21.88	20
trans-1,2-Dichloroethene	0.597	0.576		-3.52	20
1,1-Dichloroethane	0.966	0.890	0.1	-7.87	20
Cyclohexane	0.908	0.784		-13.66	20
2-Butanone	0.189	0.160		-15.34	20
Carbon Tetrachloride	0.455	0.477		4.84	20
cis-1,2-Dichloroethene	0.641	0.622		-2.96	20
Bromochloromethane	0.386	0.344		-10.88	20
Chloroform	0.999	0.970		-2.9	20
1,1,1-Trichloroethane	0.849	0.841		-0.94	20
Methylcyclohexane	0.549	0.554		0.91	20
Benzene	1.379	1.358		-1.52	20
1,2-Dichloroethane	0.357	0.354		-0.84	20
Trichloroethene	0.373	0.381		2.14	20
1,2-Dichloropropane	0.331	0.313		-5.44	20
Bromodichloromethane	0.443	0.447		0.9	20
4-Methyl-2-Pentanone	0.231	0.199		-13.85	20
Toluene	0.830	0.856		3.13	20
t-1,3-Dichloropropene	0.455	0.449		-1.32	20
cis-1,3-Dichloropropene	0.526	0.533		1.33	20
1,1,2-Trichloroethane	0.285	0.280		-1.75	20
2-Hexanone	0.160	0.148		-7.5	20
Dibromochloromethane	0.325	0.335		3.08	20
1,2-Dibromoethane	0.273	0.276		1.1	20
Tetrachloroethene	0.365	0.380		4.11	20
Chlorobenzene	1.015	1.031	0.3	1.58	20
Ethyl Benzene	1.706	1.773		3.93	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: MSVOA_Y Calibration Date/Time: 08/14/2022 16:28

Lab File ID: VY010002.D Init. Calib. Date(s): 08/12/2022 08/12/2022

Heated Purge: (Y/N) Y Init. Calib. Time(s): 13:25 15:42

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.661	0.693		4.84	20
o-Xylene	0.626	0.652		4.15	20
Styrene	1.067	1.125		5.44	20
Bromoform	0.228	0.229	0.1	0.44	20
Isopropylbenzene	3.356	3.485		3.84	20
1,1,2,2-Tetrachloroethane	0.775	0.706	0.3	-8.9	20
1,3-Dichlorobenzene	1.600	1.625		1.56	20
1,4-Dichlorobenzene	1.664	1.675		0.66	20
1,2-Dichlorobenzene	1.439	1.483		3.06	20
1,2-Dibromo-3-Chloropropane	0.124	0.106		-14.52	20
1,2,4-Trichlorobenzene	0.819	0.864		5.49	20
1,2,3-Trichlorobenzene	0.732	0.774		5.74	20
1,2-Dichloroethane-d4	0.507	0.486		-4.14	20
Dibromofluoromethane	0.306	0.322		5.23	20
Toluene-d8	1.173	1.234		5.2	20
4-Bromofluorobenzene	0.430	0.441		2.56	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027953.D	50	08/13/22 13:41	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	845	J	196	2430	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.0		50 - 150	90%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027926.D	1	08/12/22 18:09	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	17.0	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	17.2		50 - 150	86%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027955.D	50	08/13/22 14:54	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	719	J	200	2490	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	15.8		50 - 150	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027938.D	1	08/13/22 2:46	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	11.0	J	4.00	47.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.5		50 - 150	67%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027957.D	50	08/13/22 16:06	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	715	J	189	2350	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.0		50 - 150	95%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027945.D	50	08/13/22 7:38	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	828	J	186	2320	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.1		50 - 150	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027948.D	50	08/13/22 9:26	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	771	J	189	2350	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	15.1		50 - 150	75%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027949.D	50	08/13/22 10:03	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	853	J	201	2500	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.7		50 - 150	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027950.D	50	08/13/22 10:39	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	698	J	186	2320	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.1		50 - 150	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	4 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027934.D	1	08/13/22 0:19	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	13.0	J	4.00	47.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.8		50 - 150	69%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

EPA SAMPLE NO.	S1 AAA-TFT	S2	S3	S4	TOT OUT
VBF0812S1	87				0
VBF0812S2	104				0
BSF0812S1	113				0
SB19	86				0
SB11	69				0
SB15	67				0
SB17	91				0
SB17MS	103				0
SB17MSD	111				0
SB13	75				0
SB12	93				0
SB14	96				0
SB18	90				0
SB20	79				0
SB16	95				0

	QC LIMITS
AAA-TFT	For Water : 50-150 For Soil : 50-150

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB17MS **Datafile:** FB027946.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	9317	828	8391	81%		50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB17MSD **Datafile:** FB027947.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
GRO	9298	828	9408	92%		50-150

MS/MSD % Recovery RPD : 12.8

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL GASOLINE RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICAT

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Matrix Spike - EPA Sample No : BSF0812S1 **Datafile:** FB027922.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
GRO	180	0	171	95	50-150

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0812S2

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FB027921.D Lab Sample ID: VBF0812S2

Date Analyzed: 08/12/22 Time Analyzed: 15:04

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB17	N4189-11	FB027945.D	08/13/22
SB17MS	N4189-11MS	FB027946.D	08/13/22
SB17MSD	N4189-11MSD	FB027947.D	08/13/22
SB13	N4189-13	FB027948.D	08/13/22
SB12	N4189-15	FB027949.D	08/13/22
SB14	N4189-17	FB027950.D	08/13/22
SB18	N4189-01	FB027953.D	08/13/22
SB20	N4189-05	FB027955.D	08/13/22
SB16	N4189-09	FB027957.D	08/13/22

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBF0812S1

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FB027920.D Lab Sample ID: VBF0812S1

Date Analyzed: 08/12/22 Time Analyzed: 14:27

GC Column: RTX-502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: FB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
BSF0812S1	BSF0812S1	FB027922.D	08/12/22
SB19	N4189-03	FB027926.D	08/12/22
SB11	N4189-19	FB027934.D	08/13/22
SB15	N4189-07	FB027938.D	08/13/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0812S1	SDG No.:	N4189
Lab Sample ID:	VBF0812S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027920.D	1	08/12/22 14:27	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	45.0	U	4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	17.4		50 - 150	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	VBF0812S2	SDG No.:	N4189
Lab Sample ID:	VBF0812S2	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027921.D	50	08/12/22 15:04	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	2250	U	181	2250	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	20.7		50 - 150	104%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	BSF0812S1	SDG No.:	N4189
Lab Sample ID:	BSF0812S1	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027922.D	1	08/12/22 15:41	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	171		4.00	45.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	22.6		50 - 150	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17MS	SDG No.:	N4189
Lab Sample ID:	N4189-11MS	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027946.D	50	08/13/22 8:14	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	8390		187	2330	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	20.7		50 - 150	103%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17MSD	SDG No.:	N4189
Lab Sample ID:	N4189-11MSD	Matrix:	SOIL
Analytical Method:	8015D GRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB027947.D	50	08/13/22 8:50	FB081222

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	9410		187	2330	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	22.1		50 - 150	111%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FB080922		Test : Gasoline Range Organics	
Concentration (PPB)	**Area Count**	**Reference Factor**	**File ID**
45	797213	17716	FB027882.D
90	1841782	20464	FB027883.D
180	3821591	21231	FB027884.D
450	8535867	18969	FB027885.D
900	19847181	22052	FB027886.D

AVG RF : 20086 **% RSD : 8.689** **AVG RT : 8.7968**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027919.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3419331	18996	20086	5.427

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027930.D Analyst Name: AJ/MA Analyst Date: 08-12-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3399198	18884	20086	5.984

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027941.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3352275	18624	20086	7.279

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027952.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3173464	17630	20086	12.227

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

20 PPB GRO STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FB027958.D Analyst Name: AJ/MA Analyst Date: 08-13-2022

Conc. (PPB)	Area Count	RF	Average RF	%D
180	3551690	19732	20086	1.762

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** FID_B

GC Column: RTX-502.2 **ID:** 0.53 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **8.7968**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 13:49	FB027919.D	8.791	
VBF0812S1	VBF0812S1	12 Aug 2022 14:27	FB027920.D	8.794	
VBF0812S2	VBF0812S2	12 Aug 2022 15:04	FB027921.D	8.795	
BSF0812S1	BSF0812S1	12 Aug 2022 15:41	FB027922.D	8.796	
SB19	N4189-03	12 Aug 2022 18:09	FB027926.D	8.797	
20 PPB GRO STD	20 PPB GRO STD	12 Aug 2022 20:38	FB027930.D	8.796	
SB11	N4189-19	13 Aug 2022 00:19	FB027934.D	8.792	
SB15	N4189-07	13 Aug 2022 2:46	FB027938.D	8.792	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 4:36	FB027941.D	8.790	
SB17	N4189-11	13 Aug 2022 7:38	FB027945.D	8.785	
SB17MS	N4189-11MS	13 Aug 2022 8:14	FB027946.D	8.786	
SB17MSD	N4189-11MSD	13 Aug 2022 8:50	FB027947.D	8.786	
SB13	N4189-13	13 Aug 2022 9:26	FB027948.D	8.786	
SB12	N4189-15	13 Aug 2022 10:03	FB027949.D	8.787	
SB14	N4189-17	13 Aug 2022 10:39	FB027950.D	8.787	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 11:52	FB027952.D	8.788	
SB18	N4189-01	13 Aug 2022 13:41	FB027953.D	8.788	
SB20	N4189-05	13 Aug 2022 14:54	FB027955.D	8.789	
SB16	N4189-09	13 Aug 2022 16:06	FB027957.D	8.788	
20 PPB GRO STD	20 PPB GRO STD	13 Aug 2022 16:43	FB027958.D	8.790	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits	Lower Limit	Upper Limits
(± 0.10 minutes)	8.6968	8.8968

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/17/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			SVOC-PAH	8270E		08/13/22	08/18/22	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-01	SB18	SOIL	Phenanthrene	340.000		91.5	190	ug/Kg
N4189-01	SB18	SOIL	Fluoranthene	360.000		87.3	190	ug/Kg
N4189-01	SB18	SOIL	Pyrene	420.000		81.2	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)anthracene	160.000	J	95	190	ug/Kg
N4189-01	SB18	SOIL	Chrysene	160.000	J	93.6	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(b)fluoranthene	180.000	J	75.5	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(a)pyrene	170.000	J	74.1	190	ug/Kg
N4189-01	SB18	SOIL	Benzo(g,h,i)perylene	130.000	J	110	190	ug/Kg
			Total Svoc :	**1,920.00**				
			Total Concentration:	**1,920.00**				
Client ID : SB20								
N4189-05	SB20	SOIL	Phenanthrene	180.000	J	94	190	ug/Kg
N4189-05	SB20	SOIL	Fluoranthene	260.000		89.7	190	ug/Kg
N4189-05	SB20	SOIL	Pyrene	220.000		83.4	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)anthracene	150.000	J	97.6	190	ug/Kg
N4189-05	SB20	SOIL	Chrysene	150.000	J	96.1	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(b)fluoranthene	190.000		77.6	190	ug/Kg
N4189-05	SB20	SOIL	Benzo(a)pyrene	150.000	J	76.1	190	ug/Kg
			Total Svoc :	**1,300.00**				
			Total Concentration:	**1,300.00**				
Client ID : SB17								
N4189-11	SB17	SOIL	Fluoranthene	190.000		82.6	180	ug/Kg
N4189-11	SB17	SOIL	Pyrene	140.000	J	76.8	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)anthracene	94.100	J	89.8	180	ug/Kg
N4189-11	SB17	SOIL	Chrysene	98.600	J	88.5	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(b)fluoranthene	150.000	J	71.4	180	ug/Kg
N4189-11	SB17	SOIL	Benzo(a)pyrene	110.000	J	70.1	180	ug/Kg
			Total Svoc :	**782.70**				
			Total Concentration:	**782.70**				
Client ID : SB11								
N4189-19	SB11	SOIL	Phenanthrene	180.000		87	180	ug/Kg
N4189-19	SB11	SOIL	Fluoranthene	470.000		83	180	ug/Kg
N4189-19	SB11	SOIL	Pyrene	380.000		77.2	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)anthracene	230.000		90.3	180	ug/Kg
N4189-19	SB11	SOIL	Chrysene	260.000		89	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(b)fluoranthene	430.000		71.8	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(k)fluoranthene	120.000	J	76.6	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(a)pyrene	340.000		70.5	180	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
N4189-19	SB11	SOIL	Indeno(1,2,3-cd)pyrene	180.000		110	180	ug/Kg
N4189-19	SB11	SOIL	Benzo(g,h,i)perylene	230.000		100	180	ug/Kg
			Total Svoc :	**2,820.00**				
			Total Concentration:	**2,820.00**				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.8
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129872.D	1	08/13/22 08:50	08/18/22 13:07	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	80.9	190	ug/Kg
208-96-8	Acenaphthylene	190	U	75.2	190	ug/Kg
83-32-9	Acenaphthene	190	U	86.3	190	ug/Kg
86-73-7	Fluorene	190	U	86.2	190	ug/Kg
85-01-8	Phenanthrene	340		91.5	190	ug/Kg
120-12-7	Anthracene	190	U	91.9	190	ug/Kg
206-44-0	Fluoranthene	360		87.3	190	ug/Kg
129-00-0	Pyrene	420		81.2	190	ug/Kg
56-55-3	Benzo(a)anthracene	160	J	95.0	190	ug/Kg
218-01-9	Chrysene	160	J	93.6	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	J	75.5	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	80.5	190	ug/Kg
50-32-8	Benzo(a)pyrene	170	J	74.1	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	130	J	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	30.5		27 - 109	31%	SPK: 100
321-60-8	2-Fluorobiphenyl	31.9		30 - 103	32%	SPK: 100
1718-51-0	Terphenyl-d14	34.1		21 - 107	34%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	134000	6.792			
1146-65-2	Naphthalene-d8	532000	8.075			
15067-26-2	Acenaphthene-d10	279000	9.833			
1517-22-2	Phenanthrene-d10	432000	11.321			
1719-03-5	Chrysene-d12	213000	13.968			
1520-96-3	Perylene-d12	265000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.8
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129872.D	1	08/13/22 08:50	08/18/22 13:07	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129873.D	1	08/13/22 08:50	08/18/22 13:39	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	80.7	190	ug/Kg
208-96-8	Acenaphthylene	190	U	75.0	190	ug/Kg
83-32-9	Acenaphthene	190	U	86.2	190	ug/Kg
86-73-7	Fluorene	190	U	86.1	190	ug/Kg
85-01-8	Phenanthrene	190	U	91.3	190	ug/Kg
120-12-7	Anthracene	190	U	91.7	190	ug/Kg
206-44-0	Fluoranthene	190	U	87.1	190	ug/Kg
129-00-0	Pyrene	190	U	81.0	190	ug/Kg
56-55-3	Benzo(a)anthracene	190	U	94.8	190	ug/Kg
218-01-9	Chrysene	190	U	93.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190	U	75.3	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	80.4	190	ug/Kg
50-32-8	Benzo(a)pyrene	190	U	73.9	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	62.5		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.4		30 - 103	55%	SPK: 100
1718-51-0	Terphenyl-d14	61.3		21 - 107	61%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	129000	6.792			
1146-65-2	Naphthalene-d8	504000	8.075			
15067-26-2	Acenaphthene-d10	272000	9.827			
1517-22-2	Phenanthrene-d10	452000	11.321			
1719-03-5	Chrysene-d12	236000	13.968			
1520-96-3	Perylene-d12	264000	15.427			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	8.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129873.D	1	08/13/22 08:50	08/18/22 13:39	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.1
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129839.D	1	08/13/22 08:50	08/17/22 11:53	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	83.1	190	ug/Kg
208-96-8	Acenaphthylene	190	U	77.2	190	ug/Kg
83-32-9	Acenaphthene	190	U	88.7	190	ug/Kg
86-73-7	Fluorene	190	U	88.6	190	ug/Kg
85-01-8	Phenanthrene	180	J	94.0	190	ug/Kg
120-12-7	Anthracene	190	U	94.4	190	ug/Kg
206-44-0	Fluoranthene	260		89.7	190	ug/Kg
129-00-0	Pyrene	220		83.4	190	ug/Kg
56-55-3	Benzo(a)anthracene	150	J	97.6	190	ug/Kg
218-01-9	Chrysene	150	J	96.1	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190		77.6	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	82.7	190	ug/Kg
50-32-8	Benzo(a)pyrene	150	J	76.1	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	50.8		27 - 109	51%	SPK: 100
321-60-8	2-Fluorobiphenyl	52.2		30 - 103	52%	SPK: 100
1718-51-0	Terphenyl-d14	36.4		21 - 107	36%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	140000	6.822			
1146-65-2	Naphthalene-d8	540000	8.104			
15067-26-2	Acenaphthene-d10	250000	9.863			
1517-22-2	Phenanthrene-d10	314000	11.351			
1719-03-5	Chrysene-d12	264000	14.004			
1520-96-3	Perylene-d12	220000	15.48			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.1
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129839.D	1	08/13/22 08:50	08/17/22 11:53	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129875.D	1	08/13/22 08:50	08/18/22 14:44	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.7	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.3	180	ug/Kg
83-32-9	Acenaphthene	180	U	81.9	180	ug/Kg
86-73-7	Fluorene	180	U	81.8	180	ug/Kg
85-01-8	Phenanthrene	180	U	86.8	180	ug/Kg
120-12-7	Anthracene	180	U	87.2	180	ug/Kg
206-44-0	Fluoranthene	180	U	82.8	180	ug/Kg
129-00-0	Pyrene	180	U	77.0	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	90.1	180	ug/Kg
218-01-9	Chrysene	180	U	88.7	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	71.6	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.4	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	70.3	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	100	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	47.7		27 - 109	48%	SPK: 100
321-60-8	2-Fluorobiphenyl	50.4		30 - 103	50%	SPK: 100
1718-51-0	Terphenyl-d14	51.3		21 - 107	51%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	128000	6.793			
1146-65-2	Naphthalene-d8	517000	8.075			
15067-26-2	Acenaphthene-d10	269000	9.834			
1517-22-2	Phenanthrene-d10	409000	11.322			
1719-03-5	Chrysene-d12	217000	13.969			
1520-96-3	Perylene-d12	258000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129875.D	1	08/13/22 08:50	08/18/22 14:44	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129862.D	1	08/13/22 08:50	08/18/22 00:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.3	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.8	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.6	180	ug/Kg
86-73-7	Fluorene	180	U	83.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.6	180	ug/Kg
120-12-7	Anthracene	180	U	89.0	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.6	180	ug/Kg
129-00-0	Pyrene	180	U	78.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.0	180	ug/Kg
218-01-9	Chrysene	180	U	90.6	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	25.8	*	27 - 109	26%	SPK: 100
321-60-8	2-Fluorobiphenyl	26.9	*	30 - 103	27%	SPK: 100
1718-51-0	Terphenyl-d14	28.6		21 - 107	29%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	529000	8.092			
15067-26-2	Acenaphthene-d10	268000	9.845			
1517-22-2	Phenanthrene-d10	429000	11.339			
1719-03-5	Chrysene-d12	219000	13.986			
1520-96-3	Perylene-d12	245000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129862.D	1	08/13/22 08:50	08/18/22 00:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129874.D	1	08/13/22 08:50	08/18/22 14:12	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.3	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.8	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.6	180	ug/Kg
86-73-7	Fluorene	180	U	83.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.6	180	ug/Kg
120-12-7	Anthracene	180	U	89.0	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.6	180	ug/Kg
129-00-0	Pyrene	180	U	78.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.0	180	ug/Kg
218-01-9	Chrysene	180	U	90.6	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	25.8	*	27 - 109	26%	SPK: 100
321-60-8	2-Fluorobiphenyl	26.7	*	30 - 103	27%	SPK: 100
1718-51-0	Terphenyl-d14	30.9		21 - 107	31%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	129000	6.793			
1146-65-2	Naphthalene-d8	521000	8.075			
15067-26-2	Acenaphthene-d10	274000	9.828			
1517-22-2	Phenanthrene-d10	455000	11.322			
1719-03-5	Chrysene-d12	220000	13.969			
1520-96-3	Perylene-d12	250000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129874.D	1	08/13/22 08:50	08/18/22 14:12	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.4
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129843.D	1	08/13/22 08:50	08/17/22 13:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.5	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.1	180	ug/Kg
83-32-9	Acenaphthene	180	U	81.6	180	ug/Kg
86-73-7	Fluorene	180	U	81.5	180	ug/Kg
85-01-8	Phenanthrene	180	U	86.5	180	ug/Kg
120-12-7	Anthracene	180	U	86.9	180	ug/Kg
206-44-0	Fluoranthene	190		82.6	180	ug/Kg
129-00-0	Pyrene	140	J	76.8	180	ug/Kg
56-55-3	Benzo(a)anthracene	94.1	J	89.8	180	ug/Kg
218-01-9	Chrysene	98.6	J	88.5	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	150	J	71.4	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.2	180	ug/Kg
50-32-8	Benzo(a)pyrene	110	J	70.1	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	100	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	58.0		27 - 109	58%	SPK: 100
321-60-8	2-Fluorobiphenyl	64.1		30 - 103	64%	SPK: 100
1718-51-0	Terphenyl-d14	46.3		21 - 107	46%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	140000	6.822			
1146-65-2	Naphthalene-d8	536000	8.104			
15067-26-2	Acenaphthene-d10	249000	9.863			
1517-22-2	Phenanthrene-d10	309000	11.351			
1719-03-5	Chrysene-d12	270000	14.004			
1520-96-3	Perylene-d12	229000	15.474			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.4
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129843.D	1	08/13/22 08:50	08/17/22 13:58	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129870.D	1	08/13/22 08:50	08/18/22 12:04	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	78.4	180	ug/Kg
208-96-8	Acenaphthylene	180	U	72.9	180	ug/Kg
83-32-9	Acenaphthene	180	U	83.7	180	ug/Kg
86-73-7	Fluorene	180	U	83.6	180	ug/Kg
85-01-8	Phenanthrene	180	U	88.7	180	ug/Kg
120-12-7	Anthracene	180	U	89.1	180	ug/Kg
206-44-0	Fluoranthene	180	U	84.7	180	ug/Kg
129-00-0	Pyrene	180	U	78.7	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	92.1	180	ug/Kg
218-01-9	Chrysene	180	U	90.7	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	73.2	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	78.1	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	71.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	38.4		27 - 109	38%	SPK: 100
321-60-8	2-Fluorobiphenyl	40.5		30 - 103	40%	SPK: 100
1718-51-0	Terphenyl-d14	47.1		21 - 107	47%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	137000	6.793			
1146-65-2	Naphthalene-d8	556000	8.075			
15067-26-2	Acenaphthene-d10	294000	9.828			
1517-22-2	Phenanthrene-d10	522000	11.322			
1719-03-5	Chrysene-d12	297000	13.969			
1520-96-3	Perylene-d12	245000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129870.D	1	08/13/22 08:50	08/18/22 12:04	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.5
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129863.D	1	08/13/22 08:50	08/18/22 01:29	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	190	U	83.3	190	ug/Kg
208-96-8	Acenaphthylene	190	U	77.4	190	ug/Kg
83-32-9	Acenaphthene	190	U	88.9	190	ug/Kg
86-73-7	Fluorene	190	U	88.8	190	ug/Kg
85-01-8	Phenanthrene	190	U	94.2	190	ug/Kg
120-12-7	Anthracene	190	U	94.7	190	ug/Kg
206-44-0	Fluoranthene	190	U	90.0	190	ug/Kg
129-00-0	Pyrene	190	U	83.6	190	ug/Kg
56-55-3	Benzo(a)anthracene	190	U	97.9	190	ug/Kg
218-01-9	Chrysene	190	U	96.4	190	ug/Kg
205-99-2	Benzo(b)fluoranthene	190	U	77.8	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190	U	83.0	190	ug/Kg
50-32-8	Benzo(a)pyrene	190	U	76.3	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190	U	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg
191-24-2	Benzo(g,h,i)perylene	190	U	110	190	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	69.1		27 - 109	69%	SPK: 100
321-60-8	2-Fluorobiphenyl	74.6		30 - 103	75%	SPK: 100
1718-51-0	Terphenyl-d14	49.5		21 - 107	49%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	480000	8.092			
15067-26-2	Acenaphthene-d10	210000	9.845			
1517-22-2	Phenanthrene-d10	279000	11.339			
1719-03-5	Chrysene-d12	260000	13.986			
1520-96-3	Perylene-d12	256000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	11.5
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129863.D	1	08/13/22 08:50	08/18/22 01:29	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129859.D	1	08/13/22 08:50	08/17/22 23:23	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	77.0	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.6	180	ug/Kg
83-32-9	Acenaphthene	180	U	82.3	180	ug/Kg
86-73-7	Fluorene	180	U	82.2	180	ug/Kg
85-01-8	Phenanthrene	180	U	87.2	180	ug/Kg
120-12-7	Anthracene	180	U	87.6	180	ug/Kg
206-44-0	Fluoranthene	180	U	83.2	180	ug/Kg
129-00-0	Pyrene	180	U	77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	180	U	90.5	180	ug/Kg
218-01-9	Chrysene	180	U	89.1	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	180	U	71.9	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180	U	76.7	180	ug/Kg
50-32-8	Benzo(a)pyrene	180	U	70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	U	110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	180	U	100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	62.4		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	62.7		30 - 103	63%	SPK: 100
1718-51-0	Terphenyl-d14	64.5		21 - 107	64%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	131000	6.81			
1146-65-2	Naphthalene-d8	526000	8.092			
15067-26-2	Acenaphthene-d10	281000	9.845			
1517-22-2	Phenanthrene-d10	480000	11.339			
1719-03-5	Chrysene-d12	308000	13.986			
1520-96-3	Perylene-d12	225000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129859.D	1	08/13/22 08:50	08/17/22 23:23	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129864.D	1	08/13/22 08:50	08/18/22 02:01	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	180	U	76.9	180	ug/Kg
208-96-8	Acenaphthylene	180	U	71.5	180	ug/Kg
83-32-9	Acenaphthene	180	U	82.1	180	ug/Kg
86-73-7	Fluorene	180	U	82.0	180	ug/Kg
85-01-8	Phenanthrene	180		87.0	180	ug/Kg
120-12-7	Anthracene	180	U	87.4	180	ug/Kg
206-44-0	Fluoranthene	470		83.0	180	ug/Kg
129-00-0	Pyrene	380		77.2	180	ug/Kg
56-55-3	Benzo(a)anthracene	230		90.3	180	ug/Kg
218-01-9	Chrysene	260		89.0	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	430		71.8	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	120	J	76.6	180	ug/Kg
50-32-8	Benzo(a)pyrene	340		70.5	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	230		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	68.0		27 - 109	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	73.7		30 - 103	74%	SPK: 100
1718-51-0	Terphenyl-d14	58.0		21 - 107	58%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	127000	6.81			
1146-65-2	Naphthalene-d8	494000	8.092			
15067-26-2	Acenaphthene-d10	234000	9.845			
1517-22-2	Phenanthrene-d10	329000	11.339			
1719-03-5	Chrysene-d12	260000	13.992			
1520-96-3	Perylene-d12	207000	15.463			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129864.D	1	08/13/22 08:50	08/18/22 02:01	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Surrogate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E

Lab Sample ID	Client ID	Parameter	Spike (PPM)	Result (PPM)	Recovery (%)	Qual	Limits (%) Low	High
N4189-01	SB18	Nitrobenzene-d5	100	30.5	31		27	109
		2-Fluorobiphenyl	100	31.9	32		30	103
		Terphenyl-d14	100	34.1	34		21	107
N4189-03	SB19	Nitrobenzene-d5	100	62.5	62		27	109
		2-Fluorobiphenyl	100	55.4	55		30	103
		Terphenyl-d14	100	61.3	61		21	107
N4189-05	SB20	Nitrobenzene-d5	100	50.8	51		27	109
		2-Fluorobiphenyl	100	52.2	52		30	103
		Terphenyl-d14	100	36.4	36		21	107
N4189-07	SB15	Nitrobenzene-d5	100	47.7	48		27	109
		2-Fluorobiphenyl	100	50.4	50		30	103
		Terphenyl-d14	100	51.3	51		21	107
N4189-09	SB16	Nitrobenzene-d5	100	25.8	26	*	27	109
		2-Fluorobiphenyl	100	26.9	27	*	30	103
		Terphenyl-d14	100	28.6	29		21	107
N4189-09RE	SB16RE	Nitrobenzene-d5	100	25.8	26	*	27	109
		2-Fluorobiphenyl	100	26.7	27	*	30	103
		Terphenyl-d14	100	30.9	31		21	107
N4189-11	SB17	Nitrobenzene-d5	100	58.0	58		27	109
		2-Fluorobiphenyl	100	64.1	64		30	103
		Terphenyl-d14	100	46.3	46		21	107
N4189-13	SB13	Nitrobenzene-d5	100	38.4	38		27	109
		2-Fluorobiphenyl	100	40.5	40		30	103
		Terphenyl-d14	100	47.1	47		21	107
N4189-15	SB12	Nitrobenzene-d5	100	69.1	69		27	109
		2-Fluorobiphenyl	100	74.6	75		30	103
		Terphenyl-d14	100	49.5	49		21	107
N4189-17	SB14	Nitrobenzene-d5	100	62.4	62		27	109
		2-Fluorobiphenyl	100	62.7	63		30	103
		Terphenyl-d14	100	64.5	64		21	107
N4189-17MS	SB14MS	Nitrobenzene-d5	100	80.5	81		27	109
		2-Fluorobiphenyl	100	80.2	80		30	103
		Terphenyl-d14	100	91.2	91		21	107
N4189-17MSD	SB14MSD	Nitrobenzene-d5	100	80.2	80		27	109
		2-Fluorobiphenyl	100	82.1	82		30	103
		Terphenyl-d14	100	90.7	91		21	107
N4189-19	SB11	Nitrobenzene-d5	100	68.0	68		27	109
		2-Fluorobiphenyl	100	73.7	74		30	103
		Terphenyl-d14	100	58.0	58		21	107
PB146986BL	PB146986BL	Nitrobenzene-d5	100	79.6	80		27	109
		2-Fluorobiphenyl	100	79.9	80		30	103
		Terphenyl-d14	100	69.3	69		21	107
PB146986BS	PB146986BS	Nitrobenzene-d5	100	80.2	80		27	109
		2-Fluorobiphenyl	100	78.8	79		30	103
		Terphenyl-d14	100	91.7	92		21	107

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4189-17MS		**Client Sample ID: SB14MS**						**DataFile: BF129860.D**			
Naphthalene	1700	0	1600	ug/Kg	94				72	110	
Acenaphthylene	1700	0	1600	ug/Kg	94				79	118	
Acenaphthene	1700	0	1600	ug/Kg	94				70	121	
Fluorene	1700	0	1600	ug/Kg	94				68	116	
Phenanthrene	1700	0	1600	ug/Kg	94				72	113	
Anthracene	1700	0	1600	ug/Kg	94				62	124	
Fluoranthene	1700	0	1500	ug/Kg	88				59	125	
Pyrene	1700	0	1800	ug/Kg	106				52	128	
Benzo(a)anthracene	1700	0	1600	ug/Kg	94				71	114	
Chrysene	1700	0	1600	ug/Kg	94				57	121	
Benzo(b)fluoranthene	1700	0	1500	ug/Kg	88				67	121	
Benzo(k)fluoranthene	1700	0	1500	ug/Kg	88				74	114	
Benzo(a)pyrene	1700	0	1700	ug/Kg	100				70	142	
Indeno(1,2,3-cd)pyrene	1700	0	1800	ug/Kg	106				61	125	
Dibenz(a,h)anthracene	1700	0	1900	ug/Kg	112				67	130	
Benzo(g,h,i)perylene	1700	0	2000	ug/Kg	118				53	140	

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: SW8270E

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Lab Sample ID: N4189-17MSD		**Client Sample ID: SB14MSD**						**DataFile: BF129861.D**			
Naphthalene	1700	0	1600	ug/Kg	94		0		72	110	20
Acenaphthylene	1700	0	1600	ug/Kg	94		0		79	118	20
Acenaphthene	1700	0	1600	ug/Kg	94		0		70	121	20
Fluorene	1700	0	1600	ug/Kg	94		0		68	116	20
Phenanthrene	1700	0	1600	ug/Kg	94		0		72	113	20
Anthracene	1700	0	1600	ug/Kg	94		0		62	124	20
Fluoranthene	1700	0	1400	ug/Kg	82		7		59	125	20
Pyrene	1700	0	1800	ug/Kg	106		0		52	128	20
Benzo(a)anthracene	1700	0	1600	ug/Kg	94		0		71	114	20
Chrysene	1700	0	1600	ug/Kg	94		0		57	121	20
Benzo(b)fluoranthene	1700	0	1500	ug/Kg	88		0		67	121	20
Benzo(k)fluoranthene	1700	0	1500	ug/Kg	88		0		74	114	20
Benzo(a)pyrene	1700	0	1700	ug/Kg	100		0		70	142	20
Indeno(1,2,3-cd)pyrene	1700	0	1900	ug/Kg	112		6		61	125	20
Dibenz(a,h)anthracene	1700	0	1900	ug/Kg	112		0		67	130	20
Benzo(g,h,i)perylene	1700	0	2000	ug/Kg	118		0		53	140	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8270E **DataFile:** BF129969.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB146986BS	Naphthalene	1700	1300	ug/Kg	76				62	100	
	Acenaphthylene	1700	1300	ug/Kg	76				63	101	
	Acenaphthene	1700	1300	ug/Kg	76				57	104	
	Fluorene	1700	1300	ug/Kg	76				61	101	
	Phenanthrene	1700	1300	ug/Kg	76				59	103	
	Anthracene	1700	1400	ug/Kg	82				61	105	
	Fluoranthene	1700	1300	ug/Kg	76				57	107	
	Pyrene	1700	1500	ug/Kg	88				59	103	
	Benzo(a)anthracene	1700	1300	ug/Kg	76				60	102	
	Chrysene	1700	1300	ug/Kg	76				59	101	
	Benzo(b)fluoranthene	1700	1300	ug/Kg	76				62	109	
	Benzo(k)fluoranthene	1700	1400	ug/Kg	82				62	109	
	Benzo(a)pyrene	1700	1500	ug/Kg	88				63	103	
	Indeno(1,2,3-cd)pyrene	1700	1700	ug/Kg	100				63	101	
	Dibenz(a,h)anthracene	1700	1800	ug/Kg	106				61	112	
	Benzo(g,h,i)perylene	1700	1900	ug/Kg	112				57	116	

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146986BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129869.D Lab Sample ID: PB146986BL

Instrument ID: BNA_F Date Extracted: 08/13/2022

Matrix: (soil/water) SOIL Date Analyzed: 08/18/2022

Level: (low/med) LOW Time Analyzed: 11:22

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
SB13	N4189-13	BF129870.D	08/18/2022
SB18	N4189-01	BF129872.D	08/18/2022
SB19	N4189-03	BF129873.D	08/18/2022
SB15	N4189-07	BF129875.D	08/18/2022
PB146986BS	PB146986BS	BF129969.D	08/24/2022
SB20	N4189-05	BF129839.D	08/17/2022
SB16	N4189-09	BF129862.D	08/18/2022
SB17	N4189-11	BF129843.D	08/17/2022
SB14	N4189-17	BF129859.D	08/17/2022
SB14MS	N4189-17MS	BF129860.D	08/17/2022
SB12	N4189-15	BF129863.D	08/18/2022
SB14MSD	N4189-17MSD	BF129861.D	08/18/2022
SB11	N4189-19	BF129864.D	08/18/2022

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129760.D DFTPP Injection Date: 08/14/2022

Instrument ID: BNA_F DFTPP Injection Time: 13:35

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	35.6
68	Less than 2.0% of mass 69	0.6 (1.7) 1
69	Mass 69 relative abundance	36.3
70	Less than 2.0% of mass 69	0.2 (0.5) 1
127	10.0 - 80.0% of mass 198	50.7
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 60.0% of mass 198	30.4
365	Greater than 1% of mass 198	4
441	Present, but less than mass 443	16.1
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.9 (18.9) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDICC005	SSTDICC005	BF129761.D	08/14/2022	14:06
SSTDICC010	SSTDICC010	BF129762.D	08/14/2022	14:37
SSTDICC020	SSTDICC020	BF129763.D	08/14/2022	15:08
SSTDICCC040	SSTDICCC040	BF129764.D	08/14/2022	15:41
SSTDICC050	SSTDICC050	BF129765.D	08/14/2022	16:12
SSTDICC060	SSTDICC060	BF129766.D	08/14/2022	16:43
SSTDICC080	SSTDICC080	BF129767.D	08/14/2022	17:15

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129834.D DFTPP Injection Date: 08/17/2022

Instrument ID: BNA_F DFTPP Injection Time: 09:11

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	36.9
68	Less than 2.0% of mass 69	0.7 (1.9) 1
69	Mass 69 relative abundance	37.4
70	Less than 2.0% of mass 69	0.2 (0.6) 1
127	10.0 - 80.0% of mass 198	52.2
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 60.0% of mass 198	29.1
365	Greater than 1% of mass 198	3.8
441	Present, but less than mass 443	15.5
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	18.7 (18.7) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129835.D	08/17/2022	09:42
SB20	N4189-05	BF129839.D	08/17/2022	11:53
SB17	N4189-11	BF129843.D	08/17/2022	13:58

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129845.D DFTPP Injection Date: 08/17/2022

Instrument ID: BNA_F DFTPP Injection Time: 15:45

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.8 (1.9) 1
69	Mass 69 relative abundance	39.9
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	53.5
197	Less than 2.0% of mass 198	0.1
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	27.6
365	Greater than 1% of mass 198	3.7
441	Present, but less than mass 443	13.3
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	16.1 (19.7) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129846.D	08/17/2022	16:17
SB14	N4189-17	BF129859.D	08/17/2022	23:23
SB14MS	N4189-17MS	BF129860.D	08/17/2022	23:55
SB14MSD	N4189-17MSD	BF129861.D	08/18/2022	00:26
SB16	N4189-09	BF129862.D	08/18/2022	00:58
SB12	N4189-15	BF129863.D	08/18/2022	01:29
SB11	N4189-19	BF129864.D	08/18/2022	02:01

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129867.D DFTPP Injection Date: 08/18/2022

Instrument ID: BNA_F DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	39.8
68	Less than 2.0% of mass 69	0.7 (1.7) 1
69	Mass 69 relative abundance	40.2
70	Less than 2.0% of mass 69	0.1 (0.3) 1
127	10.0 - 80.0% of mass 198	53.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	27.6
365	Greater than 1% of mass 198	3.7
441	Present, but less than mass 443	12.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	15 (18.5) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129868.D	08/18/2022	10:50
PB146986BL	PB146986BL	BF129869.D	08/18/2022	11:22
SB13	N4189-13	BF129870.D	08/18/2022	12:04
SB18	N4189-01	BF129872.D	08/18/2022	13:07
SB19	N4189-03	BF129873.D	08/18/2022	13:39
SB16RE	N4189-09RE	BF129874.D	08/18/2022	14:12
SB15	N4189-07	BF129875.D	08/18/2022	14:44

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM SAS No.: N4189 SDG NO.: N4189

Lab File ID: BF129966.D DFTPP Injection Date: 08/24/2022

Instrument ID: BNA_F DFTPP Injection Time: 09:21

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	38.2
68	Less than 2.0% of mass 69	0.7 (1.8) 1
69	Mass 69 relative abundance	38.7
70	Less than 2.0% of mass 69	0.2 (0.4) 1
127	10.0 - 80.0% of mass 198	54
197	Less than 2.0% of mass 198	0.4
198	Base Peak, 100% relative abundance	100
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	29.6
365	Greater than 1% of mass 198	4.4
441	Present, but less than mass 443	14.6
442	Greater than 50% of mass 198	100
443	15.0 - 24.0% of mass 442	17.2 (18.6) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
SSTDCCC040	SSTDCCC040	BF129967.D	08/24/2022	11:09
PB146986BS	PB146986BS	BF129969.D	08/24/2022	12:18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129835.D Time Analyzed: 09:42

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	158646	6.822	622310	8.11	340878	9.87
	UPPER LIMIT	317292	7.322	1244620	8.61	681756	10.369
	LOWER LIMIT	79323	6.322	311155	7.61	170439	9.369
	EPA SAMPLE NO.						
01	SB20	140155	6.82	539866	8.10	249649	9.86
02	SB17	139583	6.82	536295	8.10	248664	9.86

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129835.D Time Analyzed: 09:42

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	600593	11.357	387109	14.01	289027	15.48
	UPPER LIMIT	1201190	11.857	774218	14.51	578054	15.98
	LOWER LIMIT	300297	10.857	193555	13.51	144514	14.98
	EPA SAMPLE NO.						
01	SB20	314367	11.35	264451	14.00	219856	15.48
02	SB17	309191	11.35	269688	14.00	228742	15.47

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129846.D Time Analyzed: 16:17

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	121447	6.81	452320	8.10	226697	9.85
	UPPER LIMIT	242894	7.31	904640	8.598	453394	10.351
	LOWER LIMIT	60723.5	6.31	226160	7.598	113349	9.351
	EPA SAMPLE NO.						
01	SB16	130880	6.81	528633	8.09	268187	9.85
02	SB12	130849	6.81	480170	8.09	209632	9.85
03	SB14	130528	6.81	526007	8.09	280802	9.85
04	SB14MS	138782	6.81	549726	8.09	281416	9.85
05	SB14MSD	137932	6.81	544329	8.10	270839	9.85
06	SB11	126662	6.81	494345	8.09	233671	9.85

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/17/2022

Lab File ID: BF129846.D Time Analyzed: 16:17

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	373426	11.339	213621	13.992	213654	15.457
	UPPER LIMIT	746852	11.839	427242	14.492	427308	15.957
	LOWER LIMIT	186713	10.839	106811	13.492	106827	14.957
	EPA SAMPLE NO.						
01	SB16	429023	11.34	218663	13.99	245210	15.45
02	SB12	278504	11.34	259773	13.99	256261	15.45
03	SB14	480047	11.34	307774	13.99	225167	15.45
04	SB14MS	455183	11.34	243432	13.99	244283	15.45
05	SB14MSD	440649	11.34	225641	13.99	242404	15.45
06	SB11	329042	11.34	259987	13.99	206585	15.46

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/18/2022

Lab File ID: BF129868.D Time Analyzed: 10:50

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	140690	6.792	533803	8.08	274773	9.83
	UPPER LIMIT	281380	7.292	1067610	8.58	549546	10.333
	LOWER LIMIT	70345	6.292	266902	7.58	137387	9.333
	EPA SAMPLE NO.						
01	PB146986BL	155273	6.79	618070	8.08	324429	9.83
02	SB13	136973	6.79	556300	8.08	293898	9.83
03	SB18	133559	6.79	532277	8.08	279463	9.83
04	SB19	129269	6.79	504103	8.08	271828	9.83
05	SB16RE	128557	6.79	520840	8.08	274433	9.83
06	SB15	128482	6.79	516862	8.08	269162	9.83

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/18/2022

Lab File ID: BF129868.D Time Analyzed: 10:50

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	471556	11.321	315370	13.974	241403	15.427
	UPPER LIMIT	943112	11.821	630740	14.474	482806	15.927
	LOWER LIMIT	235778	10.821	157685	13.474	120702	14.927
	EPA SAMPLE NO.						
01	PB146986BL	574627	11.32	480635	13.97	447800	15.43
02	SB13	521937	11.32	296612	13.97	245300	15.43
03	SB18	432444	11.32	212811	13.97	265070	15.43
04	SB19	451900	11.32	236351	13.97	263948	15.43
05	SB16RE	454836	11.32	220119	13.97	249928	15.43
06	SB15	408800	11.32	217022	13.97	258268	15.43

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/24/2022

Lab File ID: BF129967.D Time Analyzed: 11:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	118946	6.769	461065	8.05	253993	9.81
	UPPER LIMIT	237892	7.269	922130	8.551	507986	10.31
	LOWER LIMIT	59473	6.269	230533	7.551	126997	9.31
	EPA SAMPLE NO.						
01	PB146986BS	136395	6.77	565482	8.05	300301	9.81

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

EPA Sample No.: SSTDCCC040 Date Analyzed: 08/24/2022

Lab File ID: BF129967.D Time Analyzed: 11:09

Instrument ID: BNA_F GC Column: DB-UI ID: 0.18 (mm)

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	433190	11.298	283746	13.945	209548	15.392
	UPPER LIMIT	866380	11.798	567492	14.445	419096	15.892
	LOWER LIMIT	216595	10.798	141873	13.445	104774	14.892
	EPA SAMPLE NO.						
01	PB146986BS	509891	11.30	303639	13.95	231074	15.39

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT UPPER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BL	SDG No.:	N4189
Lab Sample ID:	PB146986BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129869.D	1	08/13/22 08:50	08/18/22 11:22	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	170	U	73.9	170	ug/Kg
208-96-8	Acenaphthylene	170	U	68.7	170	ug/Kg
83-32-9	Acenaphthene	170	U	78.8	170	ug/Kg
86-73-7	Fluorene	170	U	78.7	170	ug/Kg
85-01-8	Phenanthrene	170	U	83.5	170	ug/Kg
120-12-7	Anthracene	170	U	83.9	170	ug/Kg
206-44-0	Fluoranthene	170	U	79.7	170	ug/Kg
129-00-0	Pyrene	170	U	74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	170	U	86.7	170	ug/Kg
218-01-9	Chrysene	170	U	85.4	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	170	U	69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	170	U	73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	170	U	67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	170	U	100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	170	U	100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	170	U	96.8	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	79.6		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	79.9		30 - 103	80%	SPK: 100
1718-51-0	Terphenyl-d14	69.3		21 - 107	69%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	155000	6.793			
1146-65-2	Naphthalene-d8	618000	8.075			
15067-26-2	Acenaphthene-d10	324000	9.828			
1517-22-2	Phenanthrene-d10	575000	11.322			
1719-03-5	Chrysene-d12	481000	13.969			
1520-96-3	Perylene-d12	448000	15.433			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BL	SDG No.:	N4189
Lab Sample ID:	PB146986BL	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129869.D	1	08/13/22 08:50	08/18/22 11:22	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BS	SDG No.:	N4189
Lab Sample ID:	PB146986BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129969.D	1	08/13/22 08:50	08/24/22 12:18	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1300		73.9	170	ug/Kg
208-96-8	Acenaphthylene	1300		68.7	170	ug/Kg
83-32-9	Acenaphthene	1300		78.9	170	ug/Kg
86-73-7	Fluorene	1300		78.8	170	ug/Kg
85-01-8	Phenanthrene	1300		83.6	170	ug/Kg
120-12-7	Anthracene	1400		84.0	170	ug/Kg
206-44-0	Fluoranthene	1300		79.8	170	ug/Kg
129-00-0	Pyrene	1500		74.2	170	ug/Kg
56-55-3	Benzo(a)anthracene	1300		86.8	170	ug/Kg
218-01-9	Chrysene	1300		85.5	170	ug/Kg
205-99-2	Benzo(b)fluoranthene	1300		69.0	170	ug/Kg
207-08-9	Benzo(k)fluoranthene	1400		73.6	170	ug/Kg
50-32-8	Benzo(a)pyrene	1500		67.7	170	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1700		100	170	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1800		100	170	ug/Kg
191-24-2	Benzo(g,h,i)perylene	1900		96.9	170	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.2		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	78.8		30 - 103	79%	SPK: 100
1718-51-0	Terphenyl-d14	91.7		21 - 107	92%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	136000	6.769			
1146-65-2	Naphthalene-d8	565000	8.051			
15067-26-2	Acenaphthene-d10	300000	9.81			
1517-22-2	Phenanthrene-d10	510000	11.298			
1719-03-5	Chrysene-d12	304000	13.945			
1520-96-3	Perylene-d12	231000	15.392			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146986BS	SDG No.:	N4189
Lab Sample ID:	PB146986BS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	0
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129969.D	1	08/13/22 08:50	08/24/22 12:18	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MS	SDG No.:	N4189
Lab Sample ID:	N4189-17MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129860.D	1	08/13/22 08:50	08/17/22 23:55	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		77.1	180	ug/Kg
208-96-8	Acenaphthylene	1600		71.7	180	ug/Kg
83-32-9	Acenaphthene	1600		82.3	180	ug/Kg
86-73-7	Fluorene	1600		82.2	180	ug/Kg
85-01-8	Phenanthrene	1600		87.2	180	ug/Kg
120-12-7	Anthracene	1600		87.6	180	ug/Kg
206-44-0	Fluoranthene	1500		83.3	180	ug/Kg
129-00-0	Pyrene	1800		77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	1600		90.6	180	ug/Kg
218-01-9	Chrysene	1600		89.2	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	1500		72.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	1500		76.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	1700		70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1800		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1900		110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	2000		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.5		27 - 109	81%	SPK: 100
321-60-8	2-Fluorobiphenyl	80.2		30 - 103	80%	SPK: 100
1718-51-0	Terphenyl-d14	91.2		21 - 107	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	139000	6.81			
1146-65-2	Naphthalene-d8	550000	8.092			
15067-26-2	Acenaphthene-d10	281000	9.851			
1517-22-2	Phenanthrene-d10	455000	11.339			
1719-03-5	Chrysene-d12	243000	13.992			
1520-96-3	Perylene-d12	244000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MS	SDG No.:	N4189
Lab Sample ID:	N4189-17MS	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129860.D	1	08/13/22 08:50	08/17/22 23:55	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MSD	SDG No.:	N4189
Lab Sample ID:	N4189-17MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129861.D	1	08/13/22 08:50	08/18/22 00:26	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
91-20-3	Naphthalene	1600		77.1	180	ug/Kg
208-96-8	Acenaphthylene	1600		71.6	180	ug/Kg
83-32-9	Acenaphthene	1600		82.3	180	ug/Kg
86-73-7	Fluorene	1600		82.2	180	ug/Kg
85-01-8	Phenanthrene	1600		87.2	180	ug/Kg
120-12-7	Anthracene	1600		87.6	180	ug/Kg
206-44-0	Fluoranthene	1400		83.2	180	ug/Kg
129-00-0	Pyrene	1800		77.4	180	ug/Kg
56-55-3	Benzo(a)anthracene	1600		90.5	180	ug/Kg
218-01-9	Chrysene	1600		89.2	180	ug/Kg
205-99-2	Benzo(b)fluoranthene	1500		72.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	1500		76.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	1700		70.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1900		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1900		110	180	ug/Kg
191-24-2	Benzo(g,h,i)perylene	2000		100	180	ug/Kg
SURROGATES						
4165-60-0	Nitrobenzene-d5	80.2		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	82.1		30 - 103	82%	SPK: 100
1718-51-0	Terphenyl-d14	90.7		21 - 107	91%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	138000	6.81			
1146-65-2	Naphthalene-d8	544000	8.098			
15067-26-2	Acenaphthene-d10	271000	9.851			
1517-22-2	Phenanthrene-d10	441000	11.339			
1719-03-5	Chrysene-d12	226000	13.986			
1520-96-3	Perylene-d12	242000	15.451			

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14MSD	SDG No.:	N4189
Lab Sample ID:	N4189-17MSD	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.4
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-PAH
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF129861.D	1	08/13/22 08:50	08/18/22 00:26	PB146986

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
Last Update : Mon Aug 15 02:28:31 2022
Response Via : Initial Calibration

Calibration Files
5 =BF129761.D 10 =BF129762.D 20 =BF129763.D 40 =BF129764.D 50 =BF129765.D 60 =BF129766.D 80 =BF129767.D

		Compound	5	10	20	40	50	60	80	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------								
2)		1,4-Dioxane	0.530	0.525	0.524	0.468	0.482	0.491	0.469	0.498	5.48
3)		Pyridine	1.196	1.381	1.402	1.227	1.278	1.366	1.279	1.304	6.15
4)		n-Nitrosodimet...	0.611	0.611	0.607	0.583	0.602	0.609	0.585	0.601	2.06
5)	S	2-Fluorophenol	1.334	1.333	1.292	1.114	1.163	1.155	1.064	1.208	9.14
6)		Aniline	1.899	1.948	1.843	1.584	1.652	1.638	1.505	1.724	9.91
7)	S	Phenol-d6	1.699	1.697	1.609	1.387	1.439	1.433	1.326	1.513	10.11
8)		2-Chlorophenol	1.479	1.476	1.429	1.250	1.293	1.289	1.196	1.345	8.55
9)		Benzaldehyde		1.103	0.999	0.809	0.812	0.742		0.893	16.95
10)	C	Phenol	1.804	1.876	1.782	1.526	1.601	1.572	1.455	1.659	9.64
11)		bis(2-Chloroet...	1.322	1.388	1.323	1.177	1.229	1.221	1.161	1.260	6.75
12)		1,3-Dichlorobe...	1.583	1.583	1.529	1.346	1.408	1.399	1.313	1.452	7.73
13)	C	1,4-Dichlorobe...	1.623	1.661	1.572	1.361	1.428	1.418	1.321	1.483	9.03
14)		1,2-Dichlorobe...	1.528	1.563	1.460	1.269	1.319	1.299	1.207	1.378	10.03
15)		Benzyl Alcohol	1.228	1.289	1.231	1.051	1.100	1.098	0.997	1.142	9.46
16)		2,2'-oxybis(1-...	1.856	1.936	1.807	1.568	1.614	1.584	1.453	1.688	10.53
17)		2-Methylphenol	1.183	1.198	1.140	0.992	1.042	1.039	0.965	1.080	8.64
18)		Hexachloroethane	0.601	0.596	0.583	0.515	0.541	0.550	0.513	0.557	6.60
19)	P	n-Nitroso-di-n...	1.021	1.072	1.019	0.897	0.930	0.917	0.837	0.956	8.69
20)		3+4-Methylphenols	1.606	1.652	1.565	1.342	1.397	1.353	1.232	1.449	10.91
21)	I	Naphthalene-d8	----------ISTD----------								
22)		Acetophenone	0.520	0.522	0.511	0.445	0.474	0.470	0.469	0.487	6.21
23)	S	Nitrobenzene-d5	0.384	0.393	0.390	0.344	0.367	0.369	0.368	0.374	4.54
24)		Nitrobenzene	0.397	0.399	0.389	0.348	0.366	0.370	0.368	0.377	4.98
25)		Isophorone	0.659	0.674	0.664	0.595	0.634	0.636	0.639	0.643	4.05
26)	C	2-Nitrophenol	0.178	0.192	0.193	0.174	0.187	0.187	0.186	0.185	3.75
27)		2,4-Dimethylph...	0.275	0.284	0.275	0.248	0.262	0.259	0.259	0.266	4.66
28)		bis(2-Chloroet...	0.389	0.393	0.391	0.354	0.362	0.373	0.367	0.375	4.16
29)	C	2,4-Dichloroph...	0.294	0.304	0.306	0.273	0.285	0.290	0.283	0.291	4.09
30)		1,2,4-Trichlor...	0.323	0.326	0.321	0.282	0.297	0.298	0.298	0.307	5.50
31)		Naphthalene	1.123	1.131	1.117	0.955	1.007	1.000	0.987	1.046	7.17
32)		Benzoic acid		0.078	0.093	0.109	0.121	0.132	0.145	0.113	22.06
33)		4-Chloroaniline	0.429	0.441	0.435	0.381	0.406	0.397	0.390	0.411	5.70
34)	C	Hexachlorobuta...	0.193	0.193	0.195	0.174	0.185	0.185	0.182	0.187	3.98
35)		Caprolactam	0.092	0.093	0.095	0.084	0.089	0.090	0.090	0.090	3.74
36)	C	4-Chloro-3-met...	0.322	0.332	0.327	0.289	0.307	0.311	0.307	0.313	4.66
37)		2-Methylnaphth...	0.721	0.741	0.722	0.634	0.676	0.662	0.650	0.686	6.00
38)		1-Methylnaphth...	0.717	0.728	0.704	0.610	0.644	0.639	0.628	0.667	7.15

Response Factor Report BNA_F

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

39)	I	Acenaphthene-d10	----------ISTD----------								
40)		1,2,4,5-Tetrac...	0.579	0.596	0.585	0.512	0.536	0.551	0.535	0.556	5.55
41)	P	Hexachlorocycl...		0.040	0.079	0.119	0.129	0.158	0.179	0.117	43.53
42)	S	2,4,6-Tribromo...	0.208	0.209	0.211	0.188	0.195	0.197	0.198	0.201	4.33
43)	C	2,4,6-Trichlor...	0.357	0.373	0.377	0.339	0.357	0.368	0.358	0.361	3.55
44)		2,4,5-Trichlor...	0.380	0.395	0.408	0.370	0.385	0.398	0.385	0.389	3.25
45)	S	2-Fluorobiphenyl	1.453	1.485	1.424	1.198	1.243	1.234	1.181	1.317	9.98
46)		1,1'-Biphenyl	1.639	1.655	1.622	1.398	1.445	1.456	1.421	1.519	7.46
47)		2-Chloronaphth...	1.274	1.305	1.280	1.101	1.163	1.156	1.137	1.202	6.78
48)		2-Nitroaniline	0.378	0.398	0.403	0.357	0.375	0.376	0.372	0.380	4.12
49)		Acenaphthylene	1.961	1.996	1.976	1.680	1.743	1.735	1.669	1.823	8.09
50)		Dimethylphthalate	1.525	1.551	1.508	1.319	1.372	1.392	1.368	1.434	6.40
51)		2,6-Dinitrotol...	0.314	0.330	0.333	0.293	0.309	0.302	0.296	0.311	5.08
52)	C	Acenaphthene	1.182	1.212	1.173	1.019	1.059	1.063	1.034	1.106	7.20
53)		3-Nitroaniline	0.355	0.368	0.364	0.321	0.336	0.334	0.328	0.344	5.34
54)	P	2,4-Dinitrophenol		0.084	0.111	0.122	0.130	0.143		0.118	18.98
55)		Dibenzofuran	1.831	1.851	1.800	1.501	1.580	1.568	1.500	1.662	9.54
56)	P	4-Nitrophenol	0.110	0.140	0.160	0.152	0.162	0.176	0.172	0.153	14.73
57)		2,4-Dinitrotol...	0.428	0.439	0.442	0.365	0.395	0.388	0.369	0.404	8.00
58)		Fluorene	1.530	1.540	1.492	1.256	1.315	1.317	1.263	1.387	9.20
59)		2,3,4,6-Tetrac...	0.264	0.281	0.297	0.276	0.286	0.295	0.298	0.285	4.41
60)		Diethylphthalate	1.543	1.570	1.546	1.305	1.374	1.365	1.304	1.430	8.30
61)		4-Chlorophenyl...	0.664	0.687	0.661	0.570	0.595	0.600	0.582	0.623	7.48
62)		4-Nitroaniline	0.358	0.372	0.374	0.319	0.345	0.337	0.324	0.347	6.31
63)		Azobenzene	1.435	1.493	1.461	1.255	1.323	1.317	1.282	1.366	6.93
64)	I	Phenanthrene-d10	----------ISTD----------								
65)		4,6-Dinitro-2-...	0.088	0.109	0.122	0.119	0.123	0.132	0.130	0.117	12.80
66)	c	n-Nitrosodiphe...	0.694	0.726	0.712	0.619	0.648	0.673	0.652	0.675	5.67
67)		4-Bromophenyl-...	0.237	0.248	0.243	0.217	0.228	0.238	0.231	0.234	4.40
68)		Hexachlorobenzene	0.258	0.265	0.269	0.234	0.246	0.255	0.248	0.254	4.73
69)		Atrazine	0.222	0.225	0.221	0.188	0.200	0.202	0.192	0.207	7.36
70)	C	Pentachlorophenol		0.049	0.060	0.066	0.070	0.078		0.065	16.99
71)		Phenanthrene	1.196	1.220	1.182	1.020	1.078	1.086	1.036	1.117	7.26
72)		Anthracene	1.194	1.211	1.185	1.018	1.065	1.088	1.015	1.111	7.59
73)		Carbazole	1.104	1.105	1.086	0.910	0.977	0.965	0.911	1.008	8.73
74)		Di-n-butylphth...	1.397	1.424	1.403	1.179	1.257	1.252	1.173	1.298	8.35
75)	C	Fluoranthene	1.273	1.281	1.246	1.026	1.105	1.066	1.004	1.143	10.55
76)	I	Chrysene-d12	----------ISTD----------								
77)		Benzidine		0.653	0.567	0.483	0.483	0.461		0.529	15.18
78)		Pyrene	1.622	1.724	1.747	1.706	1.702	1.855	1.810	1.738	4.40
79)	S	Terphenyl-d14	1.168	1.235	1.218	1.161	1.154	1.266	1.211	1.202	3.52
80)		Butylbenzylpht...	0.715	0.741	0.757	0.700	0.739	0.757	0.739	0.735	2.87
81)		Benzo(a)anthra...	1.431	1.456	1.429	1.267	1.338	1.362	1.347	1.376	4.85
82)		3,3'-Dichlorob...	0.481	0.489	0.465	0.382	0.399	0.396	0.371	0.426	11.79
83)		Chrysene	1.360	1.374	1.330	1.179	1.261	1.262	1.249	1.288	5.41
84)		Bis(2-ethylhex...	0.888	0.925	0.897	0.797	0.864	0.875	0.862	0.873	4.53
85)	c	Di-n-octyl pht...	1.213	1.213	1.170	1.087	1.161	1.268	1.319	1.204	6.29

Method Path : Z:\svoasrv\HPCHEM1\BNA_F\Methods\
Method File : 8270-BF081422.M

86) I	Perylene-d12	-----------------ISTD---------------------								
87)	Indeno(1,2,3-c...	1.118	1.230	1.342	1.389	1.401	1.555	1.577	1.373	11.98
88)	Benzo(b)fluora...	1.444	1.486	1.451	1.285	1.372	1.315	1.234	1.370	6.95
89)	Benzo(k)fluora...	1.393	1.437	1.440	1.141	1.261	1.266	1.257	1.313	8.53
90) C	Benzo(a)pyrene	1.116	1.135	1.122	0.993	1.047	1.082	1.054	1.078	4.70
91)	Dibenzo(a,h)an...	0.908	0.997	1.124	1.161	1.163	1.278	1.300	1.133	12.48
92)	Benzo(g,h,i)pe...	0.856	0.985	1.105	1.163	1.175	1.303	1.325	1.130	14.78

(#) = Out of Range

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/17/2022 09:42

Lab File ID: BF129835.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.179		-2.4	
Phenol-d6	1.513	1.465		-3.2	
Nitrobenzene-d5	0.374	0.366		-2.1	
Naphthalene	1.046	1.012		-3.3	
2-Fluorobiphenyl	1.317	1.248		-5.2	
Acenaphthylene	1.823	1.757		-3.6	
Acenaphthene	1.106	1.077		-2.6	20.0
Fluorene	1.387	1.352		-2.5	
2,4,6-Tribromophenol	0.201	0.207		3.0	
Phenanthrene	1.117	1.094		-2.1	
Anthracene	1.111	1.082		-2.6	
Fluoranthene	1.143	1.125		-1.7	20.0
Pyrene	1.738	1.756		1.0	
Terphenyl-d14	1.202	1.211		0.7	
Benzo(a)anthracene	1.376	1.351		-1.8	
Chrysene	1.288	1.237		-4.0	
Benzo(b)fluoranthene	1.370	1.290		-5.8	
Benzo(k)fluoranthene	1.313	1.300		-1.0	
Benzo(a)pyrene	1.078	1.049		-2.7	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.458		6.2	
Dibenzo(a,h)anthracene	1.133	1.217		7.4	
Benzo(g,h,i)perylene	1.130	1.211		7.2	

All other compounds must meet a minimum RRF of 0.010.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/17/2022 16:17

Lab File ID: BF129846.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.241		2.7	
Phenol-d6	1.513	1.502		-0.7	
Nitrobenzene-d5	0.374	0.371		-0.8	
Naphthalene	1.046	1.024		-2.1	
2-Fluorobiphenyl	1.317	1.293		-1.8	
Acenaphthylene	1.823	1.812		-0.6	
Acenaphthene	1.106	1.074		-2.9	20.0
Fluorene	1.387	1.347		-2.9	
2,4,6-Tribromophenol	0.201	0.188		-6.5	
Phenanthrene	1.117	1.112		-0.4	
Anthracene	1.111	1.086		-2.3	
Fluoranthene	1.143	1.076		-5.9	20.0
Pyrene	1.738	1.875		7.9	
Terphenyl-d14	1.202	1.210		0.7	
Benzo(a)anthracene	1.376	1.337		-2.8	
Chrysene	1.288	1.282		-0.5	
Benzo(b)fluoranthene	1.370	1.166		-14.9	
Benzo(k)fluoranthene	1.313	1.203		-8.4	
Benzo(a)pyrene	1.078	1.026		-4.8	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.606		17.0	
Dibenzo(a,h)anthracene	1.133	1.290		13.9	
Benzo(g,h,i)perylene	1.130	1.363		20.6	

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/18/2022 10:50

Lab File ID: BF129868.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.211		0.2	
Phenol-d6	1.513	1.486		-1.8	
Nitrobenzene-d5	0.374	0.372		-0.5	
Naphthalene	1.046	1.022		-2.3	
2-Fluorobiphenyl	1.317	1.303		-1.1	
Acenaphthylene	1.823	1.792		-1.7	
Acenaphthene	1.106	1.093		-1.2	20.0
Fluorene	1.387	1.343		-3.2	
2,4,6-Tribromophenol	0.201	0.196		-2.5	
Phenanthrene	1.117	1.104		-1.2	
Anthracene	1.111	1.076		-3.2	
Fluoranthene	1.143	1.125		-1.6	20.0
Pyrene	1.738	1.698		-2.3	
Terphenyl-d14	1.202	1.154		-4.0	
Benzo(a)anthracene	1.376	1.333		-3.1	
Chrysene	1.288	1.243		-3.5	
Benzo(b)fluoranthene	1.370	1.387		1.2	
Benzo(k)fluoranthene	1.313	1.187		-9.7	
Benzo(a)pyrene	1.078	1.051		-2.5	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.467		6.8	
Dibenzo(a,h)anthracene	1.133	1.223		7.9	
Benzo(g,h,i)perylene	1.130	1.236		9.4	

All other compounds must meet a minimum RRF of 0.010.

Form VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Instrument ID: BNA_F Calibration Date/Time: 08/24/2022 11:09

Lab File ID: BF129967.D Init. Calib. Date(s): 08/14/2022 08/14/2022

EPA Sample No.: SSTDCCC040 Init. Calib. Time(s): 14:06 17:15

GC Column: DB-UI ID: 0.18 (mm)

COMPOUND	RRF	RRF040	MIN RRF	%D	MAX%D
2-Fluorophenol	1.208	1.201		-0.6	
Phenol-d6	1.513	1.485		-1.9	
Nitrobenzene-d5	0.374	0.382		2.1	
Naphthalene	1.046	1.024		-2.1	
2-Fluorobiphenyl	1.317	1.292		-1.9	
Acenaphthylene	1.823	1.773		-2.7	
Acenaphthene	1.106	1.076		-2.7	20.0
Fluorene	1.387	1.365		-1.6	
2,4,6-Tribromophenol	0.201	0.197		-2.0	
Phenanthrene	1.117	1.107		-0.9	
Anthracene	1.111	1.102		-0.8	
Fluoranthene	1.143	1.145		0.2	20.0
Pyrene	1.738	1.743		0.3	
Terphenyl-d14	1.202	1.224		1.8	
Benzo(a)anthracene	1.376	1.340		-2.6	
Chrysene	1.288	1.272		-1.2	
Benzo(b)fluoranthene	1.370	1.336		-2.5	
Benzo(k)fluoranthene	1.313	1.275		-2.9	
Benzo(a)pyrene	1.078	1.061		-1.6	20.0
Indeno(1,2,3-cd)pyrene	1.373	1.518		10.6	
Dibenzo(a,h)anthracene	1.133	1.256		10.9	
Benzo(g,h,i)perylene	1.130	1.277		13.0	

All other compounds must meet a minimum RRF of 0.010.

Form VII SV-1

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID :								
			Total Concentration:	**0.000**				

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088977.D	1	08/15/22 08:55	08/15/22 16:48	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.6	U	3.30	18.6	ug/kg
11104-28-2	Aroclor-1221	18.6	U	5.10	18.6	ug/kg
11141-16-5	Aroclor-1232	18.6	U	4.30	18.6	ug/kg
53469-21-9	Aroclor-1242	18.6	U	2.60	18.6	ug/kg
12672-29-6	Aroclor-1248	18.6	U	3.30	18.6	ug/kg
11097-69-1	Aroclor-1254	18.6	U	4.60	18.6	ug/kg
37324-23-5	Aroclor-1262	18.6	U	3.60	18.6	ug/kg
11100-14-4	Aroclor-1268	18.6	U	6.30	18.6	ug/kg
11096-82-5	Aroclor-1260	18.6	U	3.50	18.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.8		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.5		32 - 176	92%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088978.D	1	08/15/22 08:55	08/15/22 17:05	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.6	U	3.30	18.6	ug/kg
11104-28-2	Aroclor-1221	18.6	U	5.10	18.6	ug/kg
11141-16-5	Aroclor-1232	18.6	U	4.30	18.6	ug/kg
53469-21-9	Aroclor-1242	18.6	U	2.60	18.6	ug/kg
12672-29-6	Aroclor-1248	18.6	U	3.30	18.6	ug/kg
11097-69-1	Aroclor-1254	18.6	U	4.60	18.6	ug/kg
37324-23-5	Aroclor-1262	18.6	U	3.60	18.6	ug/kg
11100-14-4	Aroclor-1268	18.6	U	6.30	18.6	ug/kg
11096-82-5	Aroclor-1260	18.6	U	3.50	18.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.9		40 - 162	105%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.3		32 - 176	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088979.D	1	08/15/22 08:55	08/15/22 17:23	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.1	U	3.40	19.1	ug/kg
11104-28-2	Aroclor-1221	19.1	U	5.30	19.1	ug/kg
11141-16-5	Aroclor-1232	19.1	U	4.40	19.1	ug/kg
53469-21-9	Aroclor-1242	19.1	U	2.70	19.1	ug/kg
12672-29-6	Aroclor-1248	19.1	U	3.40	19.1	ug/kg
11097-69-1	Aroclor-1254	19.1	U	4.70	19.1	ug/kg
37324-23-5	Aroclor-1262	19.1	U	3.70	19.1	ug/kg
11100-14-4	Aroclor-1268	19.1	U	6.40	19.1	ug/kg
11096-82-5	Aroclor-1260	19.1	U	3.60	19.1	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.9		40 - 162	105%	SPK: 20
2051-24-3	Decachlorobiphenyl	17.4		32 - 176	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088980.D	1	08/15/22 08:55	08/15/22 17:40	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.6	U	3.20	17.6	ug/kg
11104-28-2	Aroclor-1221	17.6	U	4.90	17.6	ug/kg
11141-16-5	Aroclor-1232	17.6	U	4.10	17.6	ug/kg
53469-21-9	Aroclor-1242	17.6	U	2.50	17.6	ug/kg
12672-29-6	Aroclor-1248	17.6	U	3.10	17.6	ug/kg
11097-69-1	Aroclor-1254	17.6	U	4.40	17.6	ug/kg
37324-23-5	Aroclor-1262	17.6	U	3.50	17.6	ug/kg
11100-14-4	Aroclor-1268	17.6	U	5.90	17.6	ug/kg
11096-82-5	Aroclor-1260	17.6	U	3.40	17.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.8		40 - 162	104%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.3		32 - 176	106%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088981.D	1	08/15/22 08:55	08/15/22 17:57	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.0	U	3.20	18.0	ug/kg
11104-28-2	Aroclor-1221	18.0	U	5.00	18.0	ug/kg
11141-16-5	Aroclor-1232	18.0	U	4.20	18.0	ug/kg
53469-21-9	Aroclor-1242	18.0	U	2.60	18.0	ug/kg
12672-29-6	Aroclor-1248	18.0	U	3.20	18.0	ug/kg
11097-69-1	Aroclor-1254	18.0	U	4.50	18.0	ug/kg
37324-23-5	Aroclor-1262	18.0	U	3.50	18.0	ug/kg
11100-14-4	Aroclor-1268	18.0	U	6.10	18.0	ug/kg
11096-82-5	Aroclor-1260	18.0	U	3.40	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.6		40 - 162	103%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.4		32 - 176	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088982.D	1	08/15/22 08:55	08/15/22 18:15	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.5	U	3.10	17.5	ug/kg
11104-28-2	Aroclor-1221	17.5	U	4.80	17.5	ug/kg
11141-16-5	Aroclor-1232	17.5	U	4.10	17.5	ug/kg
53469-21-9	Aroclor-1242	17.5	U	2.50	17.5	ug/kg
12672-29-6	Aroclor-1248	17.5	U	3.10	17.5	ug/kg
11097-69-1	Aroclor-1254	17.5	U	4.30	17.5	ug/kg
37324-23-5	Aroclor-1262	17.5	U	3.40	17.5	ug/kg
11100-14-4	Aroclor-1268	17.5	U	5.90	17.5	ug/kg
11096-82-5	Aroclor-1260	17.5	U	3.30	17.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	23.0		40 - 162	115%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.4		32 - 176	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088983.D	1	08/15/22 08:55	08/15/22 18:32	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.0	U	3.20	18.0	ug/kg
11104-28-2	Aroclor-1221	18.0	U	5.00	18.0	ug/kg
11141-16-5	Aroclor-1232	18.0	U	4.20	18.0	ug/kg
53469-21-9	Aroclor-1242	18.0	U	2.60	18.0	ug/kg
12672-29-6	Aroclor-1248	18.0	U	3.20	18.0	ug/kg
11097-69-1	Aroclor-1254	18.0	U	4.50	18.0	ug/kg
37324-23-5	Aroclor-1262	18.0	U	3.50	18.0	ug/kg
11100-14-4	Aroclor-1268	18.0	U	6.10	18.0	ug/kg
11096-82-5	Aroclor-1260	18.0	U	3.40	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.7		40 - 162	103%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.1		32 - 176	96%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088989.D	1	08/15/22 08:55	08/15/22 20:46	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.2	U	3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.70	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	19.2	U	3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.8		40 - 162	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.2		32 - 176	91%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088990.D	1	08/15/22 08:55	08/15/22 21:03	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.8	U	3.20	17.8	ug/kg
11104-28-2	Aroclor-1221	17.8	U	4.90	17.8	ug/kg
11141-16-5	Aroclor-1232	17.8	U	4.10	17.8	ug/kg
53469-21-9	Aroclor-1242	17.8	U	2.50	17.8	ug/kg
12672-29-6	Aroclor-1248	17.8	U	3.10	17.8	ug/kg
11097-69-1	Aroclor-1254	17.8	U	4.40	17.8	ug/kg
37324-23-5	Aroclor-1262	17.8	U	3.50	17.8	ug/kg
11100-14-4	Aroclor-1268	17.8	U	6.00	17.8	ug/kg
11096-82-5	Aroclor-1260	17.8	U	3.40	17.8	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.9		40 - 162	114%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.5		32 - 176	117%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088991.D	1	08/15/22 08:55	08/15/22 21:21	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.7	U	3.20	17.7	ug/kg
11104-28-2	Aroclor-1221	17.7	U	4.90	17.7	ug/kg
11141-16-5	Aroclor-1232	17.7	U	4.10	17.7	ug/kg
53469-21-9	Aroclor-1242	17.7	U	2.50	17.7	ug/kg
12672-29-6	Aroclor-1248	17.7	U	3.10	17.7	ug/kg
11097-69-1	Aroclor-1254	17.7	U	4.40	17.7	ug/kg
37324-23-5	Aroclor-1262	17.7	U	3.50	17.7	ug/kg
11100-14-4	Aroclor-1268	17.7	U	6.00	17.7	ug/kg
11096-82-5	Aroclor-1260	17.7	U	3.40	17.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	24.0		40 - 162	120%	SPK: 20
2051-24-3	Decachlorobiphenyl	26.8		32 - 176	134%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
I.BLK-PO088545.D	PIBLK-PO088545.D	Tetrachloro-m-xylene	1	20	18.8	94		60	140
		Decachlorobiphenyl	1	20	19.0	95		60	140
		Tetrachloro-m-xylene	2	20	18.6	93		60	140
		Decachlorobiphenyl	2	20	18.6	93		60	140
I.BLK-PO088973.D	PIBLK-PO088973.D	Tetrachloro-m-xylene	1	20	20.1	101		60	140
		Decachlorobiphenyl	1	20	21.3	106		60	140
		Tetrachloro-m-xylene	2	20	18.5	93		60	140
		Decachlorobiphenyl	2	20	18.5	92		60	140
PB147017BL	PB147017BL	Tetrachloro-m-xylene	1	20	20.4	102		40	162
		Decachlorobiphenyl	1	20	22.7	113		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	19.6	98		32	176
PB147017BS	PB147017BS	Tetrachloro-m-xylene	1	20	20.1	100		40	162
		Decachlorobiphenyl	1	20	22.1	111		32	176
		Tetrachloro-m-xylene	2	20	17.1	85		40	162
		Decachlorobiphenyl	2	20	19.1	95		32	176
N4189-01	SB18	Tetrachloro-m-xylene	1	20	20.8	104		40	162
		Decachlorobiphenyl	1	20	18.5	92		32	176
		Tetrachloro-m-xylene	2	20	19.2	96		40	162
		Decachlorobiphenyl	2	20	15.9	80		32	176
N4189-03	SB19	Tetrachloro-m-xylene	1	20	20.9	105		40	162
		Decachlorobiphenyl	1	20	18.3	91		32	176
		Tetrachloro-m-xylene	2	20	19.4	97		40	162
		Decachlorobiphenyl	2	20	16.4	82		32	176
N4189-05	SB20	Tetrachloro-m-xylene	1	20	20.9	105		40	162
		Decachlorobiphenyl	1	20	17.4	87		32	176
		Tetrachloro-m-xylene	2	20	19.1	95		40	162
		Decachlorobiphenyl	2	20	14.7	73		32	176
N4189-07	SB15	Tetrachloro-m-xylene	1	20	20.8	104		40	162
		Decachlorobiphenyl	1	20	21.3	106		32	176
		Tetrachloro-m-xylene	2	20	19.3	96		40	162
		Decachlorobiphenyl	2	20	18.2	91		32	176
N4189-09	SB16	Tetrachloro-m-xylene	1	20	20.6	103		40	162
		Decachlorobiphenyl	1	20	19.4	97		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	17.4	87		32	176
N4189-11	SB17	Tetrachloro-m-xylene	1	20	23.0	115		40	162
		Decachlorobiphenyl	1	20	23.4	117		32	176
		Tetrachloro-m-xylene	2	20	21.2	106		40	162
		Decachlorobiphenyl	2	20	20.0	100		32	176
N4189-13	SB13	Tetrachloro-m-xylene	1	20	20.7	103		40	162
		Decachlorobiphenyl	1	20	19.1	96		32	176
		Tetrachloro-m-xylene	2	20	19.1	95		40	162

Surrogate Summary

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Company

Analytical Method: 8082A

Lab Sample ID	Client ID	Parameter	Column	Spike	Result	Rec	Qual	Limits Low	Limits High
N4189-13	SB13	Decachlorobiphenyl	2	20	16.6	83		32	176
I.BLK-PO088988.D	PIBLK-PO088988.D	Tetrachloro-m-xylene	1	20	20.3	102		60	140
		Decachlorobiphenyl	1	20	21.6	108		60	140
		Tetrachloro-m-xylene	2	20	18.8	94		60	140
		Decachlorobiphenyl	2	20	18.9	94		60	140
N4189-15	SB12	Tetrachloro-m-xylene	1	20	18.8	94		40	162
		Decachlorobiphenyl	1	20	18.2	91		32	176
		Tetrachloro-m-xylene	2	20	17.4	87		40	162
		Decachlorobiphenyl	2	20	15.9	80		32	176
N4189-17	SB14	Tetrachloro-m-xylene	1	20	22.9	114		40	162
		Decachlorobiphenyl	1	20	23.5	117		32	176
		Tetrachloro-m-xylene	2	20	21.1	106		40	162
		Decachlorobiphenyl	2	20	20.2	101		32	176
N4189-19	SB11	Tetrachloro-m-xylene	1	20	24.0	120		40	162
		Decachlorobiphenyl	1	20	26.8	134		32	176
		Tetrachloro-m-xylene	2	20	21.5	108		40	162
		Decachlorobiphenyl	2	20	21.8	109		32	176
N4200-10MS	S5MS	Tetrachloro-m-xylene	1	20	22.0	110		40	162
		Decachlorobiphenyl	1	20	20.3	101		32	176
		Tetrachloro-m-xylene	2	20	18.6	93		40	162
		Decachlorobiphenyl	2	20	17.1	86		32	176
N4200-10MSD	S5MSD	Tetrachloro-m-xylene	1	20	21.8	109		40	162
		Decachlorobiphenyl	1	20	20.1	100		32	176
		Tetrachloro-m-xylene	2	20	18.4	92		40	162
		Decachlorobiphenyl	2	20	16.9	85		32	176
I.BLK-PO089003.D	PIBLK-PO089003.D	Tetrachloro-m-xylene	1	20	20.7	104		60	140
		Decachlorobiphenyl	1	20	22.1	111		60	140
		Tetrachloro-m-xylene	2	20	18.9	95		60	140
		Decachlorobiphenyl	2	20	19.0	95		60	140

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PO088997.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**S5MS**											
N4200-10MS	AR1016	188.3	0	204	ug/kg	108				55	134	
	AR1260	188.3	0	178	ug/kg	95				40	175	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Matrix Spike/Matrix Spike Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **DataFile :** PO088998.D

Lab Sample ID:	Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Client Sample ID:	**S5MSD**											
N4200-10MSD	AR1016	188.4	0	202	ug/kg	107		1		55	134	20
	AR1260	188.4	0	178	ug/kg	94		1		40	175	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary

SW-846

SDG No.: N4189

Client: Louis Berger U.S., Inc., A WSP Compan

Analytical Method: 8082A **Datafile :** PO088975.D

Lab Sample ID	Parameter	Spike	Result	Units	Rec	RPD	Qual	RPD Qual	Limits Low	Limits High	RPD
PB147017BS	AR1016	166.6	154	ug/kg	92				71	120	
	AR1260	166.6	143	ug/kg	86				65	130	

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB147017BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab Sample ID: PB147017BL Lab File ID: PO088974.D

Matrix: (soil/water) Solid Extraction: (Type) SOXH

Sulfur Cleanup: (Y/N) N Date Extracted: 08/15/2022

Date Analyzed (1): 08/15/2022 Date Analyzed (2): 08/15/2022

Time Analyzed (1): 15:56 Time Analyzed (2): 15:56

Instrument ID (1): ECD_O Instrument ID (2): ECD_O

GC Column (1): ZB-MR1 ID: 0.32 (mm) GC Column (2): ZB-MR2 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED 1	DATE ANALYZED 2
PB147017BS	PB147017BS	PO088975.D	08/15/2022	08/15/2022
SB18	N4189-01	PO088977.D	08/15/2022	08/15/2022
SB19	N4189-03	PO088978.D	08/15/2022	08/15/2022
SB20	N4189-05	PO088979.D	08/15/2022	08/15/2022
SB15	N4189-07	PO088980.D	08/15/2022	08/15/2022
SB16	N4189-09	PO088981.D	08/15/2022	08/15/2022
SB17	N4189-11	PO088982.D	08/15/2022	08/15/2022
SB13	N4189-13	PO088983.D	08/15/2022	08/15/2022
SB12	N4189-15	PO088989.D	08/15/2022	08/15/2022
SB14	N4189-17	PO088990.D	08/15/2022	08/15/2022
SB11	N4189-19	PO088991.D	08/15/2022	08/15/2022
S5MS	N4200-10MS	PO088997.D	08/15/2022	08/15/2022
S5MSD	N4200-10MSD	PO088998.D	08/15/2022	08/15/2022

COMMENTS:

CALIBRATION SUMMARY

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR1 ID: 0.32 (mm)

LAB FILE ID: RT 1000 = PO088546.D RT 750 = PO088547.D

RT 500 = PO088548.D RT 250 = PO088549.D RT 050 = PO088550.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	5.62	5.62	5.62	5.62	5.62	5.62	5.52	5.72
Aroclor-1016-2	(2)	5.64	5.64	5.64	5.64	5.64	5.64	5.54	5.74
Aroclor-1016-3	(3)	5.70	5.70	5.70	5.70	5.70	5.70	5.60	5.80
Aroclor-1016-4	(4)	5.80	5.80	5.80	5.80	5.80	5.80	5.70	5.90
Aroclor-1016-5	(5)	6.10	6.10	6.10	6.10	6.10	6.10	6.00	6.20
Aroclor-1260-1	(1)	7.23	7.23	7.23	7.23	7.23	7.23	7.13	7.33
Aroclor-1260-2	(2)	7.49	7.49	7.49	7.49	7.49	7.49	7.39	7.59
Aroclor-1260-3	(3)	7.85	7.85	7.85	7.85	7.85	7.85	7.75	7.95
Aroclor-1260-4	(4)	8.07	8.07	8.08	8.07	8.07	8.07	7.97	8.17
Aroclor-1260-5	(5)	8.40	8.40	8.40	8.40	8.40	8.40	8.30	8.50
Decachlorobiphenyl		10.28	10.28	10.28	10.28	10.28	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1242-1	(1)	5.62	5.61	5.61	5.62	5.62	5.62	5.52	5.72
Aroclor-1242-2	(2)	5.64	5.64	5.64	5.64	5.64	5.64	5.54	5.74
Aroclor-1242-3	(3)	5.70	5.70	5.70	5.70	5.70	5.70	5.60	5.80
Aroclor-1242-4	(4)	5.80	5.80	5.80	5.80	5.80	5.80	5.70	5.90
Aroclor-1242-5	(5)	6.54	6.54	6.54	6.54	6.54	6.54	6.44	6.64
Decachlorobiphenyl		10.28	10.28	10.28	10.28	10.28	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1248-1	(1)	5.61	5.61	5.61	5.61	5.61	5.61	5.51	5.71
Aroclor-1248-2	(2)	5.89	5.89	5.89	5.89	5.89	5.89	5.79	5.99
Aroclor-1248-3	(3)	6.10	6.10	6.10	6.10	6.10	6.10	6.00	6.20
Aroclor-1248-4	(4)	6.50	6.50	6.50	6.50	6.50	6.50	6.40	6.60
Aroclor-1248-5	(5)	6.54	6.54	6.54	6.54	6.54	6.54	6.44	6.64
Decachlorobiphenyl		10.28	10.27	10.27	10.27	10.28	10.27	10.17	10.37
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1254-1	(1)	6.47	6.48	6.48	6.47	6.48	6.48	6.38	6.58
Aroclor-1254-2	(2)	6.69	6.69	6.70	6.69	6.69	6.70	6.60	6.80
Aroclor-1254-3	(3)	7.06	7.06	7.07	7.06	7.06	7.06	6.96	7.16
Aroclor-1254-4	(4)	7.35	7.35	7.35	7.35	7.35	7.35	7.25	7.45
Aroclor-1254-5	(5)	7.77	7.77	7.77	7.77	7.77	7.77	7.67	7.87
Decachlorobiphenyl		10.27	10.28	10.28	10.27	10.27	10.28	10.18	10.38
Tetrachloro-m-xylene		4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54
Aroclor-1268-1	(1)	8.72	8.72	8.72	8.72	8.72	8.72	8.62	8.82
Aroclor-1268-2	(2)	8.82	8.82	8.82	8.82	8.82	8.82	8.72	8.92
Aroclor-1268-3	(3)	9.05	9.05	9.05	9.05	9.05	9.05	8.95	9.15
Aroclor-1268-4	(4)	9.49	9.49	9.49	9.49	9.49	9.49	9.39	9.59
Aroclor-1268-5	(5)	9.92	9.92	9.92	9.92	9.92	9.92	9.82	10.02

RETENTION TIMES OF INITIAL CALIBRATION

Decachlorobiphenyl	10.27	10.28	10.27	10.28	10.27	10.27	10.17	10.37
Tetrachloro-m-xylene	4.44	4.44	4.44	4.44	4.44	4.44	4.34	4.54

RETENTION TIMES OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR2 ID: 0.32 (mm)

LAB FILE ID: RT 1000 = PO088546.D RT 750 = PO088547.D

RT 500 = PO088548.D RT 250 = PO088549.D RT 050 = PO088550.D

COMPOUND		RT 1000	RT 750	RT 500	RT 250	RT 050	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016-1	(1)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1016-2	(2)	4.69	4.70	4.69	4.70	4.69	4.69	4.59	4.79
Aroclor-1016-3	(3)	4.87	4.87	4.87	4.87	4.87	4.87	4.77	4.97
Aroclor-1016-4	(4)	4.91	4.91	4.91	4.91	4.91	4.91	4.81	5.01
Aroclor-1016-5	(5)	5.13	5.13	5.13	5.13	5.12	5.13	5.03	5.23
Aroclor-1260-1	(1)	6.16	6.16	6.16	6.16	6.16	6.16	6.06	6.26
Aroclor-1260-2	(2)	6.35	6.35	6.35	6.35	6.35	6.35	6.25	6.45
Aroclor-1260-3	(3)	6.50	6.50	6.50	6.50	6.50	6.50	6.40	6.60
Aroclor-1260-4	(4)	6.97	6.97	6.97	6.97	6.97	6.97	6.87	7.07
Aroclor-1260-5	(5)	7.21	7.21	7.21	7.21	7.21	7.21	7.11	7.31
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1242-1	(1)	4.68	4.68	4.68	4.68	4.68	4.68	4.58	4.78
Aroclor-1242-2	(2)	4.69	4.69	4.69	4.69	4.69	4.69	4.59	4.79
Aroclor-1242-3	(3)	4.87	4.87	4.87	4.87	4.87	4.87	4.77	4.97
Aroclor-1242-4	(4)	4.95	4.95	4.95	4.95	4.95	4.95	4.85	5.05
Aroclor-1242-5	(5)	5.48	5.48	5.48	5.48	5.48	5.48	5.38	5.58
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1248-1	(1)	4.67	4.67	4.67	4.68	4.67	4.67	4.57	4.77
Aroclor-1248-2	(2)	4.91	4.91	4.91	4.91	4.91	4.91	4.81	5.01
Aroclor-1248-3	(3)	4.95	4.95	4.95	4.95	4.95	4.95	4.85	5.05
Aroclor-1248-4	(4)	5.12	5.12	5.12	5.12	5.12	5.12	5.02	5.22
Aroclor-1248-5	(5)	5.52	5.52	5.52	5.52	5.52	5.52	5.42	5.62
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70
Aroclor-1254-1	(1)	5.48	5.47	5.48	5.47	5.47	5.47	5.37	5.57
Aroclor-1254-2	(2)	5.62	5.62	5.62	5.62	5.62	5.62	5.52	5.72
Aroclor-1254-3	(3)	6.03	6.03	6.03	6.02	6.03	6.03	5.93	6.13
Aroclor-1254-4	(4)	6.25	6.25	6.26	6.25	6.25	6.25	6.15	6.35
Aroclor-1254-5	(5)	6.67	6.67	6.67	6.67	6.67	6.67	6.57	6.77
Decachlorobiphenyl		8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene		3.60	3.60	3.60	3.59	3.60	3.60	3.50	3.70
Aroclor-1268-1	(1)	7.49	7.49	7.49	7.49	7.49	7.49	7.39	7.59
Aroclor-1268-2	(2)	7.56	7.56	7.56	7.56	7.56	7.56	7.46	7.66
Aroclor-1268-3	(3)	7.76	7.76	7.76	7.76	7.76	7.76	7.66	7.86
Aroclor-1268-4	(4)	8.05	8.05	8.05	8.05	8.05	8.05	7.95	8.15
Aroclor-1268-5	(5)	8.34	8.34	8.34	8.34	8.34	8.34	8.24	8.44

RETENTION TIMES OF INITIAL CALIBRATION

Decachlorobiphenyl	8.59	8.59	8.59	8.59	8.59	8.59	8.49	8.69
Tetrachloro-m-xylene	3.60	3.60	3.60	3.60	3.60	3.60	3.50	3.70

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 (mm)

LAB FILE ID: **CF 1000 =** PO088546.D **CF 750 =** PO088547.D

CF 500 = PO088548.D **CF 250 =** PO088549.D **CF 050 =** PO088550.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	74410158	76999701	81378446	85893704	84392420	80614886	6
Aroclor-1016-2	(2)	106766147	111128591	114767662	121367944	122674260	115340921	6
Aroclor-1016-3	(3)	66503679	69196247	73049428	77484396	75089480	72264646	6
Aroclor-1016-4	(4)	53762773	56067395	58152808	60842792	57846560	57334466	5
Aroclor-1016-5	(5)	53308161	56133272	58088698	60911900	58366420	57361690	5
Aroclor-1260-1	(1)	95293877	99293067	103477410	109099244	109568900	103346500	6
Aroclor-1260-2	(2)	108590807	113273321	118149262	124227336	126755040	118199153	6
Aroclor-1260-3	(3)	81106014	84627945	88339592	92806068	92327440	87841412	6
Aroclor-1260-4	(4)	90719421	94481180	97943918	103680276	102880620	97941083	6
Aroclor-1260-5	(5)	173597161	179171092	185025374	191052248	192141480	184197471	4
Decachlorobiphenyl		1676508350	1812552867	1854135360	2031847680	2273390200	1929686891	12
Tetrachloro-m-xylene		2488850920	2649014560	2640980380	2708686520	2999243600	2697355196	7
Aroclor-1242-1	(1)	63417845	65046469	68777980	71482312	67325560	67210033	5
Aroclor-1242-2	(2)	90253599	93474227	97580354	102193720	99031300	96506640	5
Aroclor-1242-3	(3)	56700883	58611891	61831778	64452644	60185720	60356583	5
Aroclor-1242-4	(4)	45924754	47247989	49400300	50591056	47855200	48203860	4
Aroclor-1242-5	(5)	47997818	50176325	52508154	54153040	54653280	51897723	5
Decachlorobiphenyl		1729338930	1796306587	1894685720	1984600600	2061272000	1893240767	7
Tetrachloro-m-xylene		2608880970	2618020107	2685660380	2735274440	2758859200	2681339019	3
Aroclor-1248-1	(1)	47916386	50977687	52701220	55308504	51055220	51591803	5
Aroclor-1248-2	(2)	69494758	73641845	77503570	80976456	82223420	76768010	7
Aroclor-1248-3	(3)	75562891	79958809	83778010	88216012	85480480	82599240	6
Aroclor-1248-4	(4)	82903175	86992051	91520660	95803936	91818540	89807672	6
Aroclor-1248-5	(5)	81129278	85723243	90477580	94625652	91251960	88641543	6
Decachlorobiphenyl		1733963010	1841938027	1922918420	2007494280	1990225600	1899307867	6
Tetrachloro-m-xylene		2534002400	2621576200	2690467960	2738628000	2692598800	2655454672	3
Aroclor-1254-1	(1)	81458686	87731444	91698630	98593376	97253120	91347051	8
Aroclor-1254-2	(2)	122567531	132147363	137038484	146965932	145047300	136753322	7
Aroclor-1254-3	(3)	126962787	136450267	140404066	149829688	149984100	140726182	7
Aroclor-1254-4	(4)	92735262	99243008	102687816	108685852	101873380	101045064	6
Aroclor-1254-5	(5)	97658776	104754785	107880652	113529600	108622720	106489307	6
Decachlorobiphenyl		1751438780	1877469907	1942516440	2073860360	2041414200	1937339937	7
Tetrachloro-m-xylene		2552471550	2754219653	2748982200	2839306320	2779355200	2734866985	4
Aroclor-1268-1	(1)	242060835	248246723	260677576	250612612	238483500	248016249	3

CALIBRATION FACTOR OF INITIAL CALIBRATION

Aroclor-1268-2	(2)	222381051	227855165	239501596	229637220	218060660	227487138	4
Aroclor-1268-3	(3)	191543235	197218227	207319134	201053092	182657780	195958294	5
Aroclor-1268-4	(4)	84382206	87493427	91535458	88577644	83386080	87074963	4
Aroclor-1268-5	(5)	627397663	638165431	661567956	621661948	579870700	625732740	5
Decachlorobiphenyl		3044487600	3137796147	3469962460	3278997560	3257947400	3237838233	5
Tetrachloro-m-xylene		2697938830	2743304240	3034837180	2830364360	2725796800	2806448282	5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION FACTOR OF INITIAL CALIBRATION

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Calibration Date(s):** 08/04/2022 08/05/2022

Calibration Times: 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 (mm)

LAB FILE ID: **CF 1000 =** PO088546.D **CF 750 =** PO088547.D

CF 500 = PO088548.D **CF 250 =** PO088549.D **CF 050 =** PO088550.D

COMPOUND		CF 1000	CF 750	CF 500	CF 250	CF 050	CF	% RSD
Aroclor-1016-1	(1)	34936865	36351384	37712990	38843404	38504500	37269829	4
Aroclor-1016-2	(2)	50072101	51645719	53276128	55252040	50437200	52136638	4
Aroclor-1016-3	(3)	27854299	28847231	29891934	30408156	29286020	29257528	3
Aroclor-1016-4	(4)	22243104	23376011	24562976	25659372	24770680	24122429	6
Aroclor-1016-5	(5)	30783352	32120236	33402236	34627928	32142200	32615190	4
Aroclor-1260-1	(1)	59642529	61788927	64211640	67279056	64847940	63554018	5
Aroclor-1260-2	(2)	71467229	74140892	76783170	79668088	81074320	76626740	5
Aroclor-1260-3	(3)	67530227	70048699	72477410	75050508	74099700	71841309	4
Aroclor-1260-4	(4)	57370475	59440229	61287430	64203772	62801840	61020749	4
Aroclor-1260-5	(5)	136260024	139821057	142280100	144183984	142665460	141042125	2
Decachlorobiphenyl		1035805130	1126278800	1153546520	1259362800	1484561000	1211910850	14
Tetrachloro-m-xylene		1007322830	1070927293	1071253600	1092784480	1169204600	1082298561	5
Aroclor-1242-1	(1)	29381523	30228185	31247124	32278772	30165600	30660241	4
Aroclor-1242-2	(2)	42116454	42547679	44097274	44684704	41983300	43085882	3
Aroclor-1242-3	(3)	23397724	24001829	24750140	24677188	23212160	24007808	3
Aroclor-1242-4	(4)	23971088	24831956	25952722	26053524	25255560	25212970	3
Aroclor-1242-5	(5)	30481178	31220659	32544256	33288892	31660120	31839021	3
Decachlorobiphenyl		1066097540	1101669320	1151829000	1210472720	1302965800	1166606876	8
Tetrachloro-m-xylene		1050843310	1050366467	1082673520	1092873200	1066062400	1068563779	2
Aroclor-1248-1	(1)	22094949	23256269	24292444	24388604	23371780	23480809	4
Aroclor-1248-2	(2)	33384364	35090721	36698394	38217056	36054880	35889083	5
Aroclor-1248-3	(3)	35554493	37360467	39020890	40368440	38075740	38076006	5
Aroclor-1248-4	(4)	43267182	45345179	47067418	48556056	45376780	45922523	4
Aroclor-1248-5	(5)	42231095	43868155	45439176	46033852	40731780	43660812	5
Decachlorobiphenyl		1064836920	1121702227	1165126660	1212914760	1276758000	1168267713	7
Tetrachloro-m-xylene		1009223200	1036059840	1061172800	1079100800	1020081600	1041127648	3
Aroclor-1254-1	(1)	64539145	69066125	69973928	73208916	67584100	68874443	5
Aroclor-1254-2	(2)	54944071	58911065	60151726	63491400	58602640	59220180	5
Aroclor-1254-3	(3)	88293157	94296576	94822284	97849008	89680820	92988369	4
Aroclor-1254-4	(4)	54029355	57490411	58453894	60170148	53109560	56650674	5
Aroclor-1254-5	(5)	78049111	83088767	84042800	86002276	76952260	81627043	5
Decachlorobiphenyl		1065958930	1136026293	1168855360	1227278080	1237747600	1167173253	6
Tetrachloro-m-xylene		1010455000	1081006827	1081770320	1109403840	1028159200	1062159037	4
Aroclor-1268-1	(1)	177050014	180172289	187545462	176591348	163996820	177071187	5

CALIBRATION FACTOR OF INITIAL CALIBRATION

Aroclor-1268-2	(2)	161247968	164206135	169682414	159121084	148471260	160545772	5
Aroclor-1268-3	(3)	136421124	139323091	145119706	137156112	131748800	137953767	4
Aroclor-1268-4	(4)	56981639	58501464	62027788	59481736	52403700	57879265	6
Aroclor-1268-5	(5)	414935517	421100035	434639152	399346604	369380100	407880282	6
Decachlorobiphenyl		1865818870	1911895560	2100377500	1965180680	2009857000	1970625922	5
Tetrachloro-m-xylene		1060903190	1076085747	1179314400	1086070400	1030494400	1086573627	5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Date(s) Analyzed:** 08/04/2022 08/05/2022

GC Column: ZB-MR1 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	4.65	4.55	4.75	30997000
		2	4.73	4.63	4.83	23120000
		3	4.81	4.71	4.91	70176200
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	4.81	4.71	4.91	55548600
		2	5.15	5.05	5.25	27725800
		3	5.64	5.54	5.74	51012400
		4	5.80	5.70	5.90	25011000
		5	5.89	5.79	5.99	20580800
Aroclor-1262	500	1	7.85	7.75	7.95	126714000
		2	8.40	8.30	8.50	209954000
		3	8.72	8.62	8.82	90156600
		4	8.81	8.71	8.91	65919400
		5	9.49	9.39	9.59	80182400

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Instrument ID: ECD_O **Date(s) Analyzed:** 08/04/2022 08/05/2022

GC Column: ZB-MR2 **ID:** 0.32 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	500	1	3.81	3.71	3.91	11966900
		2	3.89	3.79	3.99	9032100
		3	3.97	3.87	4.07	28417800
		4	0.00			0
		5	0.00			0
Aroclor-1232	500	1	3.97	3.87	4.07	22642600
		2	4.69	4.59	4.79	23088600
		3	4.87	4.77	4.97	12289100
		4	4.95	4.85	5.05	11786400
		5	5.12	5.02	5.22	13454100
Aroclor-1262	500	1	6.76	6.66	6.86	35015000
		2	7.21	7.11	7.31	153183000
		3	7.49	7.39	7.59	61677800
		4	7.56	7.46	7.66	113883000
		5	8.05	7.95	8.15	53688000

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 14:29 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 14:29 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.00
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.91	4.91	4.81	5.01	0.00
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.01
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088969.D **Time Analyzed:** 14:29

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.609	5.515	5.715	532.930	500.000	6.6
Aroclor-1016-2	5.631	5.538	5.738	529.540	500.000	5.9
Aroclor-1016-3	5.694	5.601	5.801	535.610	500.000	7.1
Aroclor-1016-4	5.794	5.700	5.900	541.620	500.000	8.3
Aroclor-1016-5	6.090	5.997	6.197	532.520	500.000	6.5
Aroclor-1260-1	7.223	7.130	7.330	514.950	500.000	3.0
Aroclor-1260-2	7.480	7.386	7.586	515.330	500.000	3.1
Aroclor-1260-3	7.842	7.747	7.947	521.530	500.000	4.3
Aroclor-1260-4	8.069	7.975	8.175	518.140	500.000	3.6
Aroclor-1260-5	8.396	8.302	8.502	528.030	500.000	5.6
Decachlorobiphenyl	10.269	10.177	10.377	50.950	50.000	1.9
Tetrachloro-m-xylene	4.433	4.339	4.539	51.860	50.000	3.7

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL01 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088969.D **Time Analyzed:** 14:29

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.669	4.576	4.776	497.940	500.000	-0.4
Aroclor-1016-2	4.687	4.594	4.794	510.640	500.000	2.1
Aroclor-1016-3	4.862	4.770	4.970	510.470	500.000	2.1
Aroclor-1016-4	4.905	4.812	5.012	505.670	500.000	1.1
Aroclor-1016-5	5.117	5.025	5.225	510.610	500.000	2.1
Aroclor-1260-1	6.148	6.057	6.257	491.950	500.000	-1.6
Aroclor-1260-2	6.337	6.245	6.445	492.060	500.000	-1.6
Aroclor-1260-3	6.489	6.398	6.598	493.500	500.000	-1.3
Aroclor-1260-4	6.960	6.870	7.070	495.120	500.000	-1.0
Aroclor-1260-5	7.203	7.112	7.312	494.390	500.000	-1.1
Decachlorobiphenyl	8.581	8.492	8.692	43.900	50.000	-12.2
Tetrachloro-m-xylene	3.592	3.497	3.697	45.140	50.000	-9.7

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 19:19 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/15/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 19:19 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.00
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.90	4.91	4.81	5.01	0.01
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.01
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088984.D **Time Analyzed:** 19:19

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.608	5.515	5.715	540.360	500.000	8.1
Aroclor-1016-2	5.632	5.538	5.738	535.240	500.000	7.0
Aroclor-1016-3	5.694	5.601	5.801	543.780	500.000	8.8
Aroclor-1016-4	5.793	5.700	5.900	549.380	500.000	9.9
Aroclor-1016-5	6.090	5.997	6.197	539.730	500.000	7.9
Aroclor-1260-1	7.222	7.130	7.330	523.260	500.000	4.7
Aroclor-1260-2	7.480	7.386	7.586	522.970	500.000	4.6
Aroclor-1260-3	7.842	7.747	7.947	531.600	500.000	6.3
Aroclor-1260-4	8.069	7.975	8.175	528.820	500.000	5.8
Aroclor-1260-5	8.396	8.302	8.502	530.680	500.000	6.1
Decachlorobiphenyl	10.270	10.177	10.377	51.350	50.000	2.7
Tetrachloro-m-xylene	4.432	4.339	4.539	52.220	50.000	4.4

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL02 **Date Analyzed:** 08/15/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088984.D **Time Analyzed:** 19:19

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.668	4.576	4.776	506.290	500.000	1.3
Aroclor-1016-2	4.687	4.594	4.794	519.870	500.000	4.0
Aroclor-1016-3	4.862	4.770	4.970	520.470	500.000	4.1
Aroclor-1016-4	4.904	4.812	5.012	516.930	500.000	3.4
Aroclor-1016-5	5.116	5.025	5.225	523.110	500.000	4.6
Aroclor-1260-1	6.147	6.057	6.257	503.790	500.000	0.8
Aroclor-1260-2	6.336	6.245	6.445	503.820	500.000	0.8
Aroclor-1260-3	6.488	6.398	6.598	504.730	500.000	0.9
Aroclor-1260-4	6.959	6.870	7.070	505.830	500.000	1.2
Aroclor-1260-5	7.202	7.112	7.312	503.270	500.000	0.7
Decachlorobiphenyl	8.580	8.492	8.692	44.660	50.000	-10.7
Tetrachloro-m-xylene	3.591	3.497	3.697	45.840	50.000	-8.3

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/16/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 00:09 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR1 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	5.61	5.62	5.52	5.72	0.01
Aroclor-1016-2	(2)	5.63	5.64	5.54	5.74	0.01
Aroclor-1016-3	(3)	5.69	5.70	5.60	5.80	0.01
Aroclor-1016-4	(4)	5.79	5.80	5.70	5.90	0.01
Aroclor-1016-5	(5)	6.09	6.10	6.00	6.20	0.01
Aroclor-1260-1	(1)	7.22	7.23	7.13	7.33	0.01
Aroclor-1260-2	(2)	7.48	7.49	7.39	7.59	0.01
Aroclor-1260-3	(3)	7.84	7.85	7.75	7.95	0.01
Aroclor-1260-4	(4)	8.07	8.08	7.98	8.18	0.01
Aroclor-1260-5	(5)	8.40	8.40	8.30	8.50	0.00
Tetrachloro-m-xylene		4.43	4.44	4.34	4.54	0.01
Decachlorobiphenyl		10.27	10.28	10.18	10.38	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

Continuing Calib Date: 08/16/2022 **Initial Calibration Date(s):** 08/04/2022 08/05/2022

Continuing Calib Time: 00:09 **Initial Calibration Time(s):** 18:45 02:39

GC Column: ZB-MR2 **ID:** 0.32 **(mm)**

COMPOUND		CCAL RT	AVG RT	RT WINDOW FROM	RT WINDOW TO	DIFF RT
Aroclor-1016-1	(1)	4.67	4.68	4.58	4.78	0.01
Aroclor-1016-2	(2)	4.69	4.69	4.59	4.79	0.01
Aroclor-1016-3	(3)	4.86	4.87	4.77	4.97	0.01
Aroclor-1016-4	(4)	4.90	4.91	4.81	5.01	0.01
Aroclor-1016-5	(5)	5.12	5.13	5.03	5.23	0.02
Aroclor-1260-1	(1)	6.15	6.16	6.06	6.26	0.01
Aroclor-1260-2	(2)	6.34	6.35	6.25	6.45	0.01
Aroclor-1260-3	(3)	6.49	6.50	6.40	6.60	0.01
Aroclor-1260-4	(4)	6.96	6.97	6.87	7.07	0.01
Aroclor-1260-5	(5)	7.20	7.21	7.11	7.31	0.01
Tetrachloro-m-xylene		3.59	3.60	3.50	3.70	0.01
Decachlorobiphenyl		8.58	8.59	8.49	8.69	0.01

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR1 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/16/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088999.D **Time Analyzed:** 00:09

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	5.607	5.515	5.715	550.400	500.000	10.1
Aroclor-1016-2	5.630	5.538	5.738	539.890	500.000	8.0
Aroclor-1016-3	5.692	5.601	5.801	549.430	500.000	9.9
Aroclor-1016-4	5.792	5.700	5.900	555.050	500.000	11.0
Aroclor-1016-5	6.088	5.997	6.197	541.460	500.000	8.3
Aroclor-1260-1	7.221	7.130	7.330	545.530	500.000	9.1
Aroclor-1260-2	7.479	7.386	7.586	540.280	500.000	8.1
Aroclor-1260-3	7.840	7.747	7.947	540.040	500.000	8.0
Aroclor-1260-4	8.066	7.975	8.175	535.920	500.000	7.2
Aroclor-1260-5	8.395	8.302	8.502	540.180	500.000	8.0
Decachlorobiphenyl	10.266	10.177	10.377	52.180	50.000	4.4
Tetrachloro-m-xylene	4.432	4.339	4.539	53.250	50.000	6.5

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CALIBRATION VERIFICATION SUMMARY

Contract: loui01

Lab Code: CHEM **Case No.:** N4189 **SAS No.:** N4189 **SDG NO.:** N4189

GC Column: ZB-MR2 **ID:** 0.32 **(mm)** **Initi. Calib. Date(s):** 08/04/2022 08/04/2022

Client Sample No.: CCAL03 **Date Analyzed:** 08/16/2022

Lab Sample No.: AR1660CCC500 **Data File :** PO088999.D **Time Analyzed:** 00:09

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT(ng)	NOM AMOUNT(ng)	%D
Aroclor-1016-1	4.667	4.576	4.776	518.370	500.000	3.7
Aroclor-1016-2	4.685	4.594	4.794	521.310	500.000	4.3
Aroclor-1016-3	4.860	4.770	4.970	528.750	500.000	5.8
Aroclor-1016-4	4.903	4.812	5.012	511.620	500.000	2.3
Aroclor-1016-5	5.115	5.025	5.225	537.700	500.000	7.5
Aroclor-1260-1	6.146	6.057	6.257	506.160	500.000	1.2
Aroclor-1260-2	6.335	6.245	6.445	508.460	500.000	1.7
Aroclor-1260-3	6.487	6.398	6.598	500.810	500.000	0.2
Aroclor-1260-4	6.958	6.870	7.070	508.150	500.000	1.6
Aroclor-1260-5	7.201	7.112	7.312	507.290	500.000	1.5
Decachlorobiphenyl	8.579	8.492	8.692	44.870	50.000	-10.3
Tetrachloro-m-xylene	3.591	3.497	3.697	46.070	50.000	-7.9

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** ECD_O

GC Column: ZB-MR1 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/04/2022 08/04/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/04/2022	18:27	PO088545.D	10.28	4.44
AR1660ICC1000	AR1660ICC1000	08/04/2022	18:45	PO088546.D	10.28	4.44
AR1660ICC750	AR1660ICC750	08/04/2022	19:02	PO088547.D	10.28	4.44
AR1660ICC500	AR1660ICC500	08/04/2022	19:20	PO088548.D	10.28	4.44
AR1660ICC250	AR1660ICC250	08/04/2022	19:37	PO088549.D	10.28	4.44
AR1660ICC050	AR1660ICC050	08/04/2022	19:55	PO088550.D	10.28	4.44
AR1221ICC500	AR1221ICC500	08/04/2022	20:12	PO088551.D	10.28	4.44
AR1232ICC500	AR1232ICC500	08/04/2022	20:30	PO088552.D	10.28	4.44
AR1242ICC1000	AR1242ICC1000	08/04/2022	20:47	PO088553.D	10.28	4.44
AR1242ICC750	AR1242ICC750	08/04/2022	21:04	PO088554.D	10.28	4.44
AR1242ICC500	AR1242ICC500	08/04/2022	21:22	PO088555.D	10.28	4.44
AR1242ICC250	AR1242ICC250	08/04/2022	21:39	PO088556.D	10.28	4.44
AR1242ICC050	AR1242ICC050	08/04/2022	21:57	PO088557.D	10.28	4.44
AR1248ICC1000	AR1248ICC1000	08/04/2022	22:14	PO088558.D	10.28	4.44
AR1248ICC750	AR1248ICC750	08/04/2022	22:32	PO088559.D	10.27	4.44
AR1248ICC500	AR1248ICC500	08/04/2022	22:49	PO088560.D	10.27	4.44
AR1248ICC250	AR1248ICC250	08/04/2022	23:06	PO088561.D	10.27	4.44
AR1248ICC050	AR1248ICC050	08/04/2022	23:24	PO088562.D	10.28	4.44
AR1254ICC1000	AR1254ICC1000	08/04/2022	23:41	PO088563.D	10.27	4.44
AR1254ICC750	AR1254ICC750	08/04/2022	23:59	PO088564.D	10.28	4.44
AR1254ICC500	AR1254ICC500	08/05/2022	00:20	PO088565.D	10.28	4.44
AR1254ICC250	AR1254ICC250	08/05/2022	00:37	PO088566.D	10.27	4.44
AR1254ICC050	AR1254ICC050	08/05/2022	00:54	PO088567.D	10.27	4.44
AR1262ICC500	AR1262ICC500	08/05/2022	01:12	PO088568.D	10.27	4.44
AR1268ICC1000	AR1268ICC1000	08/05/2022	01:29	PO088569.D	10.27	4.44
AR1268ICC750	AR1268ICC750	08/05/2022	01:47	PO088570.D	10.28	4.44
AR1268ICC500	AR1268ICC500	08/05/2022	02:04	PO088571.D	10.27	4.44
AR1268ICC250	AR1268ICC250	08/05/2022	02:21	PO088572.D	10.28	4.44
AR1268ICC050	AR1268ICC050	08/05/2022	02:39	PO088573.D	10.27	4.44
AR1660CCC500	AR1660CCC500	08/15/2022	14:29	PO088969.D	10.27	4.43
I.BLK	I.BLK	08/15/2022	15:38	PO088973.D	10.27	4.43
PB147017BL	PB147017BL	08/15/2022	15:56	PO088974.D	10.27	4.43
PB147017BS	PB147017BS	08/15/2022	16:13	PO088975.D	10.27	4.43
SB18	N4189-01	08/15/2022	16:48	PO088977.D	10.27	4.43
SB19	N4189-03	08/15/2022	17:05	PO088978.D	10.27	4.43
SB20	N4189-05	08/15/2022	17:23	PO088979.D	10.27	4.43
SB15	N4189-07	08/15/2022	17:40	PO088980.D	10.27	4.43
SB16	N4189-09	08/15/2022	17:57	PO088981.D	10.27	4.43
SB17	N4189-11	08/15/2022	18:15	PO088982.D	10.27	4.43
SB13	N4189-13	08/15/2022	18:32	PO088983.D	10.27	4.43
AR1660CCC500	AR1660CCC500	08/15/2022	19:19	PO088984.D	10.27	4.43
I.BLK	I.BLK	08/15/2022	20:29	PO088988.D	10.27	4.43
SB12	N4189-15	08/15/2022	20:46	PO088989.D	10.27	4.43
SB14	N4189-17	08/15/2022	21:03	PO088990.D	10.27	4.43
SB11	N4189-19	08/15/2022	21:21	PO088991.D	10.27	4.43

Analytical Sequence

S5MS	N4200-10MS	08/15/2022	23:04	PO088997.D	10.27	4.43
S5MSD	N4200-10MSD	08/15/2022	23:22	PO088998.D	10.27	4.43
AR1660CCC500	AR1660CCC500	08/16/2022	00:09	PO088999.D	10.27	4.43
I.BLK	I.BLK	08/16/2022	01:18	PO089003.D	10.27	4.43

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** ECD_O

GC Column: ZB-MR2 **ID:** 0.32 (mm) **Inst. Calib. Date(s):** 08/04/2022 08/04/2022

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DATAFILE	DCB RT #	TCX RT #
I.BLK	I.BLK	08/04/2022	18:27	PO088545.D	8.59	3.60
AR1660ICC1000	AR1660ICC1000	08/04/2022	18:45	PO088546.D	8.59	3.60
AR1660ICC750	AR1660ICC750	08/04/2022	19:02	PO088547.D	8.59	3.60
AR1660ICC500	AR1660ICC500	08/04/2022	19:20	PO088548.D	8.59	3.60
AR1660ICC250	AR1660ICC250	08/04/2022	19:37	PO088549.D	8.59	3.60
AR1660ICC050	AR1660ICC050	08/04/2022	19:55	PO088550.D	8.59	3.60
AR1221ICC500	AR1221ICC500	08/04/2022	20:12	PO088551.D	8.59	3.60
AR1232ICC500	AR1232ICC500	08/04/2022	20:30	PO088552.D	8.59	3.60
AR1242ICC1000	AR1242ICC1000	08/04/2022	20:47	PO088553.D	8.59	3.60
AR1242ICC750	AR1242ICC750	08/04/2022	21:04	PO088554.D	8.59	3.60
AR1242ICC500	AR1242ICC500	08/04/2022	21:22	PO088555.D	8.59	3.60
AR1242ICC250	AR1242ICC250	08/04/2022	21:39	PO088556.D	8.59	3.60
AR1242ICC050	AR1242ICC050	08/04/2022	21:57	PO088557.D	8.59	3.60
AR1248ICC1000	AR1248ICC1000	08/04/2022	22:14	PO088558.D	8.59	3.60
AR1248ICC750	AR1248ICC750	08/04/2022	22:32	PO088559.D	8.59	3.60
AR1248ICC500	AR1248ICC500	08/04/2022	22:49	PO088560.D	8.59	3.60
AR1248ICC250	AR1248ICC250	08/04/2022	23:06	PO088561.D	8.59	3.60
AR1248ICC050	AR1248ICC050	08/04/2022	23:24	PO088562.D	8.59	3.60
AR1254ICC1000	AR1254ICC1000	08/04/2022	23:41	PO088563.D	8.59	3.60
AR1254ICC750	AR1254ICC750	08/04/2022	23:59	PO088564.D	8.59	3.60
AR1254ICC500	AR1254ICC500	08/05/2022	00:20	PO088565.D	8.59	3.60
AR1254ICC250	AR1254ICC250	08/05/2022	00:37	PO088566.D	8.59	3.59
AR1254ICC050	AR1254ICC050	08/05/2022	00:54	PO088567.D	8.59	3.60
AR1262ICC500	AR1262ICC500	08/05/2022	01:12	PO088568.D	8.59	3.60
AR1268ICC1000	AR1268ICC1000	08/05/2022	01:29	PO088569.D	8.59	3.60
AR1268ICC750	AR1268ICC750	08/05/2022	01:47	PO088570.D	8.59	3.60
AR1268ICC500	AR1268ICC500	08/05/2022	02:04	PO088571.D	8.59	3.60
AR1268ICC250	AR1268ICC250	08/05/2022	02:21	PO088572.D	8.59	3.60
AR1268ICC050	AR1268ICC050	08/05/2022	02:39	PO088573.D	8.59	3.60
AR1660CCC500	AR1660CCC500	08/15/2022	14:29	PO088969.D	8.58	3.59
I.BLK	I.BLK	08/15/2022	15:38	PO088973.D	8.58	3.59
PB147017BL	PB147017BL	08/15/2022	15:56	PO088974.D	8.58	3.59
PB147017BS	PB147017BS	08/15/2022	16:13	PO088975.D	8.58	3.59
SB18	N4189-01	08/15/2022	16:48	PO088977.D	8.58	3.59
SB19	N4189-03	08/15/2022	17:05	PO088978.D	8.58	3.59
SB20	N4189-05	08/15/2022	17:23	PO088979.D	8.58	3.59
SB15	N4189-07	08/15/2022	17:40	PO088980.D	8.58	3.59
SB16	N4189-09	08/15/2022	17:57	PO088981.D	8.58	3.59
SB17	N4189-11	08/15/2022	18:15	PO088982.D	8.58	3.59
SB13	N4189-13	08/15/2022	18:32	PO088983.D	8.58	3.59
AR1660CCC500	AR1660CCC500	08/15/2022	19:19	PO088984.D	8.58	3.59
I.BLK	I.BLK	08/15/2022	20:29	PO088988.D	8.58	3.59
SB12	N4189-15	08/15/2022	20:46	PO088989.D	8.58	3.59
SB14	N4189-17	08/15/2022	21:03	PO088990.D	8.58	3.59
SB11	N4189-19	08/15/2022	21:21	PO088991.D	8.58	3.59

Analytical Sequence

S5MS	N4200-10MS	08/15/2022	23:04	PO088997.D	8.58	3.59
S5MSD	N4200-10MSD	08/15/2022	23:22	PO088998.D	8.58	3.59
AR1660CCC500	AR1660CCC500	08/16/2022	00:09	PO088999.D	8.58	3.59
I.BLK	I.BLK	08/16/2022	01:18	PO089003.D	8.58	3.59

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB147017BL	SDG No.:	N4189
Lab Sample ID:	PB147017BL	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088974.D	1	08/15/22 08:55	08/15/22 15:56	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	17.0	U	3.10	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	17.0	U	3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.4		40 - 162	102%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.7		32 - 176	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/04/22
Project:	QED1059 Phase II SCI	Date Received:	08/04/22
Client Sample ID:	PIBLK-PO088545.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088545.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088545.D	1		08/04/22	PO080422

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.6		60 - 140	93%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.6		60 - 140	93%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-PO088973.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088973.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088973.D	1		08/15/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.5		60 - 140	93%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.5		60 - 140	92%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-PO088988.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO088988.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088988.D	1		08/15/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.8		60 - 140	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	18.9		60 - 140	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-PO089003.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-PO089003.D	Matrix:	WATER
Analytical Method:	SW8082A	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO089003.D	1		08/16/22	PO081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.14	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.14	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.17	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.12	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.22	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.11	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.17	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.9		60 - 140	95%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.0		60 - 140	95%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB147017BS	SDG No.:	N4189
Lab Sample ID:	PB147017BS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088975.D	1	08/15/22 08:55	08/15/22 16:13	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	154		3.00	17.0	ug/kg
11104-28-2	Aroclor-1221	17.0	U	4.70	17.0	ug/kg
11141-16-5	Aroclor-1232	17.0	U	3.90	17.0	ug/kg
53469-21-9	Aroclor-1242	17.0	U	2.40	17.0	ug/kg
12672-29-6	Aroclor-1248	17.0	U	3.00	17.0	ug/kg
11097-69-1	Aroclor-1254	17.0	U	4.20	17.0	ug/kg
37324-23-5	Aroclor-1262	17.0	U	3.30	17.0	ug/kg
11100-14-4	Aroclor-1268	17.0	U	5.70	17.0	ug/kg
11096-82-5	Aroclor-1260	143		3.20	17.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	20.1		40 - 162	100%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.1		32 - 176	111%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	S5MS	SDG No.:	N4189
Lab Sample ID:	N4200-10MS	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088997.D	1	08/15/22 08:55	08/15/22 23:04	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	204		3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.80	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	178		3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	22.0		40 - 162	110%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.3		32 - 176	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/12/22
Project:	QED1059 Phase II SCI	Date Received:	08/12/22
Client Sample ID:	S5MSD	SDG No.:	N4189
Lab Sample ID:	N4200-10MSD	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO088998.D	1	08/15/22 08:55	08/15/22 23:22	PB147017

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	202		3.40	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	5.30	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	4.40	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	2.70	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.40	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.80	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.80	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	6.50	19.2	ug/kg
11096-82-5	Aroclor-1260	178		3.70	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.8		40 - 162	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.1		32 - 176	100%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-01RE	**SB18RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-03	**SB19**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/12/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-05	**SB20**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-07	**SB15**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09	**SB16**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-09RE	**SB16RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
N4189-11	**SB17**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			PCB	8082A		08/15/22	08/15/22	
N4189-11RE	**SB17RE**	**SOIL**			**08/10/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/16/22	
N4189-13	**SB13**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-15	**SB12**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-17	**SB14**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	
N4189-19	**SB11**	**SOIL**			**08/11/22**			**08/11/22**
			Diesel Range Organics	8015D		08/13/22	08/15/22	
			Gasoline Range Organics	8015D			08/13/22	
			PCB	8082A		08/15/22	08/15/22	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010372.D	1	08/13/22 09:40	08/15/22 15:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	2260		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.63	*	37 - 130	33%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18RE	SDG No.:	N4189
Lab Sample ID:	N4189-01RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.8 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011259.D	1	08/13/22 09:40	08/15/22 18:59	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	2460		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	7.40		37 - 130	37%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011249.D	1	08/13/22 09:40	08/15/22 13:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	4710		239	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	15.8		37 - 130	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	11.1 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011252.D	1	08/13/22 09:40	08/15/22 15:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	22900		246	1870	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	17.4		37 - 130	87%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011253.D	1	08/13/22 09:40	08/15/22 15:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5650		227	1730	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	10.5		37 - 130	52%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010365.D	1	08/13/22 09:40	08/15/22 11:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	700	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	5.76	*	37 - 130	29%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16RE	SDG No.:	N4189
Lab Sample ID:	N4189-09RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010373.D	1	08/13/22 09:40	08/15/22 16:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	726	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	5.64	*	37 - 130	28%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010371.D	1	08/13/22 09:40	08/15/22 15:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1580	J	226	1720	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.71	*	37 - 130	34%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17RE	SDG No.:	N4189
Lab Sample ID:	N4189-11RE	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	3.4 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010380.D	1	08/13/22 09:40	08/16/22 10:44	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1640	J	226	1720	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	6.87	*	37 - 130	34%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	5.9 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010367.D	1	08/13/22 09:40	08/15/22 12:30	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	548	J	232	1770	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	9.21		37 - 130	46%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	11.5 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010368.D	1	08/13/22 09:40	08/15/22 13:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	896	J	247	1880	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	8.05		37 - 130	40%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	4.4 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010369.D	1	08/13/22 09:40	08/15/22 13:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	919	J	229	1740	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.4		37 - 130	72%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011254.D	5	08/13/22 09:40	08/15/22 16:01	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	85500		1140	8660	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	3.30		37 - 130	82%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS SURROGATE RECOVERY

Lab Name: Chemtech Client: Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

EPA SAMPLE NO.	S1 TETRACOSANE-d50		S2	S3	S4	TOT OUT
PIBLK-FF011243.D	83					0
PIBLK-FF011255.D	57					0
PIBLK-FF011260.D	85					0
PIBLK-FG010362.D	85					0
PIBLK-FG010374.D	81					0
PIBLK-FG010377.D	78					0
PIBLK-FG010381.D	79					0
SB18	33	*				1
SB18RE	37					0
SB19	79					0
SB19MS	66					0
SB19MSD	71					0
SB20	87					0
SB15	52					0
SB16	29	*				1
SB16RE	28	*				1
SB17	34	*				1
SB17RE	34	*				1
SB13	46					0
SB12	40					0
SB14	72					0
SB11	82					0
PB146987BL	101					0
PB146987BS	97					0

	QC LIMITS
TETRACOSANE-d50	For Water : 29-130 For Soil : 37-130

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate Diluted Out

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB19MS **Datafile:** FF011250.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7300	4710	9646	68%	*	68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Client SampleID : SB19MSD **Datafile:** FF011251.D

COMPOUND	SPIKE ADDED ug/kg	SAMPLE CONCENTRATION ug/kg	MS/MSD CONCENTRATION ug/kg	% REC	Qual	QC LIMITS
DRO	7292	4710	9460	65%	*	68-131

MS/MSD % Recovery RPD : 3.6

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

SOIL DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE RI

Lab Name: Chemtech **Client:** Louis Berger U.S., Inc., A WSP Company

Lab Code: CHEM **Cas No:** N4189 **SAS No :** N4189 **SDG No:** N4189

Matrix Spike - EPA Sample No : PB146987BS **Datafile:** FF011247.D

COMPOUND	SPIKE ADDED ug/kg	CONCENTRATION ug/kg	LCS/LCSD CONCENTRATION ug/kg	% REC	QC LIMITS
DRO	6662	0	5851	88	68-131

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

4B

METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB146987BL

Lab Name: CHEMTECH Contract: loui01

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG NO.: N4189

Lab File ID: FF011246.D Lab Sample ID: PB146987BL

Instrument ID: FF Date Extracted: 08/15/2022

Matrix: (soil/water) Soil Date Analyzed: 08/15/22

Level: (low/med) low Time Analyzed: 11:31

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
PB146987BS	PB146987BS	FF011247.D	08/15/22
SB19	N4189-03	FF011249.D	08/15/22
SB19MS	N4189-03MS	FF011250.D	08/15/22
SB19MSD	N4189-03MSD	FF011251.D	08/15/22
SB20	N4189-05	FF011252.D	08/15/22
SB15	N4189-07	FF011253.D	08/15/22
SB11	N4189-19	FF011254.D	08/15/22
SB18RE	N4189-01RE	FF011259.D	08/15/22
SB16	N4189-09	FG010365.D	08/15/22
SB13	N4189-13	FG010367.D	08/15/22
SB12	N4189-15	FG010368.D	08/15/22
SB14	N4189-17	FG010369.D	08/15/22
SB17	N4189-11	FG010371.D	08/15/22
SB18	N4189-01	FG010372.D	08/15/22
SB16RE	N4189-09RE	FG010373.D	08/15/22
SB17RE	N4189-11RE	FG010380.D	08/16/22

COMMENTS:

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146987BL	SDG No.:	N4189
Lab Sample ID:	PB146987BL	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011246.D	1	08/13/22 09:40	08/15/22 11:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	1670	U	219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	20.2		37 - 130	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011243.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011243.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011243.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.7		29 - 130	83%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011255.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011255.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011255.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	11.4		29 - 130	57%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FF011260.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FF011260.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011260.D	1		08/15/22	FF081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.0		29 - 130	85%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FG010362.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010362.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010362.D	1		08/15/22	FG081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	17.1		29 - 130	85%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/15/22
Project:	QED1059 Phase II SCI	Date Received:	08/15/22
Client Sample ID:	PIBLK-FG010374.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010374.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010374.D	1		08/15/22	FG081522

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	16.2		29 - 130	81%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-FG010377.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010377.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010377.D	1		08/16/22	FG081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	15.6		29 - 130	78%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/16/22
Project:	QED1059 Phase II SCI	Date Received:	08/16/22
Client Sample ID:	PIBLK-FG010381.D	SDG No.:	N4189
Lab Sample ID:	I.BLK-FG010381.D	Matrix:	Water
Analytical Method:	8015D DRO	% Moisture:	100 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FG010381.D	1		08/16/22	FG081622

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
DRO	DRO	50.0	U	7.00	50.0	ug/L
SURROGATES						
16416-32-3	Tetracosane-d50	15.8		29 - 130	79%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	
Project:	QED1059 Phase II SCI	Date Received:	
Client Sample ID:	PB146987BS	SDG No.:	N4189
Lab Sample ID:	PB146987BS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	0 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011247.D	1	08/13/22 09:40	08/15/22 12:00	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	5850		219	1670	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	19.4		37 - 130	97%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19MS	SDG No.:	N4189
Lab Sample ID:	N4189-03MS	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011250.D	1	08/13/22 09:40	08/15/22 13:29	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9650		240	1830	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	13.3		37 - 130	66%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19MSD	SDG No.:	N4189
Lab Sample ID:	N4189-03MSD	Matrix:	SOIL
Analytical Method:	8015D DRO	% Moisture:	8.7 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF011251.D	1	08/13/22 09:40	08/15/22 14:31	PB146987

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	9460		240	1820	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.2		37 - 130	71%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FF072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	109747060	109747	FF011119.D
500	57087367	114175	FF011120.D
200	24322005	121610	FF011121.D
100	13358237	133582	FF011122.D
50	7363952	147279	FF011123.D

AVG RF : 125279 **% RSD : 12.177** **AVG RT : 14.8026**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

Calibration Sequence : FG072822		Test : Diesel Range Organics	
Concentration (PPM)	**Area Count**	**Reference Factor**	**File ID**
1000	129039678	129040	FG010241.D
500	65428368	130857	FG010242.D
200	27695413	138477	FG010243.D
100	14808143	148081	FG010244.D
50	8194408	163888	FG010245.D

AVG RF : 142069 **% RSD : 10.082** **AVG RT : 14.8068**

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011244.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	63743234	127486	125279	1.762

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011256.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	62185497	124371	125279	0.725

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FF011261.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	65096765	130194	125279	3.923

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010363.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	79343137	158686	142069	11.696

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010375.D Analyst Name: YP\AJ Analyst Date: 08-15-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	68407358	136815	142069	3.698

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010378.D Analyst Name: YP\AJ Analyst Date: 08-16-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	64019623	128039	142069	9.875

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY

50 PPM TRPH STD

Lab Name: Chemtech Contract: loui01

ProjectID: QED1059 Phase II SCI

Lab Code: CHEM Case No.: N4189 SAS No.: N4189 SDG No.: N4189

DataFile: FG010382.D Analyst Name: YP\AJ Analyst Date: 08-16-2022

Conc. (PPM)	Area Count	RF	Average RF	%D
500	60536279	121073	142069	14.779

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Analytical Sequence

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **Instrument ID:** FID_G

GC Column: RXI-1MS **ID:** 0.18 **(mm)**

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SUROGATE RT FROM INITIAL CALIBRATION **14.8026**

EPA SAMPLE NO.	LAB SAMPLE ID	DATE AND TIME ANALYZED	DATAFILE	RT	#
PIBLK01	I.BLK01	15 Aug 2022 09:53	FF011243.D	14.799	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 10:25	FF011244.D	14.801	
PB146987BL	PB146987BL	15 Aug 2022 11:31	FF011246.D	14.799	
PB146987BS	PB146987BS	15 Aug 2022 12:00	FF011247.D	14.798	
SB19	N4189-03	15 Aug 2022 13:00	FF011249.D	14.798	
SB19MS	N4189-03MS	15 Aug 2022 13:29	FF011250.D	14.798	
SB19MSD	N4189-03MSD	15 Aug 2022 14:31	FF011251.D	14.797	
SB20	N4189-05	15 Aug 2022 15:01	FF011252.D	14.797	
SB15	N4189-07	15 Aug 2022 15:31	FF011253.D	14.798	
SB11	N4189-19	15 Aug 2022 16:01	FF011254.D	14.798	
PIBLK02	I.BLK02	15 Aug 2022 16:30	FF011255.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 17:00	FF011256.D	14.800	
SB18RE	N4189-01RE	15 Aug 2022 18:59	FF011259.D	14.796	
PIBLK03	I.BLK03	15 Aug 2022 19:28	FF011260.D	14.797	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 20:28	FF011261.D	14.799	
PIBLK04	I.BLK04	15 Aug 2022 09:53	FG010362.D	14.798	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 10:25	FG010363.D	14.801	
SB16	N4189-09	15 Aug 2022 11:31	FG010365.D	14.796	
SB13	N4189-13	15 Aug 2022 12:30	FG010367.D	14.795	
SB12	N4189-15	15 Aug 2022 13:00	FG010368.D	14.794	
SB14	N4189-17	15 Aug 2022 13:29	FG010369.D	14.796	
SB17	N4189-11	15 Aug 2022 15:01	FG010371.D	14.795	
SB18	N4189-01	15 Aug 2022 15:31	FG010372.D	14.795	
SB16RE	N4189-09RE	15 Aug 2022 16:01	FG010373.D	14.796	
PIBLK05	I.BLK05	15 Aug 2022 16:30	FG010374.D	14.796	
50 PPM TRPH STD	50 PPM TRPH STD	15 Aug 2022 17:30	FG010375.D	14.799	
PIBLK06	I.BLK06	16 Aug 2022 08:58	FG010377.D	14.793	
50 PPM TRPH STD	50 PPM TRPH STD	16 Aug 2022 09:27	FG010378.D	14.796	
SB17RE	N4189-11RE	16 Aug 2022 10:44	FG010380.D	14.794	
PIBLK07	I.BLK07	16 Aug 2022 11:14	FG010381.D	14.791	
50 PPM TRPH STD	50 PPM TRPH STD	16 Aug 2022 11:43	FG010382.D	14.795	

 # Column used to flag RT values with an * values outside of QC limits

QC Limits (± 0.10 minutes)	Lower Limit	Upper Limits
	14.7068	14.9068

Quantitation Report (QT Reviewed)

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081522\
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Operator : YP\AJ
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 15 15:27:20 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
9) S TETRACOSANE-d50 (SURR...	14.799	2068671	16.285 ug/mlm
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

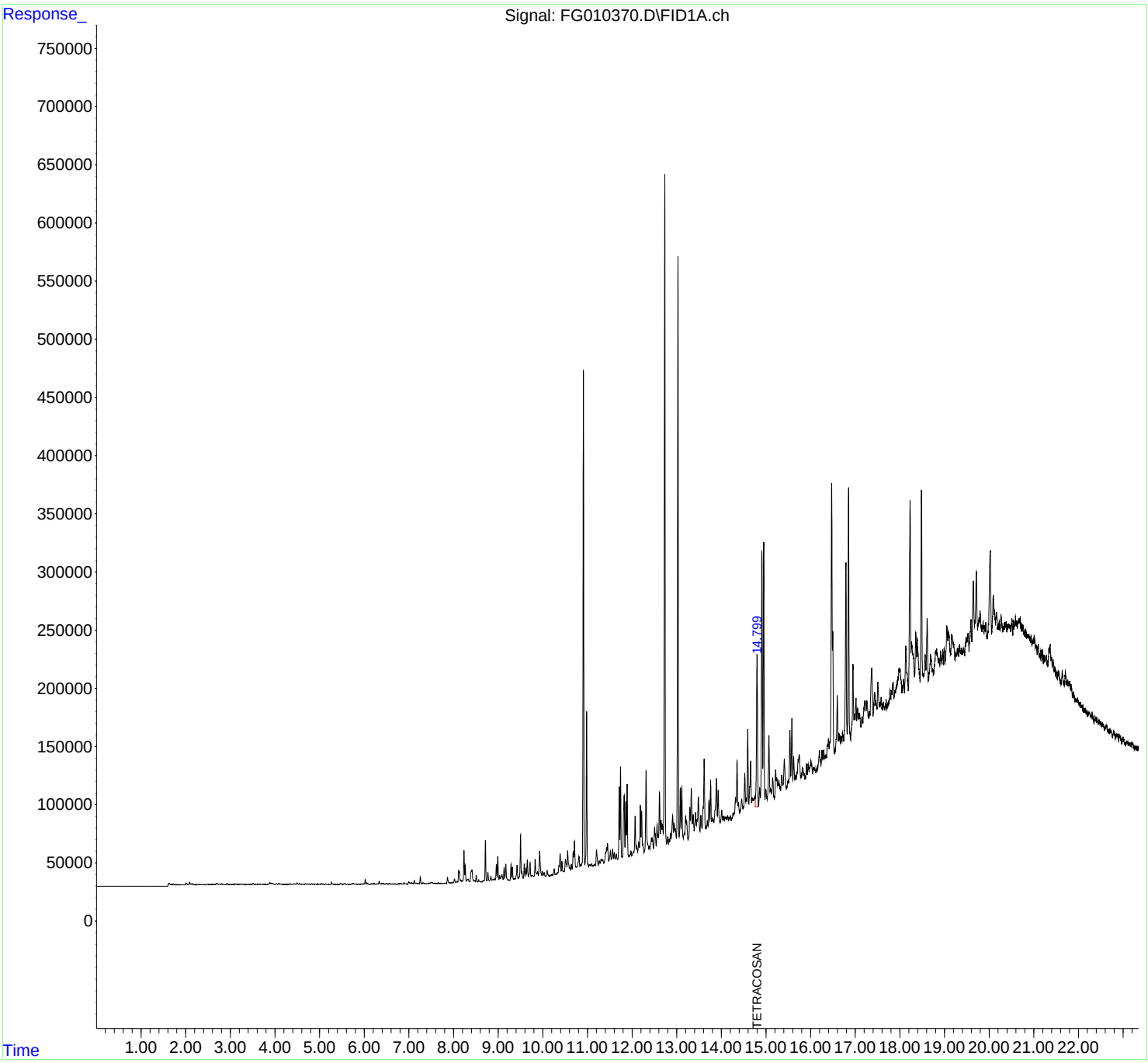
Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG081522\
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Operator : YP\AJ
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

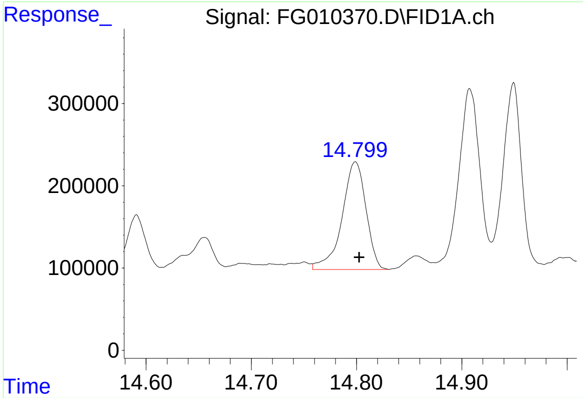
Integration File: autoint1.e
Quant Time: Aug 15 15:27:20 2022
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Quant Title :
QLast Update : Thu Jul 28 15:10:44 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1uL
Signal Phase : Rxi-1ms
Signal Info : 20mx0.18mmx0.18um

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED
Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.799 min
Delta R.T.: -0.004 min
Response: 2068671
Conc: 16.28 ug/ml

9

Instrument :
FID_G
ClientSampleId :
SB11

Manual Integrations APPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

A B C D E F G

Instrument :
FID_G
ClientSampleId :
SB11

rteres

Area Percent Report

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

Data Path : Z:\pestpcbsrv\HPCHEM1\FID_G\Data\FG08152
Data File : FG010370.D
Signal(s) : FID1A.ch
Acq On : 15 Aug 2022 13:59
Sample : N4189-19
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID_G\Method\FG072822.M
Title :

Signal : FID1A.ch

peak #	R.T. min	Start min	End min	PK TY	peak height	peak area	peak % max.	% of total
1	4.262	4.250	4.274	BH	73	365	0.00%	0.000%
2	4.292	4.274	4.304	PH	49	58	0.00%	0.000%
3	4.323	4.304	4.338	PH	600	6239	0.07%	0.002%
4	4.350	4.338	4.374	HH	251	3576	0.04%	0.001%
5	4.397	4.374	4.410	HH	278	3606	0.04%	0.001%
6	4.429	4.410	4.445	HH	530	6792	0.08%	0.002%
7	4.460	4.445	4.476	HH	498	6142	0.07%	0.002%
8	4.492	4.476	4.524	HH	1467	20363	0.24%	0.007%
9	4.544	4.524	4.567	HH	785	11641	0.14%	0.004%
10	4.571	4.567	4.594	HH	293	3183	0.04%	0.001%
11	4.607	4.594	4.622	HH	243	3286	0.04%	0.001%
12	4.631	4.622	4.661	HH	309	4408	0.05%	0.001%
13	4.683	4.661	4.712	HH	748	12644	0.15%	0.004%
14	4.729	4.712	4.756	HH	399	6514	0.08%	0.002%
15	4.772	4.756	4.784	HH	311	3651	0.04%	0.001%
16	4.799	4.784	4.806	HH	362	4057	0.05%	0.001%
17	4.821	4.806	4.848	HH	648	8900	0.10%	0.003%
18	4.850	4.848	4.857	HH	213	1047	0.01%	0.000%
19	4.861	4.857	4.865	HH	193	818	0.01%	0.000%
20	4.877	4.865	4.882	HH	266	2203	0.03%	0.001%
21	4.897	4.882	4.929	HH	324	6135	0.07%	0.002%
22	4.943	4.929	4.952	HH	108	1256	0.01%	0.000%
23	4.971	4.952	4.988	HH	423	5756	0.07%	0.002%
24	4.998	4.988	5.012	HH	196	2025	0.02%	0.001%
25	5.041	5.012	5.065	HH	723	10597	0.12%	0.004%
26	5.074	5.065	5.095	HH	302	3714	0.04%	0.001%
27	5.124	5.095	5.131	HH	370	4405	0.05%	0.001%
28	5.142	5.131	5.175	HH	439	4706	0.06%	0.002%
29	5.201	5.175	5.232	PH	115	-70	-0.00%	-0.000%
30	5.236	5.232	5.248	PH	-9	-586	-0.01%	-0.000%
31	5.268	5.248	5.293	PH	1927	20493	0.24%	0.007%
32	5.311	5.293	5.328	HH	252	3004	0.04%	0.001%
33	5.343	5.328	5.361	PH	215	1412	0.02%	0.000%
34	5.365	5.361	5.370	PH	-104	-627	-0.01%	-0.000%
35	5.395	5.370	5.415	PH	249	1129	0.01%	0.000%
36	5.418	5.415	5.430	PH	43	-362	-0.00%	-0.000%

Page 1

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

rteres

37	5.437	5.430	5.442	PH	-54	-703	-0.01%	-0.000%
38	5.468	5.442	5.481	PH	736	8335		
39	5.487	5.481	5.501	HH	422	3656		
40	5.505	5.501	5.523	HH	214	943		
41	5.544	5.523	5.553	PH	631	5825		
42	5.557	5.553	5.573	HH	558	5389		
43	5.577	5.573	5.599	HH	424	3635	0.04%	0.001%
44	5.604	5.599	5.609	HH	89	326	0.00%	0.000%
45	5.631	5.609	5.641	HH	103	1002	0.01%	0.000%
46	5.645	5.641	5.650	HH	39	114	0.00%	0.000%
47	5.654	5.650	5.659	PH	72	233	0.00%	0.000%
48	5.674	5.659	5.683	PH	101	871	0.01%	0.000%
49	5.727	5.683	5.736	HH	693	9612	0.11%	0.003%
50	5.748	5.736	5.763	HH	818	9908	0.12%	0.003%
51	5.781	5.763	5.791	HH	545	7872	0.09%	0.003%
52	5.797	5.791	5.845	HH	433	6854	0.08%	0.002%
53	5.871	5.845	5.890	HH	425	6782	0.08%	0.002%
54	5.901	5.890	5.923	HH	304	4578	0.05%	0.002%
55	5.943	5.923	5.970	HH	566	8549	0.10%	0.003%
56	6.023	5.970	6.042	HH	4316	54537	0.64%	0.018%
57	6.057	6.042	6.099	HH	1331	26155	0.31%	0.009%
58	6.124	6.099	6.127	HH	289	3221	0.04%	0.001%
59	6.140	6.127	6.153	HH	358	4139	0.05%	0.001%
60	6.178	6.153	6.199	HH	856	12250	0.14%	0.004%
61	6.223	6.199	6.244	HH	1136	17772	0.21%	0.006%
62	6.259	6.244	6.272	HH	453	5636	0.07%	0.002%
63	6.286	6.272	6.298	HH	573	6821	0.08%	0.002%
64	6.304	6.298	6.310	HH	421	2776	0.03%	0.001%
65	6.336	6.310	6.370	HH	2731	41028	0.48%	0.014%
66	6.407	6.370	6.425	HH	949	21490	0.25%	0.007%
67	6.437	6.425	6.462	HH	590	9157	0.11%	0.003%
68	6.500	6.462	6.517	HH	768	14629	0.17%	0.005%
69	6.526	6.517	6.539	HH	468	4896	0.06%	0.002%
70	6.566	6.539	6.594	HH	784	16407	0.19%	0.005%
71	6.612	6.594	6.623	HH	513	6753	0.08%	0.002%
72	6.637	6.623	6.650	HH	468	6211	0.07%	0.002%
73	6.655	6.650	6.668	HH	427	3661	0.04%	0.001%
74	6.684	6.668	6.691	HH	427	4666	0.05%	0.002%
75	6.699	6.691	6.715	HH	400	4081	0.05%	0.001%
76	6.719	6.715	6.732	HH	183	1510	0.02%	0.001%
77	6.742	6.732	6.754	HH	258	2946	0.03%	0.001%
78	6.773	6.754	6.793	HH	1009	12522	0.15%	0.004%
79	6.818	6.793	6.866	HH	780	20833	0.24%	0.007%
80	6.894	6.866	6.912	HH	1575	21199	0.25%	0.007%
81	6.947	6.912	6.969	HH	594	15720	0.18%	0.005%
82	6.996	6.969	7.045	HH	2321	59885	0.70%	0.020%
83	7.060	7.045	7.101	HH	1563	34757	0.41%	0.012%
84	7.120	7.101	7.140	HH	3605	45714	0.53%	0.015%
85	7.159	7.140	7.184	HH	1250	26959	0.32%	0.009%
86	7.196	7.184	7.203	HH	899	9552	0.11%	0.003%
87	7.221	7.203	7.235	HH	1120	18675	0.22%	0.006%
88	7.255	7.235	7.297	HH	6567	89065	1.04%	0.030%
89	7.315	7.297	7.339	HH	1590	27428	0.32%	0.009%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

90	7.348	7.339	7.369	HH	889	13713	0.16%	0.005%
91	7.395	7.369	7.405	HH	790	15438		
92	7.425	7.405	7.432	HH	845	12316		
93	7.451	7.432	7.466	HH	1214	18634		
94	7.496	7.466	7.540	HH	1877	61858		
95	7.564	7.540	7.589	HH	1233	30246		
96	7.615	7.589	7.645	HH	1170	29747	0.35%	0.010%
97	7.663	7.645	7.702	HH	1542	36357	0.43%	0.012%
98	7.724	7.702	7.746	HH	1279	25454	0.30%	0.008%
99	7.749	7.746	7.759	HH	841	6484	0.08%	0.002%
100	7.787	7.759	7.798	HH	1053	21426	0.25%	0.007%
101	7.803	7.798	7.813	HH	1104	9316	0.11%	0.003%
102	7.817	7.813	7.837	HH	1020	12558	0.15%	0.004%
103	7.864	7.837	7.922	HH	6017	127997	1.50%	0.043%
104	7.939	7.922	7.949	HH	1430	21733	0.25%	0.007%
105	7.962	7.949	7.975	HH	1655	23659	0.28%	0.008%
106	8.020	7.975	8.050	HH	4709	111523	1.30%	0.037%
107	8.074	8.050	8.095	HH	2712	59522	0.70%	0.020%
108	8.116	8.095	8.123	HH	11759	122913	1.44%	0.041%
109	8.130	8.123	8.151	HH	11314	130721	1.53%	0.043%
110	8.157	8.151	8.183	HH	3640	62360	0.73%	0.021%
111	8.191	8.183	8.202	HH	3157	36149	0.42%	0.012%
112	8.234	8.202	8.251	HH	29226	377345	4.41%	0.125%
113	8.262	8.251	8.284	HH	16651	190409	2.23%	0.063%
114	8.314	8.284	8.320	HH	4311	79251	0.93%	0.026%
115	8.329	8.320	8.365	HH	4666	90067	1.05%	0.030%
116	8.413	8.365	8.459	HH	12507	407604	4.77%	0.135%
117	8.472	8.459	8.489	HH	3385	53691	0.63%	0.018%
118	8.509	8.489	8.533	HH	7639	114501	1.34%	0.038%
119	8.561	8.533	8.582	HH	4166	87081	1.02%	0.029%
120	8.590	8.582	8.613	HH	2555	43102	0.50%	0.014%
121	8.630	8.613	8.645	HH	2551	45647	0.53%	0.015%
122	8.664	8.645	8.684	HH	3225	68975	0.81%	0.023%
123	8.715	8.684	8.747	HH	37777	469393	5.49%	0.156%
124	8.770	8.747	8.805	HH	10421	191731	2.24%	0.064%
125	8.837	8.805	8.856	HH	6911	147482	1.72%	0.049%
126	8.871	8.856	8.875	HH	4209	44425	0.52%	0.015%
127	8.884	8.875	8.895	HH	4315	50930	0.60%	0.017%
128	8.912	8.895	8.933	HH	5310	100283	1.17%	0.033%
129	8.960	8.933	8.975	HH	17222	248923	2.91%	0.083%
130	8.991	8.975	9.017	HH	23801	315555	3.69%	0.105%
131	9.034	9.017	9.050	HH	7810	118703	1.39%	0.039%
132	9.086	9.050	9.112	HH	8489	239233	2.80%	0.080%
133	9.132	9.112	9.149	HH	14842	193229	2.26%	0.064%
134	9.172	9.149	9.223	HH	17340	349072	4.08%	0.116%
135	9.234	9.223	9.260	HH	4106	84811	0.99%	0.028%
136	9.289	9.260	9.305	HH	17465	251582	2.94%	0.084%
137	9.319	9.305	9.341	HH	14986	200270	2.34%	0.067%
138	9.350	9.341	9.355	HH	4861	39347	0.46%	0.013%
139	9.367	9.355	9.384	HH	5118	86103	1.01%	0.029%
140	9.424	9.384	9.447	HH	16662	336153	3.93%	0.112%
141	9.502	9.447	9.522	HH	42510	677549	7.92%	0.225%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

rteres

142	9.531	9.522	9.560	HH	10891	183602	2.15%	0.061%
143	9.585	9.560	9.603	HH	17568	271189	3	
144	9.623	9.603	9.637	HH	13490	218254	2	
145	9.654	9.637	9.677	HH	21088	333235	3	
146	9.715	9.677	9.738	HH	18917	399017	4	
147	9.765	9.738	9.803	HH	7999	289661	3	
148	9.829	9.803	9.862	HH	21903	431447	5.05%	0.143%
149	9.883	9.862	9.900	HH	10915	220895	2.58%	0.073%
150	9.929	9.900	9.973	HH	28720	668144	7.81%	0.222%
151	9.989	9.973	10.006	HH	11253	185442	2.17%	0.062%
152	10.029	10.006	10.061	HH	10212	276551	3.23%	0.092%
153	10.097	10.061	10.148	HH	11984	452629	5.29%	0.150%
154	10.175	10.148	10.185	HH	7906	167112	1.95%	0.056%
155	10.201	10.185	10.225	HH	8671	194818	2.28%	0.065%
156	10.255	10.225	10.275	HH	13291	314194	3.67%	0.104%
157	10.286	10.275	10.294	HH	8880	95225	1.11%	0.032%
158	10.326	10.294	10.336	HH	10268	241337	2.82%	0.080%
159	10.361	10.336	10.370	HH	16126	263011	3.08%	0.087%
160	10.388	10.370	10.411	HH	26377	474084	5.54%	0.158%
161	10.427	10.411	10.453	HH	20155	382629	4.47%	0.127%
162	10.465	10.453	10.477	HH	11502	157790	1.85%	0.052%
163	10.508	10.477	10.539	HH	21529	630760	7.38%	0.210%
164	10.557	10.539	10.595	HH	28898	661588	7.74%	0.220%
165	10.602	10.595	10.616	HH	14478	175994	2.06%	0.059%
166	10.639	10.616	10.657	HH	17212	368326	4.31%	0.122%
167	10.681	10.657	10.692	HH	28252	456334	5.34%	0.152%
168	10.709	10.692	10.753	HH	37137	830563	9.71%	0.276%
169	10.765	10.753	10.769	HH	15388	144930	1.69%	0.048%
170	10.811	10.769	10.831	HH	24093	708434	8.28%	0.235%
171	10.850	10.831	10.861	HH	17057	296025	3.46%	0.098%
172	10.910	10.861	10.943	HH	441313	5495084	64.26%	1.827%
173	10.981	10.943	11.028	HH	148456	2241929	26.22%	0.745%
174	11.040	11.028	11.048	HH	17029	197167	2.31%	0.066%
175	11.057	11.048	11.076	HH	16836	275348	3.22%	0.092%
176	11.095	11.076	11.115	HH	17710	392363	4.59%	0.130%
177	11.125	11.115	11.133	HH	16152	175783	2.06%	0.058%
178	11.154	11.133	11.177	HH	17476	438177	5.12%	0.146%
179	11.203	11.177	11.240	HH	29887	837015	9.79%	0.278%
180	11.262	11.240	11.285	HH	19994	510590	5.97%	0.170%
181	11.303	11.285	11.309	HH	21693	281366	3.29%	0.094%
182	11.311	11.309	11.315	HH	21341	74868	0.88%	0.025%
183	11.320	11.315	11.333	HH	21327	224425	2.62%	0.075%
184	11.343	11.333	11.366	HH	21278	402970	4.71%	0.134%
185	11.408	11.366	11.412	HH	27463	618661	7.23%	0.206%
186	11.428	11.412	11.438	HH	31897	461083	5.39%	0.153%
187	11.451	11.438	11.476	HH	35210	645784	7.55%	0.215%
188	11.514	11.476	11.532	HH	28760	809148	9.46%	0.269%
189	11.562	11.532	11.586	HH	29811	801717	9.38%	0.266%
190	11.601	11.586	11.622	HH	27548	533126	6.23%	0.177%
191	11.647	11.622	11.671	HH	26243	690589	8.08%	0.230%
192	11.712	11.671	11.726	HH	84317	1425161	16.67%	0.474%
193	11.741	11.726	11.771	HH	100987	1456186	17.03%	0.484%
194	11.822	11.771	11.840	HH	76582	1891298	22.12%	0.629%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

195	11.859	11.840	11.873	HH	71555	1036111	12.12%	0.344%
196	11.889	11.873	11.930	HH	86457	1564308	18	
197	11.947	11.930	11.952	HH	25100	335922	3	
198	11.976	11.952	11.995	HH	28570	671346	7	
199	12.069	11.995	12.090	HH	58875	1936115	22	
200	12.104	12.090	12.124	HH	32961	624376	7	
201	12.149	12.124	12.165	HH	35921	807289	9.44%	0.268%
202	12.184	12.165	12.200	HH	68158	1050721	12.29%	0.349%
203	12.214	12.200	12.267	HH	63137	1611056	18.84%	0.536%
204	12.314	12.267	12.376	HH	97941	2896485	33.87%	0.963%
205	12.388	12.376	12.402	HH	32757	496290	5.80%	0.165%
206	12.434	12.402	12.446	HH	40041	963396	11.27%	0.320%
207	12.457	12.446	12.481	HH	38401	742051	8.68%	0.247%
208	12.505	12.481	12.540	HH	48814	1424563	16.66%	0.474%
209	12.560	12.540	12.575	HH	51504	888368	10.39%	0.295%
210	12.581	12.575	12.592	HH	42198	438590	5.13%	0.146%
211	12.614	12.592	12.634	HH	79676	1459571	17.07%	0.485%
212	12.650	12.634	12.667	HH	55305	1008808	11.80%	0.335%
213	12.680	12.667	12.699	HH	51593	924567	10.81%	0.307%
214	12.733	12.699	12.772	HH	609617	8420901	98.48%	2.799%
215	12.790	12.772	12.809	HH	41052	837454	9.79%	0.278%
216	12.830	12.809	12.841	HH	38753	720777	8.43%	0.240%
217	12.862	12.841	12.875	HH	43705	816149	9.54%	0.271%
218	12.909	12.875	12.927	HH	59361	1544007	18.06%	0.513%
219	12.942	12.927	12.960	HH	52842	998489	11.68%	0.332%
220	12.970	12.960	12.991	HH	48311	832438	9.73%	0.277%
221	13.029	12.991	13.053	HH	539639	7154890	83.67%	2.378%
222	13.081	13.053	13.097	HH	82805	1544304	18.06%	0.513%
223	13.114	13.097	13.147	HH	83441	1727974	20.21%	0.574%
224	13.170	13.147	13.178	HH	43751	790907	9.25%	0.263%
225	13.201	13.178	13.213	HH	58776	1069126	12.50%	0.355%
226	13.222	13.213	13.255	HH	54668	1212654	14.18%	0.403%
227	13.293	13.255	13.308	HH	66278	1605211	18.77%	0.534%
228	13.327	13.308	13.350	HH	82555	1667169	19.50%	0.554%
229	13.370	13.350	13.390	HH	60105	1326255	15.51%	0.441%
230	13.425	13.390	13.441	HH	61766	1637260	19.15%	0.544%
231	13.456	13.441	13.462	HH	55823	683659	7.99%	0.227%
232	13.486	13.462	13.521	HH	75214	2102949	24.59%	0.699%
233	13.541	13.521	13.568	HH	59361	1493162	17.46%	0.496%
234	13.615	13.568	13.643	HH	107779	3125912	36.56%	1.039%
235	13.648	13.643	13.652	HH	48885	273283	3.20%	0.091%
236	13.667	13.652	13.670	HH	49263	533349	6.24%	0.177%
237	13.686	13.670	13.701	HH	54577	945100	11.05%	0.314%
238	13.723	13.701	13.742	HH	72618	1537601	17.98%	0.511%
239	13.760	13.742	13.781	HH	89819	1623959	18.99%	0.540%
240	13.799	13.781	13.813	HH	57227	1058041	12.37%	0.352%
241	13.823	13.813	13.833	HH	54900	650489	7.61%	0.216%
242	13.889	13.833	13.910	HH	91191	3196163	37.38%	1.062%
243	13.929	13.910	13.968	HH	80995	2239922	26.19%	0.745%
244	14.009	13.968	14.028	HH	64112	2067582	24.18%	0.687%
245	14.039	14.028	14.068	HH	58362	1375475	16.09%	0.457%
246	14.089	14.068	14.096	HH	57701	951312	11.13%	0.316%

Instrument :
FID_G
ClientSampleId :
SB11

rteres

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita Jodhani 08/16/2022

247	14.101	14.096	14.108	HH	58060	424046	4.96%	0.141%
248	14.120	14.108	14.125	HH	57026	567201	6	
249	14.143	14.125	14.163	HH	58838	1322948	15	
250	14.182	14.163	14.190	HH	57121	887623	10	
251	14.204	14.190	14.219	HH	58901	1013022	11	
252	14.234	14.219	14.242	HH	57315	759911	8	
253	14.260	14.242	14.273	HH	61393	1115712	13.05%	0.371%
254	14.287	14.273	14.296	HH	62099	857460	10.03%	0.285%
255	14.318	14.296	14.329	HH	74793	1379320	16.13%	0.458%
256	14.352	14.329	14.375	HH	106923	2293102	26.82%	0.762%
257	14.383	14.375	14.408	HH	70519	1353718	15.83%	0.450%
258	14.456	14.408	14.480	HH	73604	2856093	33.40%	0.949%
259	14.525	14.480	14.545	HH	94807	3004041	35.13%	0.999%
260	14.557	14.545	14.569	HH	74044	1029093	12.03%	0.342%
261	14.591	14.569	14.615	HH	133472	2656782	31.07%	0.883%
262	14.656	14.615	14.676	HH	105826	3113799	36.41%	1.035%
263	14.690	14.676	14.715	HH	74216	1673338	19.57%	0.556%
264	14.718	14.715	14.731	HH	73673	736542	8.61%	0.245%
265	14.750	14.731	14.757	HH	75895	1146305	13.41%	0.381%
266	14.799	14.757	14.831	HH	198000	5046305	59.01%	1.677%
267	14.857	14.831	14.874	HH	83365	1951092	22.82%	0.649%
268	14.908	14.874	14.928	HH	286468	5256016	61.47%	1.747%
269	14.949	14.928	14.978	HH	294489	4794169	56.07%	1.594%
270	15.001	14.978	15.028	HH	81420	2293182	26.82%	0.762%
271	15.066	15.028	15.091	HH	127984	3578634	41.85%	1.190%
272	15.097	15.091	15.105	HH	81398	689442	8.06%	0.229%
273	15.108	15.105	15.121	HH	81984	735725	8.60%	0.245%
274	15.150	15.121	15.187	HH	91555	3273795	38.29%	1.088%
275	15.216	15.187	15.231	HH	98348	2304822	26.95%	0.766%
276	15.240	15.231	15.276	HH	91781	2375113	27.78%	0.790%
277	15.288	15.276	15.308	HH	89421	1634548	19.12%	0.543%
278	15.314	15.308	15.329	HH	84264	1026711	12.01%	0.341%
279	15.352	15.329	15.379	HH	94033	2672801	31.26%	0.888%
280	15.410	15.379	15.450	HH	107815	3976536	46.50%	1.322%
281	15.463	15.450	15.468	HH	84541	901007	10.54%	0.300%
282	15.488	15.468	15.493	HH	88646	1304324	15.25%	0.434%
283	15.536	15.493	15.556	HH	132803	3918556	45.83%	1.303%
284	15.580	15.556	15.601	HH	142845	3069267	35.89%	1.020%
285	15.619	15.601	15.651	HH	109986	2968609	34.72%	0.987%
286	15.660	15.651	15.674	HH	94256	1283002	15.00%	0.426%
287	15.719	15.674	15.727	HH	107383	3067103	35.87%	1.020%
288	15.744	15.727	15.786	HH	111457	3666914	42.88%	1.219%
289	15.823	15.786	15.848	HH	99677	3553503	41.56%	1.181%
290	15.852	15.848	15.876	HH	95346	1589795	18.59%	0.528%
291	15.880	15.876	15.886	HH	92263	549615	6.43%	0.183%
292	15.906	15.886	15.925	HH	103757	2266647	26.51%	0.753%
293	15.944	15.925	15.966	HH	103580	2476226	28.96%	0.823%
294	16.003	15.966	16.017	HH	106500	3074068	35.95%	1.022%
295	16.021	16.017	16.046	HH	102910	1774963	20.76%	0.590%
296	16.068	16.046	16.076	HH	100837	1757208	20.55%	0.584%
297	16.081	16.076	16.086	HH	100230	598574	7.00%	0.199%
298	16.094	16.086	16.105	HH	100295	1139376	13.32%	0.379%
299	16.109	16.105	16.120	HH	97790	842827	9.86%	0.280%

Instrument :
FID_G
ClientSampleId :
SB11

Manual IntegrationsAPPROVED

Reviewed By :Yogesh Patel 08/16/2022
Supervised By :Ankita
Jodhani 08/16/2022

rteres

300	16.125	16.120	16.130	HH	98370	582731	6.81%	0.194%
301	16.154	16.130	16.160	HH	101234	1838693	21	
302	16.196	16.160	16.233	HH	114895	4645750	54	
303	16.254	16.233	16.276	HH	114506	2866128	33	
304	16.292	16.276	16.317	HH	115663	2710440	31	
305	16.322	16.317	16.330	HH	110969	856534	10	
306	16.334	16.330	16.358	HH	110464	1857320	21.72%	0.617%
307	16.397	16.358	16.415	HH	124419	4055274	47.42%	1.348%
308	16.472	16.415	16.489	HH	345103	8551085	100.00%	2.842%
309	16.497	16.489	16.526	HH	217774	3698371	43.25%	1.229%
310	16.532	16.526	16.537	HH	114345	703683	8.23%	0.234%
311	16.547	16.537	16.553	HH	115909	1116989	13.06%	0.371%
312	16.597	16.553	16.619	HH	162489	5366771	62.76%	1.784%
313	16.639	16.619	16.649	HH	129544	2259256	26.42%	0.751%
314	16.654	16.649	16.668	HH	128257	1423300	16.64%	0.473%
315	16.684	16.668	16.691	HH	127320	1734146	20.28%	0.576%
316	16.695	16.691	16.701	HH	125619	737586	8.63%	0.245%
317	16.714	16.701	16.744	HH	130931	3279725	38.35%	1.090%
318	16.792	16.744	16.821	HH	275793	7969051	93.19%	2.649%
319	16.850	16.821	16.896	HH	339784	8275262	96.77%	2.751%
320	16.949	16.896	16.972	HH	188574	6780400	79.29%	2.254%
321	16.980	16.972	16.998	HH	146626	2306277	26.97%	0.767%

Sum of corrected areas: 300834103

FG072822.M Mon Aug 15 17:29:00 2022

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-02	**SB18**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-04	**SB19**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-06	**SB20**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-08	**SB15**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-10	**SB16**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-12	**SB17**	**TCLP**			**08/10/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-14	**SB13**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-16	**SB12**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	
			TCLP Mercury	7470A		08/15/22	08/15/22	
N4189-18	**SB14**	**TCLP**			**08/11/22**			**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/15/22	

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			TCLP Mercury	7470A		08/15/22	08/15/22
N4189-20	**SB11**	**TCLP**			**08/11/22**		**08/11/22**
			TCLP ICP Metals	6010D		08/14/22	08/16/22
			TCLP Mercury	7470A		08/15/22	08/15/22

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: N4189 **Order ID:** N4189

Client: Louis Berger U.S., Inc., A WSP Company **Project ID:** QED1059 Phase II SCI

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB18								
N4189-02	SB18	TCLP	Barium	1,160.000		77.9	500	ug/L
N4189-02	SB18	TCLP	Chromium	129.000		10.4	50.0	ug/L
Client ID : SB19								
N4189-04	SB19	TCLP	Barium	1,550.000		77.9	500	ug/L
Client ID : SB20								
N4189-06	SB20	TCLP	Barium	1,430.000		77.9	500	ug/L
N4189-06	SB20	TCLP	Chromium	14.000	J	10.4	50.0	ug/L
N4189-06	SB20	TCLP	Lead	34.200	J	19.4	60.0	ug/L
Client ID : SB15								
N4189-08	SB15	TCLP	Barium	773.000		77.9	500	ug/L
N4189-08	SB15	TCLP	Chromium	14.300	J	10.4	50.0	ug/L
Client ID : SB16								
N4189-10	SB16	TCLP	Barium	1,540.000		77.9	500	ug/L
N4189-10	SB16	TCLP	Chromium	11.000	J	10.4	50.0	ug/L
N4189-10	SB16	TCLP	Lead	19.500	J	19.4	60.0	ug/L
Client ID : SB17								
N4189-12	SB17	TCLP	Barium	1,280.000		77.9	500	ug/L
N4189-12	SB17	TCLP	Chromium	10.700	J	10.4	50.0	ug/L
N4189-12	SB17	TCLP	Lead	21.400	J	19.4	60.0	ug/L
Client ID : SB13								
N4189-14	SB13	TCLP	Barium	1,210.000		77.9	500	ug/L
N4189-14	SB13	TCLP	Chromium	11.200	J	10.4	50.0	ug/L
N4189-14	SB13	TCLP	Lead	31.900	J	19.4	60.0	ug/L
Client ID : SB12								
N4189-16	SB12	TCLP	Barium	1,190.000		77.9	500	ug/L
N4189-16	SB12	TCLP	Chromium	23.800	J	10.4	50.0	ug/L
Client ID : SB14								
N4189-18	SB14	TCLP	Barium	1,180.000		77.9	500	ug/L
N4189-18	SB14	TCLP	Chromium	11.600	J	10.4	50.0	ug/L
Client ID : SB11								
N4189-20	SB11	TCLP	Barium	1,140.000		77.9	500	ug/L
N4189-20	SB11	TCLP	Chromium	95.900		10.4	50.0	ug/L
N4189-20	SB11	TCLP	Lead	23.100	J	19.4	60.0	ug/L

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-39-3	Barium	1160		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-47-3	Chromium	129		1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:15	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:17	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-39-3	Barium	1550		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-47-3	Chromium	50.0	U	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:18	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:29	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-06	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-39-3	Barium	1430		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-47-3	Chromium	14.0	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7439-92-1	Lead	34.2	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:20	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:33	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-08	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-39-3	Barium	773		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-47-3	Chromium	14.3	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:22	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:38	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-10	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-39-3	Barium	1540		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-47-3	Chromium	11.0	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7439-92-1	Lead	19.5	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:24	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:42	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-12	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-39-3	Barium	1280		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-47-3	Chromium	10.7	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7439-92-1	Lead	21.4	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:27	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:46	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-14	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-39-3	Barium	1210		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-47-3	Chromium	11.2	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7439-92-1	Lead	31.9	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:33	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:50	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-16	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-39-3	Barium	1190		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-47-3	Chromium	23.8	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:36	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:54	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-18	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-39-3	Barium	1180		1	77.9	500	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-47-3	Chromium	11.6	J	1	10.4	50.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7439-92-1	Lead	60.0	U	1	19.4	60.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:38	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/15/22 23:58	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-20	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	100	U	1	30.8	100	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-39-3	Barium	1140		1	77.9	500	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-43-9	Cadmium	30.0	U	1	2.60	30.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-47-3	Chromium	95.9		1	10.4	50.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7439-92-1	Lead	23.1	J	1	19.4	60.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7439-97-6	Mercury	2.00	U	1	0.70	2.00	ug/L	08/15/22 11:05	08/15/22 15:40	SW7470A
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010
7440-22-4	Silver	50.0	U	1	8.20	50.0	ug/L	08/14/22 12:50	08/16/22 00:02	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV87	Mercury	3.82	4.0	96	90 - 110	CV	08/15/2022	14:27	LB121524

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV37	Mercury	4.78	5.0	96	90 - 110	CV	08/15/2022	14:31	LB121524
CCV38	Mercury	4.96	5.0	99	90 - 110	CV	08/15/2022	15:02	LB121524
CCV39	Mercury	5.04	5.0	101	90 - 110	CV	08/15/2022	15:29	LB121524
CCV40	Mercury	4.84	5.0	97	90 - 110	CV	08/15/2022	15:56	LB121524
CCV41	Mercury	5.01	5.0	100	90 - 110	CV	08/15/2022	16:23	LB121524
CCV42	Mercury	4.98	5.0	100	90 - 110	CV	08/15/2022	16:48	LB121524

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	993	1000	99	90 - 110	P	08/15/2022	15:11	LB121529
	Barium	524	520	101	90 - 110	P	08/15/2022	15:11	LB121529
	Cadmium	481	510	94	90 - 110	P	08/15/2022	15:11	LB121529
	Chromium	526	520	101	90 - 110	P	08/15/2022	15:11	LB121529
	Lead	981	1000	98	90 - 110	P	08/15/2022	15:11	LB121529
	Selenium	1040	1000	104	90 - 110	P	08/15/2022	15:11	LB121529
	Silver	253	250	101	90 - 110	P	08/15/2022	15:11	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Arsenic	20.3	20.0	102	80 - 120	P	08/15/2022	15:23	LB121529
	Barium	108	100	108	80 - 120	P	08/15/2022	15:23	LB121529
	Cadmium	5.99	6.0	100	80 - 120	P	08/15/2022	15:23	LB121529
	Chromium	10.9	10.0	109	80 - 120	P	08/15/2022	15:23	LB121529
	Lead	11.6	12.0	97	80 - 120	P	08/15/2022	15:23	LB121529
	Selenium	20.1	20.0	101	80 - 120	P	08/15/2022	15:23	LB121529
	Silver	10.5	10.0	104	80 - 120	P	08/15/2022	15:23	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	5160	5000	103	90 - 110	P	08/15/2022	15:51	LB121529
	Barium	9780	10000	98	90 - 110	P	08/15/2022	15:51	LB121529
	Cadmium	2570	2500	103	90 - 110	P	08/15/2022	15:51	LB121529
	Chromium	1070	1000	107	90 - 110	P	08/15/2022	15:51	LB121529
	Lead	5020	5000	100	90 - 110	P	08/15/2022	15:51	LB121529
	Selenium	5160	5000	103	90 - 110	P	08/15/2022	15:51	LB121529
	Silver	1350	1250	108	90 - 110	P	08/15/2022	15:51	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Arsenic	19.9	20.0	99	80 - 120	P	08/15/2022	16:00	LB121529
	Barium	106	100	106	80 - 120	P	08/15/2022	16:00	LB121529
	Cadmium	6.09	6.0	101	80 - 120	P	08/15/2022	16:00	LB121529
	Chromium	11.2	10.0	112	80 - 120	P	08/15/2022	16:00	LB121529
	Lead	11.1	12.0	93	80 - 120	P	08/15/2022	16:00	LB121529
	Selenium	23.0	20.0	115	80 - 120	P	08/15/2022	16:00	LB121529
	Silver	10.8	10.0	108	80 - 120	P	08/15/2022	16:00	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Arsenic	4990	5000	100	90 - 110	P	08/15/2022	17:06	LB121529
	Barium	9180	10000	92	90 - 110	P	08/15/2022	17:06	LB121529
	Cadmium	2490	2500	99	90 - 110	P	08/15/2022	17:06	LB121529
	Chromium	1050	1000	105	90 - 110	P	08/15/2022	17:06	LB121529
	Lead	4840	5000	97	90 - 110	P	08/15/2022	17:06	LB121529
	Selenium	4990	5000	100	90 - 110	P	08/15/2022	17:06	LB121529
	Silver	1330	1250	107	90 - 110	P	08/15/2022	17:06	LB121529
CCV03	Arsenic	4950	5000	99	90 - 110	P	08/15/2022	17:57	LB121529
	Barium	9820	10000	98	90 - 110	P	08/15/2022	17:57	LB121529
	Cadmium	2470	2500	99	90 - 110	P	08/15/2022	17:57	LB121529
	Chromium	1040	1000	104	90 - 110	P	08/15/2022	17:57	LB121529
	Lead	4810	5000	96	90 - 110	P	08/15/2022	17:57	LB121529
	Selenium	4950	5000	99	90 - 110	P	08/15/2022	17:57	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	17:57	LB121529
CCV04	Arsenic	5030	5000	101	90 - 110	P	08/15/2022	19:07	LB121529
	Barium	9700	10000	97	90 - 110	P	08/15/2022	19:07	LB121529
	Cadmium	2480	2500	99	90 - 110	P	08/15/2022	19:07	LB121529
	Chromium	1050	1000	105	90 - 110	P	08/15/2022	19:07	LB121529
	Lead	4870	5000	97	90 - 110	P	08/15/2022	19:07	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	19:07	LB121529
	Silver	1330	1250	107	90 - 110	P	08/15/2022	19:07	LB121529
CCV05	Arsenic	4980	5000	100	90 - 110	P	08/15/2022	19:22	LB121529
	Barium	9570	10000	96	90 - 110	P	08/15/2022	19:22	LB121529
	Cadmium	2420	2500	97	90 - 110	P	08/15/2022	19:22	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/15/2022	19:22	LB121529
	Lead	4780	5000	96	90 - 110	P	08/15/2022	19:22	LB121529
	Selenium	5010	5000	100	90 - 110	P	08/15/2022	19:22	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	19:22	LB121529
CCV06	Arsenic	5000	5000	100	90 - 110	P	08/15/2022	20:10	LB121529
	Barium	9640	10000	96	90 - 110	P	08/15/2022	20:10	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	20:10	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	20:10	LB121529
	Lead	4810	5000	96	90 - 110	P	08/15/2022	20:10	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	20:10	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV06	Silver	1330	1250	106	90 - 110	P	08/15/2022	20:10	LB121529
CCV07	Arsenic	4970	5000	99	90 - 110	P	08/15/2022	20:56	LB121529
	Barium	9550	10000	96	90 - 110	P	08/15/2022	20:56	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	20:56	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	20:56	LB121529
	Lead	4800	5000	96	90 - 110	P	08/15/2022	20:56	LB121529
	Selenium	5000	5000	100	90 - 110	P	08/15/2022	20:56	LB121529
	Silver	1320	1250	105	90 - 110	P	08/15/2022	20:56	LB121529
CCV08	Arsenic	4970	5000	99	90 - 110	P	08/15/2022	21:45	LB121529
	Barium	9620	10000	96	90 - 110	P	08/15/2022	21:45	LB121529
	Cadmium	2430	2500	97	90 - 110	P	08/15/2022	21:45	LB121529
	Chromium	1030	1000	103	90 - 110	P	08/15/2022	21:45	LB121529
	Lead	4830	5000	97	90 - 110	P	08/15/2022	21:45	LB121529
	Selenium	5030	5000	101	90 - 110	P	08/15/2022	21:45	LB121529
	Silver	1320	1250	106	90 - 110	P	08/15/2022	21:45	LB121529
CCV09	Arsenic	4900	5000	98	90 - 110	P	08/15/2022	22:32	LB121529
	Barium	9640	10000	96	90 - 110	P	08/15/2022	22:32	LB121529
	Cadmium	2390	2500	96	90 - 110	P	08/15/2022	22:32	LB121529
	Chromium	1010	1000	101	90 - 110	P	08/15/2022	22:32	LB121529
	Lead	4760	5000	95	90 - 110	P	08/15/2022	22:32	LB121529
	Selenium	4970	5000	99	90 - 110	P	08/15/2022	22:32	LB121529
	Silver	1300	1250	104	90 - 110	P	08/15/2022	22:32	LB121529
CCV10	Arsenic	4900	5000	98	90 - 110	P	08/15/2022	23:21	LB121529
	Barium	9730	10000	97	90 - 110	P	08/15/2022	23:21	LB121529
	Cadmium	2400	2500	96	90 - 110	P	08/15/2022	23:21	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/15/2022	23:21	LB121529
	Lead	4780	5000	96	90 - 110	P	08/15/2022	23:21	LB121529
	Selenium	4980	5000	100	90 - 110	P	08/15/2022	23:21	LB121529
	Silver	1300	1250	104	90 - 110	P	08/15/2022	23:21	LB121529
CCV11	Arsenic	4910	5000	98	90 - 110	P	08/16/2022	00:11	LB121529
	Barium	9540	10000	95	90 - 110	P	08/16/2022	00:11	LB121529
	Cadmium	2400	2500	96	90 - 110	P	08/16/2022	00:11	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	00:11	LB121529
	Lead	4800	5000	96	90 - 110	P	08/16/2022	00:11	LB121529

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV11	Selenium	4980	5000	100	90 - 110	P	08/16/2022	00:11	LB121529
	Silver	1290	1250	104	90 - 110	P	08/16/2022	00:11	LB121529
CCV12	Arsenic	4850	5000	97	90 - 110	P	08/16/2022	00:58	LB121529
	Barium	9480	10000	95	90 - 110	P	08/16/2022	00:58	LB121529
	Cadmium	2380	2500	95	90 - 110	P	08/16/2022	00:58	LB121529
	Chromium	1010	1000	101	90 - 110	P	08/16/2022	00:58	LB121529
	Lead	4750	5000	95	90 - 110	P	08/16/2022	00:58	LB121529
	Selenium	4940	5000	99	90 - 110	P	08/16/2022	00:58	LB121529
	Silver	1290	1250	103	90 - 110	P	08/16/2022	00:58	LB121529
CCV13	Arsenic	4840	5000	97	90 - 110	P	08/16/2022	01:38	LB121529
	Barium	9500	10000	95	90 - 110	P	08/16/2022	01:38	LB121529
	Cadmium	2390	2500	96	90 - 110	P	08/16/2022	01:38	LB121529
	Chromium	1020	1000	102	90 - 110	P	08/16/2022	01:38	LB121529
	Lead	4790	5000	96	90 - 110	P	08/16/2022	01:38	LB121529
	Selenium	4930	5000	99	90 - 110	P	08/16/2022	01:38	LB121529
	Silver	1290	1250	104	90 - 110	P	08/16/2022	01:38	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRA	Mercury	0.19	0.2	95	40 - 160	CV	08/15/2022	14:39	LB121524
CRI01	Arsenic	19.1	20.0	95	40 - 160	P	08/15/2022	15:34	LB121529
	Barium	104	100	104	40 - 160	P	08/15/2022	15:34	LB121529
	Cadmium	6.01	6.0	100	40 - 160	P	08/15/2022	15:34	LB121529
	Chromium	11.0	10.0	110	40 - 160	P	08/15/2022	15:34	LB121529
	Lead	11.2	12.0	93	40 - 160	P	08/15/2022	15:34	LB121529
	Selenium	21.5	20.0	108	40 - 160	P	08/15/2022	15:34	LB121529
	Silver	10.4	10.0	104	40 - 160	P	08/15/2022	15:34	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB87	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	14:29	LB121524

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB37	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	14:33	LB121524
CCB38	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:04	LB121524
CCB39	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:31	LB121524
CCB40	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	15:58	LB121524
CCB41	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	16:26	LB121524
CCB42	Mercury	0.20	+/-0.20	U	0.20	CV	08/15/2022	16:51	LB121524

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	15:30	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	15:30	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	15:30	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	15:30	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	15:30	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	15:30	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	15:30	LB121529

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	16:04	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	16:04	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	16:04	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	16:04	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	16:04	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	16:04	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	16:04	LB121529
CCB02	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	17:10	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	17:10	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	17:10	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	17:10	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	17:10	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	17:10	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	17:10	LB121529
CCB03	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	18:00	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	18:00	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	18:00	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	18:00	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	18:00	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	18:00	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	18:00	LB121529
CCB04	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	19:10	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	19:10	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	19:10	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	19:10	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	19:10	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	19:10	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	19:10	LB121529
CCB05	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	19:26	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	19:26	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	19:26	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	19:26	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	19:26	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	19:26	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	19:26	LB121529
CCB06	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	20:14	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	20:14	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	20:14	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	20:14	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	20:14	LB121529

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	20:14	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	20:14	LB121529
CCB07	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	21:00	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	21:00	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	21:00	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	21:00	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	21:00	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	21:00	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	21:00	LB121529
CCB08	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	21:49	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	21:49	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	21:49	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	21:49	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	21:49	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	21:49	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	21:49	LB121529
CCB09	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	22:36	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	22:36	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	22:36	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	22:36	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	22:36	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	22:36	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	22:36	LB121529
CCB10	Arsenic	20.0	+/-20.0	U	20.0	P	08/15/2022	23:25	LB121529
	Barium	100	+/-100	U	100	P	08/15/2022	23:25	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/15/2022	23:25	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/15/2022	23:25	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/15/2022	23:25	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/15/2022	23:25	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/15/2022	23:25	LB121529
CCB11	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	00:14	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	00:14	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	00:14	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	00:14	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	00:14	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	00:14	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	00:14	LB121529
CCB12	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	01:02	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	01:02	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	01:02	LB121529

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB12	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	01:02	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	01:02	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	01:02	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	01:02	LB121529
CCB13	Arsenic	20.0	+/-20.0	U	20.0	P	08/16/2022	01:42	LB121529
	Barium	100	+/-100	U	100	P	08/16/2022	01:42	LB121529
	Cadmium	6.00	+/-6.00	U	6.00	P	08/16/2022	01:42	LB121529
	Chromium	10.0	+/-10.0	U	10.0	P	08/16/2022	01:42	LB121529
	Lead	12.0	+/-12.0	U	12.0	P	08/16/2022	01:42	LB121529
	Selenium	20.0	+/-20.0	U	20.0	P	08/16/2022	01:42	LB121529
	Silver	10.0	+/-10.0	U	10.0	P	08/16/2022	01:42	LB121529

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146975TB		**WATER**		**Batch Number:**	**PB147013**		**Prep Date:**	**08/15/2022**	
	Mercury	2.00	<2.00	U	2.00	CV	08/15/2022	16:30	LB121524

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB147013BL		**WATER**		**Batch Number:**	**PB147013**		**Prep Date:**	**08/15/2022**	
	Mercury	0.20	<0.20	U	0.20	CV	08/15/2022	14:46	LB121524

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB146975TB		**WATER**		**Batch Number:**	**PB147028**		**Prep Date:**	**08/14/2022**	
	Arsenic	100	<100	U	100	P	08/15/2022	22:28	LB121529
	Barium	500	<500	U	500	P	08/15/2022	22:28	LB121529
	Cadmium	30.0	<30.0	U	30.0	P	08/15/2022	22:28	LB121529
	Chromium	36.9	<50.0	J	50.0	P	08/15/2022	22:28	LB121529
	Lead	60.0	<60.0	U	60.0	P	08/15/2022	22:28	LB121529
	Selenium	100	<100	U	100	P	08/15/2022	22:28	LB121529
	Silver	50.0	<50.0	U	50.0	P	08/15/2022	22:28	LB121529

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB147028BL		**WATER**		**Batch Number:**	**PB147028**		**Prep Date:**	**08/14/2022**	
	Arsenic	100	<100	U	100	P	08/15/2022	22:20	LB121529
	Barium	500	<500	U	500	P	08/15/2022	22:20	LB121529
	Cadmium	30.0	<30.0	U	30.0	P	08/15/2022	22:20	LB121529
	Chromium	50.0	<50.0	U	50.0	P	08/15/2022	22:20	LB121529
	Lead	60.0	<60.0	U	60.0	P	08/15/2022	22:20	LB121529
	Selenium	100	<100	U	100	P	08/15/2022	22:20	LB121529
	Silver	50.0	<50.0	U	50.0	P	08/15/2022	22:20	LB121529

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Arsenic	-3.87			-20	20	08/15/2022	15:38	LB121529
	Barium	8.14	6.0	136	-94	106	08/15/2022	15:38	LB121529
	Cadmium	-0.30	1.0	30	-5	7	08/15/2022	15:38	LB121529
	Chromium	61.1	52.0	118	42	62	08/15/2022	15:38	LB121529
	Lead	-1.92			-12	12	08/15/2022	15:38	LB121529
	Selenium	-0.32			-20	20	08/15/2022	15:38	LB121529
	Silver	-7.67			-10	10	08/15/2022	15:38	LB121529
ICSAB01	Arsenic	95.8	100	96	85	120	08/15/2022	15:47	LB121529
	Barium	527	540	98	440	640	08/15/2022	15:47	LB121529
	Cadmium	982	970	101	820	1100	08/15/2022	15:47	LB121529
	Chromium	604	540	112	460	620	08/15/2022	15:47	LB121529
	Lead	49.7	49.0	101	37	61	08/15/2022	15:47	LB121529
	Selenium	53.6	46.0	116	26	66	08/15/2022	15:47	LB121529
	Silver	229	200	114	170	230	08/15/2022	15:47	LB121529

METAL QC DATA

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4189

contract: loui01 **lab code:** CHEM **case no.:** N4189 **sas no.:** N4189

matrix: Water **sample id:** N4189-20 **client id:** SB11MS

Percent Solids for Sample: NA **Spiked ID:** N4189-20MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3740		100	U	4000	94		P
Barium	ug/L	75 - 125	2110		1140		1000	97		P
Cadmium	ug/L	75 - 125	936		30.0	U	1000	94		P
Chromium	ug/L	75 - 125	2010		95.9		2000	96		P
Lead	ug/L	75 - 125	4620		23.1	J	5000	92		P
Mercury	ug/L	75 - 125	42.7		2.00	U	40.0	107		CV
Selenium	ug/L	75 - 125	9420		100	U	10000	94		P
Silver	ug/L	75 - 125	380		50.0	U	380	100		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Louis Berger U.S., Inc., A WSP Company **level:** low **sdg no.:** N4189

contract: loui01 **lab code:** CHEM **case no.:** N4189 **sas no.:** N4189

matrix: Water **sample id:** N4189-20 **client id:** SB11MSD

Percent Solids for Sample: NA **Spiked ID:** N4189-20MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3700		100	U	4000	92		P
Barium	ug/L	75 - 125	2110		1140		1000	98		P
Cadmium	ug/L	75 - 125	935		30.0	U	1000	94		P
Chromium	ug/L	75 - 125	2020		95.9		2000	96		P
Lead	ug/L	75 - 125	4630		23.1	J	5000	92		P
Mercury	ug/L	75 - 125	35.2		2.00	U	40.0	88		CV
Selenium	ug/L	75 - 125	9340		100	U	10000	93		P
Silver	ug/L	75 - 125	381		50.0	U	380	100		P

CHEMTECH

Metals
- 5b -

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: Water **Sample ID:** N4189-20 **Client ID:** SB11DUP

Percent Solids for Sample: NA **Duplicate ID** N4189-20DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	1140		1150		1		P
Cadmium	ug/L	20	30.0	U	30.0	U			P
Chromium	ug/L	20	95.9		97.0		1		P
Lead	ug/L	20	23.1	J	60.0	U	200.0		P
Mercury	ug/L	20	2.00	U	2.00	U			CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **Level:** LOW **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Matrix: Water **Sample ID:** N4189-20MS **Client ID:** SB11MSD

Percent Solids for Sample: NA **Duplicate ID** N4189-20MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	3740		3700		1		P
Barium	ug/L	20	2110		2110		0		P
Cadmium	ug/L	20	936		935		0		P
Chromium	ug/L	20	2010		2020		0		P
Lead	ug/L	20	4620		4630		0		P
Mercury	ug/L	20	42.7		35.2		19		CV
Selenium	ug/L	20	9420		9340		1		P
Silver	ug/L	20	380		381		0		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB147013BS							
Mercury	ug/L	4.0	3.87		97	80 - 120	CV

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB147028BS							
Arsenic	ug/L	4000	3980		100	80 - 120	P
Barium	ug/L	1000	1070		107	80 - 120	P
Cadmium	ug/L	1000	947		95	80 - 120	P
Chromium	ug/L	2000	2160		108	80 - 120	P
Lead	ug/L	5000	4910		98	80 - 120	P
Selenium	ug/L	10000	10500		105	80 - 120	P
Silver	ug/L	380	411		108	80 - 120	P

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

SB11L

Lab Name: Chemtech Consulting Group **Contract:** loui01

Lab Code: CHEM **Lb No.:** lb121529 **Lab Sample ID :** N4189-20L **SDG No.:** N4189

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	100	U	500	U			P
Barium	1140		1170	J	2		P
Cadmium	30.0	U	150	U			P
Chromium	95.9		89.9	J	6		P
Lead	23.1	J	300	U	100.0		P
Mercury	2.00	U	10.0	U			CV
Selenium	100	U	500	U			P
Silver	50.0	U	250	U			P

METAL PREPARATION & INSTRUMENT DATA

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0001380	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000890	0.0000000	0.0000460	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001960	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001430	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0005750
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Arsenic	193.759	-0.0019440	0.0000000	0.0000000	0.0000000	0.0003800
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0002110	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000700	-0.0014440
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0004280	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0001890	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Arsenic	193.759	0.0000000	0.0002020	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	-0.0001570	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0001070	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Case No.:** N4189 **SAS No.:** N4189

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0001560	-0.0003220
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0001090
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0001700	0.0000000	-0.0007490	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4189 **SAS No.:** N4189

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB147013**						
N4189-02	SB18	SAM	WATER	08/15/2022	3.0	30.0	
N4189-04	SB19	SAM	WATER	08/15/2022	3.0	30.0	
N4189-06	SB20	SAM	WATER	08/15/2022	3.0	30.0	
N4189-08	SB15	SAM	WATER	08/15/2022	3.0	30.0	
N4189-10	SB16	SAM	WATER	08/15/2022	3.0	30.0	
N4189-12	SB17	SAM	WATER	08/15/2022	3.0	30.0	
N4189-14	SB13	SAM	WATER	08/15/2022	3.0	30.0	
N4189-16	SB12	SAM	WATER	08/15/2022	3.0	30.0	
N4189-18	SB14	SAM	WATER	08/15/2022	3.0	30.0	
N4189-20	SB11	SAM	WATER	08/15/2022	3.0	30.0	
N4189-20DUP	SB11DUP	DUP	WATER	08/15/2022	3.0	30.0	
N4189-20MS	SB11MS	MS	WATER	08/15/2022	3.0	30.0	
N4189-20MSD	SB11MSD	MSD	WATER	08/15/2022	3.0	30.0	
PB146975TB	PB146975TB	MB	WATER	08/15/2022	3.0	30.0	
PB147013BL	PB147013BL	MB	WATER	08/15/2022	30.0	30.0	
PB147013BS	PB147013BS	LCS	WATER	08/15/2022	30.0	30.0	

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Contract: loui01 **Lab Code:** CHEM **Method:**

Case No.: N4189 **SAS No.:** N4189

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB147028**						
N4189-02	SB18	SAM	WATER	08/14/2022	5.0	25.0	
N4189-04	SB19	SAM	WATER	08/14/2022	5.0	25.0	
N4189-06	SB20	SAM	WATER	08/14/2022	5.0	25.0	
N4189-08	SB15	SAM	WATER	08/14/2022	5.0	25.0	
N4189-10	SB16	SAM	WATER	08/14/2022	5.0	25.0	
N4189-12	SB17	SAM	WATER	08/14/2022	5.0	25.0	
N4189-14	SB13	SAM	WATER	08/14/2022	5.0	25.0	
N4189-16	SB12	SAM	WATER	08/14/2022	5.0	25.0	
N4189-18	SB14	SAM	WATER	08/14/2022	5.0	25.0	
N4189-20	SB11	SAM	WATER	08/14/2022	5.0	25.0	
N4189-20DUP	SB11DUP	DUP	WATER	08/14/2022	5.0	25.0	
N4189-20MS	SB11MS	MS	WATER	08/14/2022	5.0	25.0	
N4189-20MSD	SB11MSD	MSD	WATER	08/14/2022	5.0	25.0	
PB146975TB	PB146975TB	MB	WATER	08/14/2022	5.0	25.0	
PB147028BL	PB147028BL	MB	WATER	08/14/2022	5.0	25.0	
PB147028BS	PB147028BS	LCS	WATER	08/14/2022	5.0	25.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121524

Start date: 08/15/2022 **End date:** 08/15/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1412	HG
S0.2	S0.2	1	1415	HG
S2.5	S2.5	1	1417	HG
S5	S5	1	1419	HG
S7.5	S7.5	1	1422	HG
S10	S10	1	1424	HG
ICV87	ICV87	1	1427	HG
ICB87	ICB87	1	1429	HG
CCV37	CCV37	1	1431	HG
CCB37	CCB37	1	1433	HG
CRA	CRA	1	1439	HG
PB147013BL	PB147013BL	1	1446	HG
PB147013BS	PB147013BS	1	1448	HG
CCV38	CCV38	1	1502	HG
CCB38	CCB38	1	1504	HG
N4189-02	SB18	1	1515	HG
N4189-04	SB19	1	1518	HG
N4189-06	SB20	1	1520	HG
N4189-08	SB15	1	1522	HG
N4189-10	SB16	1	1524	HG
N4189-12	SB17	1	1527	HG
CCV39	CCV39	1	1529	HG
CCB39	CCB39	1	1531	HG
N4189-14	SB13	1	1533	HG
N4189-16	SB12	1	1536	HG
N4189-18	SB14	1	1538	HG
N4189-20	SB11	1	1540	HG
N4189-20DUP	SB11DUP	1	1542	HG
N4189-20MS	SB11MS	1	1545	HG
N4189-20MSD	SB11MSD	1	1547	HG
CCV40	CCV40	1	1556	HG
CCB40	CCB40	1	1558	HG
CCV41	CCV41	1	1623	HG
CCB41	CCB41	1	1626	HG
PB146975TB	PB146975TB	1	1630	HG
N4189-20L	SB11L	5	1635	HG
CCV42	CCV42	1	1648	HG
CCB42	CCB42	1	1651	HG

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121529

Start date: 08/15/2022 **End date:** 08/16/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1448	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1452	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1456	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1500	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1503	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1507	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1511	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1523	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1530	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1534	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1538	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1547	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1551	Ag,As,Ba,Cd,Cr,Pb,Se
LLCCV01	LLCCV01	1	1600	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1604	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1706	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1710	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1757	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1800	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1907	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1910	Ag,As,Ba,Cd,Cr,Pb,Se
CCV05	CCV05	1	1922	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1926	Ag,As,Ba,Cd,Cr,Pb,Se
CCV06	CCV06	1	2010	Ag,As,Ba,Cd,Cr,Pb,Se
CCB06	CCB06	1	2014	Ag,As,Ba,Cd,Cr,Pb,Se
CCV07	CCV07	1	2056	Ag,As,Ba,Cd,Cr,Pb,Se
CCB07	CCB07	1	2100	Ag,As,Ba,Cd,Cr,Pb,Se
CCV08	CCV08	1	2145	Ag,As,Ba,Cd,Cr,Pb,Se
CCB08	CCB08	1	2149	Ag,As,Ba,Cd,Cr,Pb,Se
PB147028BL	PB147028BL	1	2220	Ag,As,Ba,Cd,Cr,Pb,Se
PB147028BS	PB147028BS	1	2224	Ag,As,Ba,Cd,Cr,Pb,Se
PB146975TB	PB146975TB	1	2228	Ag,As,Ba,Cd,Cr,Pb,Se
CCV09	CCV09	1	2232	Ag,As,Ba,Cd,Cr,Pb,Se
CCB09	CCB09	1	2236	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-02	SB18	1	2317	Ag,As,Ba,Cd,Cr,Pb,Se
CCV10	CCV10	1	2321	Ag,As,Ba,Cd,Cr,Pb,Se
CCB10	CCB10	1	2325	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-04	SB19	1	2329	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-06	SB20	1	2333	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-08	SB15	1	2338	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-10	SB16	1	2342	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-12	SB17	1	2346	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-14	SB13	1	2350	Ag,As,Ba,Cd,Cr,Pb,Se

metals
- 14 -
ANALYSIS RUN LOG

Client: Louis Berger U.S., Inc., A WSP Company **Contract:** loui01

Lab code: CHEM **Case no.:** N4189 **Sas no.:** N4189 **Sdg no.:** N4189

Instrument id number: **Method:** **Run number:** LB121529

Start date: 08/15/2022 **End date:** 08/16/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
N4189-16	SB12	1	2354	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-18	SB14	1	2358	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20	SB11	1	0002	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20DUP	SB11DUP	1	0006	Ag,As,Ba,Cd,Cr,Pb,Se
CCV11	CCV11	1	0011	Ag,As,Ba,Cd,Cr,Pb,Se
CCB11	CCB11	1	0014	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20L	SB11L	5	0019	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20MS	SB11MS	1	0023	Ag,As,Ba,Cd,Cr,Pb,Se
N4189-20MSD	SB11MSD	1	0026	Ag,As,Ba,Cd,Cr,Pb,Se
CCV12	CCV12	1	0058	Ag,As,Ba,Cd,Cr,Pb,Se
CCB12	CCB12	1	0102	Ag,As,Ba,Cd,Cr,Pb,Se
CCV13	CCV13	1	0138	Ag,As,Ba,Cd,Cr,Pb,Se
CCB13	CCB13	1	0142	Ag,As,Ba,Cd,Cr,Pb,Se

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	N4189	**OrderDate:**	8/11/2022 4:00:00 PM
Client:	Louis Berger U.S., Inc., A WSP Company	**Project:**	QED1059 Phase II SCI
Contact:	Jonathan Ganz	**Location:**	K11,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N4189-01	**SB18**	**SOIL**			**08/10/22 07:45**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:00	
N4189-02	**SB18**	**SOIL**			**08/10/22 07:45**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:15	
			Ignitability	1030			08/15/22 13:00	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:09	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:28	
N4189-03	**SB19**	**SOIL**			**08/10/22 09:50**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:15	
N4189-04	**SB19**	**SOIL**			**08/10/22 09:50**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:19	
			Ignitability	1030			08/15/22 13:12	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:32	
N4189-05	**SB20**	**SOIL**			**08/10/22 10:45**			**08/11/22**

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			Paint Filter	9095B			08/15/22 09:22	
N4189-06	**SB20**	**SOIL**			**08/10/22 10:45**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:22	
			Ignitability	1030			08/15/22 13:20	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:35	
N4189-07	**SB15**	**SOIL**			**08/10/22 12:00**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:30	
N4189-08	**SB15**	**SOIL**			**08/10/22 12:00**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:25	
			Ignitability	1030			08/15/22 13:28	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:38	
N4189-09	**SB16**	**SOIL**			**08/10/22 13:25**			**08/11/22**
			Paint Filter	9095B			08/15/22 09:37	
N4189-10	**SB16**	**SOIL**			**08/10/22 13:25**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:30	
			Ignitability	1030			08/15/22 13:35	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	

LAB CHRONICLE

			Reactive Sulfide	9034		08/15/22	08/15/22 14:40
N4189-11	**SB17**	**SOIL**			**08/10/22 14:20**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:44
N4189-12	**SB17**	**SOIL**			**08/10/22 14:20**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:33
			Ignitability	1030			08/15/22 13:42
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16
			Reactive Sulfide	9034		08/15/22	08/15/22 14:42
N4189-13	**SB13**	**SOIL**			**08/11/22 07:40**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:51
N4189-14	**SB13**	**SOIL**			**08/11/22 07:40**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:40
			Ignitability	1030			08/15/22 13:50
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16
			Reactive Sulfide	9034		08/15/22	08/15/22 14:45
N4189-15	**SB12**	**SOIL**			**08/11/22 09:25**		**08/11/22**
			Paint Filter	9095B			08/15/22 09:58
N4189-16	**SB12**	**SOIL**			**08/11/22 09:25**		**08/11/22**
			Corrosivity	9045D			08/12/22 12:44

CHEMTECH
284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

			Ignitability	1030			08/15/22 13:58	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:16	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:48	
N4189-17	**SB14**	**SOIL**			**08/11/22 11:00**			**08/11/22**
			Paint Filter	9095B			08/15/22 10:05	
N4189-18	**SB14**	**SOIL**			**08/11/22 11:00**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:46	
			Ignitability	1030			08/15/22 14:05	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:24	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:50	
N4189-19	**SB11**	**SOIL**			**08/11/22 13:40**			**08/11/22**
			Paint Filter	9095B			08/15/22 10:12	
N4189-20	**SB11**	**SOIL**			**08/11/22 13:40**			**08/11/22**
			Corrosivity	9045D			08/12/22 12:50	
			Ignitability	1030			08/15/22 14:12	
			Reactive Cyanide	9012B		08/14/22	08/15/22 13:24	
			Reactive Sulfide	9034		08/15/22	08/15/22 14:52	

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 07:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-01	Matrix:	SOIL
		% Solid:	91.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:00	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 07:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB18	SDG No.:	N4189
Lab Sample ID:	N4189-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.39	H	1	0	0	pH		08/12/22 12:15	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:00	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:09	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:28	9034

Comments: pH result reported at temperature 20.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 09:50
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-03	Matrix:	SOIL
		% Solid:	91.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:15	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 09:50
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB19	SDG No.:	N4189
Lab Sample ID:	N4189-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.10	H	1	0	0	pH		08/12/22 12:19	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:12	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:32	9034

Comments: pH result reported at temperature 21.1 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 10:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-05	Matrix:	SOIL
		% Solid:	88.9

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:22	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 10:45
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB20	SDG No.:	N4189
Lab Sample ID:	N4189-06	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.49	H	1	0	0	pH		08/12/22 12:22	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:20	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:35	9034

Comments: pH result reported at temperature 20.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 12:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-07	Matrix:	SOIL
		% Solid:	96.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:30	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 12:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB15	SDG No.:	N4189
Lab Sample ID:	N4189-08	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.90	H	1	0	0	pH		08/12/22 12:25	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:28	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:38	9034

Comments: pH result reported at temperature 20.6 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 13:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-09	Matrix:	SOIL
		% Solid:	94.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:37	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 13:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB16	SDG No.:	N4189
Lab Sample ID:	N4189-10	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.84	H	1	0	0	pH		08/12/22 12:30	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:35	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:40	9034

Comments: pH result reported at temperature 21.0 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 14:20
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-11	Matrix:	SOIL
		% Solid:	96.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:44	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/10/22 14:20
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB17	SDG No.:	N4189
Lab Sample ID:	N4189-12	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.23	H	1	0	0	pH		08/12/22 12:33	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:42	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:42	9034

Comments: pH result reported at temperature 20.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 07:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-13	Matrix:	SOIL
		% Solid:	94.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:51	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 07:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB13	SDG No.:	N4189
Lab Sample ID:	N4189-14	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.48	H	1	0	0	pH		08/12/22 12:40	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:50	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:45	9034

Comments: pH result reported at temperature 20.5 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 09:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-15	Matrix:	SOIL
		% Solid:	88.5

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 09:58	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 09:25
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB12	SDG No.:	N4189
Lab Sample ID:	N4189-16	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.02	H	1	0	0	pH		08/12/22 12:44	9045D
Ignitability	NO		1	0	0	oC		08/15/22 13:58	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:16	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:48	9034

Comments: pH result reported at temperature 21.0 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 11:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-17	Matrix:	SOIL
		% Solid:	95.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 10:05	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 11:00
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB14	SDG No.:	N4189
Lab Sample ID:	N4189-18	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	7.34	H	1	0	0	pH		08/12/22 12:46	9045D
Ignitability	NO		1	0	0	oC		08/15/22 14:05	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:50	9034

Comments: pH result reported at temperature 21.2 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 13:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-19	Matrix:	SOIL
		% Solid:	96

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Paint Filter	1.00	U	1	1.00	1.00	ml/100gm		08/15/22 10:12	9095B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Louis Berger U.S., Inc., A WSP Company	Date Collected:	08/11/22 13:40
Project:	QED1059 Phase II SCI	Date Received:	08/11/22
Client Sample ID:	SB11	SDG No.:	N4189
Lab Sample ID:	N4189-20	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.34	H	1	0	0	pH		08/12/22 12:50	9045D
Ignitability	NO		1	0	0	oC		08/15/22 14:12	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/14/22 15:05	08/15/22 13:24	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/15/22 10:15	08/15/22 14:52	9034

Comments: pH result reported at temperature 21.8 °C

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

QC RESULT SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4189
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121486

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	**ICV**						
Corrosivity		pH	7.01	7	100	90-110	08/12/2022
Sample ID:	**CCV1**						
Corrosivity		pH	2.01	2.00	101	90-110	08/12/2022
Sample ID:	**CCV2**						
Corrosivity		pH	12.03	12.00	100	90-110	08/12/2022
Sample ID:	**CCV3**						
Corrosivity		pH	2.01	2.00	101	90-110	08/12/2022
Sample ID:	**CCV4**						
Corrosivity		pH	12.03	12.00	100	90-110	08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Verification

Client:	Louis Berger U.S., Inc., A WSP Company	**SDG No.:**	N4189
Project:	QED1059 Phase II SCI	**RunNo.:**	LB121523

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1						
Reactive Cyanide	mg/L	0.094	0.099	95	85-115	08/15/2022
Sample ID: CCV1						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV2						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV3						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	08/15/2022
Sample ID: CCV4						
Reactive Cyanide	mg/L	0.26	0.25	104	90-110	08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Initial and Continuing Calibration Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI **RunNo.:** LB121523

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB2							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB3							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022
Sample ID: CCB4							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.0050	0.005	08/15/2022

Preparation Blank Summary

Client: Louis Berger U.S., Inc., A WSP Company **SDG No.:** N4189

Project: QED1059 Phase II SCI

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB147008BL							
Reactive Cyanide	mg/Kg	< 0.0250	0.0250	U	0.05	0.05	08/15/2022
Sample ID: PB147042BL							
Reactive Sulfide	mg/Kg	< 5.0000	5.0000	U	10	10	08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4188-02
Client ID: S4DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	7.58		7.60		1	0.26		08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-01
Client ID: SB18DUP
Percent Solids for Spike Sample: 91.2

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	ml/100gm	+/-20	1.00	U	1.00	U	1	0		08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-02
Client ID: SB18DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Cyanide	mg/Kg	+/-20	0.050	U	0.049	U	1	0		08/15/2022
Ignitability	oC	+/-20	NO		NO		1	0		08/15/2022
Reactive Sulfide	mg/Kg	+/-20	10.0	U	10.0	U	1	0		08/15/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4189-20
Client ID: SB11DUP
Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	8.34		8.35		1	0.12		08/12/2022

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Duplicate Sample Summary

Client: Louis Berger U.S., Inc., A WSP Company
SDG No.: N4189
Project: QED1059 Phase II SCI
Sample ID: N4211-02
Client ID: WC-2DUP
Percent Solids for Spike Sample: 96.7

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Paint Filter	ml/100gm	+/-20	1.00	U	1.00	U	1	0		08/15/2022
Ignitability	oC	+/-20	NO		NO		1	0		08/15/2022

SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. N4189
COC Number 2036079

12
12.1

CLIENT INFORMATION	CLIENT PROJECT INFORMATION	CLIENT BILLING INFORMATION
REPORT TO BE SENT TO: COMPANY: WSP USA	PROJECT NAME: QED 1059	BILL TO: PO#:
ADDRESS: 350 Mt. Kemble Ave. 2nd Floor	PROJECT NO.: 31402661.219 LOCATION: Queens, NY	ADDRESS:
CITY Morristown, NJ STATE NJ ZIP: 07960	PROJECT MANAGER: Jon Ganz	CITY STATE: ZIP:
ATTENTION: Jon Ganz	e-mail: jon.ganz@wsp.com	ATTENTION: PHONE:
PHONE: 646-784-5533 FAX:	PHONE: 646-784-5533 FAX:	

DATA TURNAROUND INFORMATION

FAX (RUSH) ____ DAYS*
HARDCOPY (DATA PACKAGE): ____ DAYS*
EDD: ____ DAYS*
*TO BE APPROVED BY CHEMTECH *see NYCDDC contract TATs
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
- ☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
- ☐ Level 3 (Results + QC + Raw Data) ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other ____
- ☒ EDD FORMAT Equis

ANALYSIS

1. TCL VOCs
2. PAHs
3. TPH-DRO/GRO
4. PCBs
5. TCL (RCRA 8) metals
6. RCRA Characteristics
7. Paint Filter
8.
9.

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 (E)	2 (E)	3 (E)	4 (E)	5 (E)	6 (E)	7 (E)	8	9	COMMENTS
1.	SB18	Soil	X	X	8/10/22	0745	5	X	X	X	X	X	X	X			
2.	SB19	Soil	X	X		0950	5	X	X	X	X	X	X	X			
3.	SB20	Soil	X	X		1045	5	X	X	X	X	X	X	X			
4.	SB15	Soil	X	X		1200	5	X	X	X	X	X	X	X			
5.	SB16	Soil	X	X		1325	5	X	X	X	X	X	X	X			
6.	~~SB13~~ SB17	Soil	X	X		1420	5	X	X	X	X	X	X	X			
7.	~~SB12~~ SB13	Soil	X	X	8/11/22	0740	5	X	X	X	X	X	X	X			
8.	SB12	Soil	X	X		0925	5	X	X	X	X	X	X	X			
9.	SB14	Soil	X	X		1100	5	X	X	X	X	X	X	X			
10.	SB11	Soil	X	X		1340	5	X	X	X	X	X	X	X			

COMMENTS: ← Specify Preservatives
A-HCl D-NaOH
B-HN03 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. [signature]	8/11/22 1555	1. [signature]
2.		2.
3.		3.

Conditions of bottles or coolers at receipt: ☒ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.2 °C
Comments: IR Cor #1

Page ___ of ___

CLIENT: ☒ Hand Delivered ☐ Other ____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete ☒ YES ☐ NO

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255421
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-22-15

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4189 loui01
Client Name : Louis Berger U.S., Inc., A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S., Inc., A V
Invoice Contact : Jonathan Ganz

Order Date : 8/11/2022 4:00:00 PM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/11/2022 3:55:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
N4189-01	SB18	Solid	08/10/2022	07:45					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-03	SB19	Solid	08/10/2022	09:50					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-05	SB20	Solid	08/10/2022	10:45					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-07	SB15	Solid	08/10/2022	12:00					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-09	SB16	Solid	08/10/2022	13:25					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-11	SB17	Solid	08/10/2022	14:20					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-13	SB13	Solid	08/11/2022	07:40					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-15	SB12	Solid	08/11/2022	09:25					
					VOC-TCLVOA-10		8260D		2 Bus. Days
N4189-17	SB14	Solid	08/11/2022	11:00					

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : N4189 loui01
Client Name : Louis Berger U.S.. Inc.. A V
Client Contact : Jonathan Ganz
Invoice Name : Louis Berger U.S.. Inc.. A V
Invoice Contact : Jonathan Ganz

Order Date : 8/11/2022 4:00:00 PM
Project Name : QED1059 Phase II SCI
Receive DateTime : 8/11/2022 3:55:00 PM
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : Excel NY 375
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
					VOC-TCLVOA-10		8260D	2 Bus. Days	
N4189-19	SB11	Solid	08/11/2022	13:40					
					VOC-TCLVOA-10		8260D	2 Bus. Days	

Relinguished By :
Date / Time : 8/12/22 8:20

Received By :
Date / Time : 8/12/22 8:20

Storage Area : VOA Refridgerator Room

JB-PAGES (4.0)

JOINT BID

NOTICE

THE PAGES CONTAINED IN THIS JOINT BID (JB-PAGES) REPRESENT ADDITIONAL CONTRACT REQUIREMENTS APPLYING TO WORK PERFORMED IN THE PRESENCE OF PRIVATELY OWNED UTILITY FACILITIES.

(NO TEXT ON THIS PAGE)

JB-PAGES TABLE OF CONTENTS

SECTION A
JOINT BID REQUIREMENTS AND STANDARD SPECIFICATIONS

SECTION A.1 - Requirements for Joint Bid Work

A. Definitions. Additional terms are defined in Standard Construction Contract.

1. “Business Days” will mean Monday through Friday, excluding holidays.

2. “City Facility(ies)” will mean any facility owned by the City, including, but not limited to, roadways, streets, highways, parkways and other thoroughfares, bridges, sewers, culverts, catch basins, chutes and water mains.

3. “Joint Bid Project(s)” will mean a construction project that the City and Utilities agree will be awarded in accordance with applicable law and will include both City Facilities and Utility Facilities.

4. ”Pre-engineer” or “Pre-engineering” will mean a process undertaken by the Utilities on all Joint Bid Projects whereby the Utilities will determine and mark-out current Utility Facilities, and design the location and/or re-location of Utility Facilities in a manner that is to the extent practicable, efficient and cost-effective for both the City and the Utilities to avoid or ameliorate disturbances to the City Facilities and the Utilities Facilities, and in which the City and Utility participate in prior to the award of a Joint Bid Project contract.

5. “Public Work” will mean the following: (a) construction, reconstruction, installation, alteration, maintenance, repair, grading, re-grading, regulating and improvement of roadways, highways, streets, parkways and other thoroughfares, and bridges and (b) similarly for sewers, culverts, catch basins, chutes and water mains.

6. “Shared Items” will mean the bid items in the City’s construction contract in which the total cost will be paid for by the City and the Utilities in accordance with their share as mutually agreed upon.

7. "Specialty Contractor” will mean a contractor provided and paid for by the Utility, which may include the Utilities’ in-house field forces.

8. “Specific Public Work Items” will mean a detailed set of specifications prepared by the City based on the City’s engineering, design and plans that will represent the Public Work portion of the Joint Bid Project and it is these unit price items and quantities related to the Public Work that will be bid upon and evaluated by the City for the Public Work portion of the City’s construction contract.

9. “Specific Shared Items” will mean a detailed set of specifications prepared by the City based on the City’s engineering, design and plans that will represent the Shared Items portion of the Joint Bid Project and it is these unit prices and quantities related to Shared Items that will be bid upon and evaluated by the City for the Shared Items portion of the City’s construction contract.

10. “Specific Utility Work Items” will mean a detailed set of specifications prepared by the Utilities based on the Utility’s Pre-engineering that will represent the Utility Work portion of the Joint Bid Project. The Specific Utility Work Items are composed of the Joint Bid Fixed Sum Items and Joint Bid Specialty Items, as described in Section A.2 below.

11. “Utility Facility(ies)” will mean the property owned by the Utilities, including, but not limited to, pipes, poles, conduits, wires, lines and other facilities, structures or property of the Utilities that may be below ground, at ground-level or above ground, that could disturb or interfere with the Public Work.

12. “Utility” or “Utilities” will mean the utility entities participating in this Joint Bid Project.

13. “Utility Work” will mean such work as is required to be performed by the Contractor during the performance of Public Work, as defined herein, in order to maintain, protect, support, shift, alter, relocate, remove, construct, and/or replace Utility Facilities at the Utilities’ expense.

B. The City is bidding jointly this Contract. The City has combined its Public Work and Utility Work into one bid contract package. All prospective bidders should be alerted to the fact that the City prepared all specifications, drawings, and all other necessary contract documents for the Public Work and Utility Work.

C. The City has prepared contract documents which include specifications, drawings and all other necessary contract documents for the Public Work and Utility Work. The bid items, specifications, and estimated quantities have been designed to fully compensate the Contractor for its costs to perform the Public Work and Utility Work.

D. The Contractor agrees that its bid prices and the NYC Utility Price List prices for the Public Work and Utility Work will include all incremental costs and/ or additional compensation for performing Public Work and Utility Work including: coordination of its work with the Utilities, loss of productivity and efficiency, idle time, delays (including any delays occasioned by negotiation of a contract change), change in operations, mobilization, demobilization, remobilization, added cost or expense, loss of profit, other damages or impact costs that may be suffered by the Contractor because of direct or indirect obstructions due to the presence of Utility Facilities, such as conduits, ducts or duct banks containing conductors for live and/or abandoned electric, telephone, cable TV, any type of communication cables, “Non Cost Sharing” gas mains and services, steam mains, and various non-hazardous encasement materials or utility structures located within the Public Work project area.

E. In the bid solicitation documents, the City has provided estimated quantities for both Specific Public Work Items, Specific Utility Work Items, and Specific Shared Items. Bidders are required to bid a unit price on all Work in the Bid Schedules. For the purposes of identifying the lowest responsive and responsible bidder, a bidder’s unit prices bid must be calculated based on all Work, which includes the combined Specific Public Work Items, the Specific Utility Work Items, and the Specific Shared Items.

F. If the Utility determines that the Contractor is not qualified or best suited to perform a specific scope of Utility Work, the Utility has the right to utilize their Specialty Contractors. If the Contractor claims that delays were caused by a Utility for failure to supply and/or provide Specialty Contractors in a timely manner, then the Contractor may bring a claim against the Utility. To the extent the Contractor claims that a delay was caused by a Utility, the Contractor will be limited to bringing such legal action in a court of law and may not seek arbitration over any delay claims or delay-related claims. If the Contractor and Utility initiate a legal action against each other, this legal action will be outside the jurisdiction of the City’s Contract Dispute Resolution Board process and the City will not be a party in the litigation process. Neither the Contractor nor the Utility may bring a delay claim against the City through either a

court of law or the City's Contract Dispute Resolution Board process. Refer to the Standard Construction Contract for additional details. The Contractor must allow the Utility's Specialty Contractors to have reasonable access to the work area with prior notice and may, with the exception of the Utilities' in-house field forces, condition such access on proof of insurance acceptable to the Engineer.

G. The Lower Manhattan Joint Bid Agreement, dated June 6, 2006, shall not apply to this project. The Contractor agrees that the Utilities are third-party beneficiaries of the contract for a Joint Bid Project, and that the Utilities shall be entitled to rely upon and enforce any and all terms and conditions of the Contract for a Joint Bid Project as it pertains to the Contractor and the performance of the Public Work, Shared Items, and Utility Work.

SECTION A.2 – Price List Method

A. This Contract has been prepared using the Price List Method. The Price List Method consists of all of the following.

1. The Contractor bids on the items listed in the Bid Schedule ("Bid Items")
2. The Contractor agrees that the prices listed for items in the Price List ("PL Items") represent full and complete compensation for the Specific Utility Work Items listed in the NYC Utility Price List. The NYC Utility Price List prices are fixed for the duration of the Contract, regardless of any time extensions.
3. The Bid Schedule contains Joint Bid Fixed Sum Items ("JB FS Items") that will be used for payment of Utility Work. These items may include:

Item No.	Description	Unit
JB-FS-AL	ALTICE JB FIXED SUM	F.S.
JB-FS-CC	CROWN CASTLE JB FIXED SUM	F.S.
JB-FS-CE	CON EDISON JB FIXED SUM	F.S.
JB-FS-EX	EXTNET JB FIXED SUM	F.S.
JB-FS-NG	NATIONAL GRID JB FIXED SUM	F.S.
JB-FS-LI	LIPA-PSEG JB FIXED SUM	F.S.
JB-FS-RC	RCN JB FIXED SUM	F.S.
JB-FS-SP	CHARTER-SPECTRUM-TW JB FIXED SUM	F.S.
JB-FS-VZ	ECS-VERIZON JB FIXED SUM	F.S.

4. If this Contract contains Specialty JB items that are not covered by the NYC Utility Price List ("JB Specialty Items"), the Contractor will bid on the JB Special items listed in the separate JB Specialty Item Bid Schedule. For clarity, standard City items that are not used in the Bid Schedule may be used as JB Specialty Items.

B. Any costs that are to be paid for by the Utility will be paid according to the JB FS Items, whether the work is a Bid Item, PL Item, or JB Specialty Item.

C. There is no restriction as to which items may be used to pay for Utility Work – any Bid Item, PL Item (regardless of the utility), or JB Specialty Item (regardless of the utility) may be used. Utility may use any applicable item from the Bid Items, the PL Items, or the JB Specialty Items, whether for anticipated or unanticipated Utility work, regardless of whether the item is considered or defined as a City item, such Utility's item, or another Utility's item. In consultation with the Utilities, the Engineer is responsible for verifying the applicability of items proposed for use by the Utilities in accordance with any agreement in effect between the City and the Utilities. The arbitrator(s) under Section A.4 shall have the sole and exclusive authority to determine which items are applicable should there be a dispute between any Utility and the Contractor on such issue.

D. Quantities of work to be paid for under the JB FS Items must be tracked separately from the quantities of work paid for under the Bid Items. The method and format of separate tracking must be submitted to the Engineer for review and processing.

E. Overruns:

1. Bid Items: Quantities of Bid Items paid for according to the JB FS Items are not overruns for the purpose of Standard Construction Contract Article 26.1. However, if the City negotiates a new unit price for an item per Article 26.1, that new unit price will also be used for payment under the JB FS Items.

2. JB FS Items: The City will not pay the Contractor directly when there is an overrun of the JB FS Items, except when the City's RE determines that such overruns are caused by field conditions impacting planned City work, or scope of work changes. Overruns not paid by City will be paid directly to Contractor by the Utility at the established unit rate for the Bid Items, the PL Items, or the JB Specialty Items and according to the same retainage requirements as applicable between the City and the Contractor. In order to facilitate the shared cost reconciliation between the City and the Utilities, the Contractor must provide details of all payments from the Utilities. These details must include the items, quantities, and amounts that are covered by the payment.

   In the event that funds are insufficient in the Utility budget code to continue payments under the JB FS Item, the Engineer may determine that all future payments under the JB FS Item are overruns, and will be paid directly to the Contractor by the Utility as specified in the paragraph above.

F. Extra Work:

1. If during construction the Contractor encounters utility facilities interferences or utility scope of work that it believes is not covered by the Contract, then the Contractor must immediately notify the City and the Utility in writing, describing the nature and location of the extra work in question. The Utility then has five (5) business days to investigate the conditions and then either:

   i. Advise the Contractor and the City in writing that no interference with its facilities exists at the location in question, and hence that the Contractor may proceed with City work without providing for any impact from Company facilities;

   ii. Advise the Contractor and the City in writing that the Contract items provide for the scope of work encountered, specifying the exact unit items that cover the work;

   iii. Advise the Contractor and the City in writing that it intends to perform the necessary utility work with Utility forces or with Specialty Contractors, but not limited to, relocating its facility out of the way of the proposed City work. In this case, the Utility must provide a written schedule for the performance of the utility work it proposes to perform, which shall be subject to approval by the City based on its impact to the Contractor's currently approved progress schedule. Upon approval of the Utility's schedule by the City, the Contractor must provide access to the worksite to the Utility and/or any Specialty Contractors hired by it to perform this utility work. If necessary, the City may grant a contract time extension for delays caused by the performance of such utility work by the Utility.

   iv. Reasonably specify in writing the scope of work to be performed by the Contractor on behalf of the Company that is not covered under the Contract, including, but not limited to, relocating, supporting, and/or protecting the Utility's facilities, and/or shifting the City facility if approved by the Engineer, and/or otherwise changing its operations to work in the presence of the Utility's facilities. Should the Utility elect this option, it must adequately define and provide an initial price offer for the work required to be performed.

2. For items not included in the Bid Items, PL Items, or JB Specialty Items ("Utility Extra Work"), the Utility and the Contractor will directly negotiate unit rates, lump sum amounts, or agree to payment on a Time and Material Basis. In this case, the

requirements above for overruns apply for payment. The Utility may select whether the Extra Work will be paid under the appropriate JB FS Item or paid directly from the Utility, unless such payment would cause an overrun of the JB FS Item and the Extra Work will be paid directly from the Utility. In this case, the requirements above for overruns apply for payment. If Extra Work agreed to on a Time and Material Basis is not calculated in accordance with Article 26 of the Standard Construction Contract, this Extra Work must be paid directly to the Contractor by the Utility.

In order to facilitate the shared cost reconciliation between the City and the Utilities, the Contractor must provide details of all payments from the Utilities. These details must include the items, quantities, and amounts that are covered by the payment.

G. Overtime on Utility Work:

The Contractor will be paid under this article for Utility Work deemed necessary by the Commissioner (in consultation with the Utility) to accelerate Specific Utility Work Items during critical periods. Such accelerated Utility Work includes:

A. 100% of the premium portions of overtime pay for working during non-scheduled work hours which must be defined as those hours of work outside the permissible hours stated in the original contract OCMC Traffic Stipulations; or,

B. The premium portion of overtime pay for overtime actually worked beyond the 40-hour work week but within the permissible hours of work stated in the original contract OCMC Traffic Stipulations; or,

C. All other incidental expenditures caused by modifications of project site regulations or administrative requirements ordered by the Commissioner (in consultation with the Utility) that result in additional costs to perform Contract Work as specified.

Such accelerated Utility Work must be paid for under the appropriate JB FS Item in accordance with the requirements of Articles 25 and 26 of the Standard Construction Contract.

Payment made under this article must cover the cost of all labor, materials, plant, equipment, insurance, and incidentals necessary to accelerate the work as ordered by the Commissioner (in consultation with the Utility).

This article may only be applied to Utility Work performed prior to Substantial Completion of the Project.

SECTION A.3 - Standard Specifications for Joint Bid Work

A. The Contractor is responsible for performing work in accordance with the Private Utilities reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", dated August 1, 2005, as amended below and in Section C.

B. Refer to the Private Utility reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", Specification for JB 450, pages 56, 57, and 58;
Note: Items under JB 450 are task driven operation items and are not based on crew size. These items are divided into three unique types, each of which provides a description of applicability and typical use. The "Method of Measurement", on page 57, states that "The actual crew performing the operation will not be considered by the facility operator, in consultation with the Resident Engineer, when determining the applicable Unit Item Type, which will be only as per the task performed."

C. Refer to the Private Utility reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", Specification for JB 225, page 10, Article A. Description;
Delete the last four lines of text in their entirety, beginning with the words: "accordance with Specification under Addendum #1, . . .";
Substitute the following revised text: "accordance with Specification Section 7.18 – Controlled Low Strength Material (CLSM), in the Standard Highway Specification. All backfill within the maximum excavation limits shown in Sketch No. JB 225 will be of controlled low strength material (CLSM) in compliance with requirements of Section 7.18, and its cost will be deemed included in this item."

D. Refer to the Private Utility reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", Specification for JB 225, page 10, Article B. Materials;
Delete the first sentence in its entirety, beginning with the words: "Furnish Controlled Low Strength Material fill or backfill . . .";Substitute the following revised sentence: "Furnish Controlled Low Strength Material fill or backfill as required and specified in Section 7.18 – Controlled Low Strength Material (CLSM), of the Standard Highway Specification."

E. Refer to the Private Utility reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", Specification for JB 226, page 12, Article A. Description;
Delete the last five lines of text in their entirety, beginning with the words: "accordance with Specification under Addendum #1, . . .";
Substitute the following revised text: "accordance with Specification Section 7.18 – Controlled Low Strength Material (CLSM), in the Standard Highway Specification. All backfill within the maximum excavation limits shown in Sketch No. JB 225 will be of controlled low strength material (CLSM) backfill in compliance with Section 7.18 in the Standard Highway Specifications, and its cost will be deemed included in this item."

F. Refer to the Private Utility reference document called "JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR LOWER MANHATTAN", Specification for JB 226, page 12, Article B. Materials;

Delete the first sentence in its entirety, beginning with the words: “Furnish controlled low strength material fill or backfill . . .”;

Substitute the following revised sentence: “Furnish controlled low strength material fill or backfill as required and specified in Section 7.18 – Controlled Low Strength Material (CLSM), of the Standard Highway Specification.”

G. Section JB 350 is not applicable and deemed deleted. The Contractor will not be paid separately to modify means and methods around overhead utilities; those costs must be included in the prices bid for all work.

H. Section JB 900 is not applicable and deemed deleted.

SECTION A.4 – Resolution of Certain Disputes Arising Between the Contractor and the Utilities (Appendix "JB-A")

A.1.0 Applicability. In recognition of the usefulness of a process of alternative dispute resolution for its efficiency, speed and cost-effectiveness in managing conflict and settling disputes that may arise under, or by virtue of, these special provisions of Joint Bidding, the City and Utilities have agreed to the procedures set forth in this **Appendix "JB-A**." Accordingly, this **Appendix "JB-A"** will apply to disputes between the Contractor and the Utilities that arise in relation to this Contract, except for those disputes between the Contractor and the Utilities relating to delay claims, as described in Section A.1, Article F of these JB-Pages.

A.1.1 The Utilities' Responsibilities. If the Utility identifies an issue in the payment requisition for the Utility Work, the Utility will immediately notify the City and the Contractor by a written notice. After sending such written notice, the Utility agrees to meet with the Contractor to resolve the issue. If the issue cannot be resolved, then the Utility or the Contractor will seek to resolve the issue through the arbitration process as set forth herein.

A.1.2 No Extra Or Disputed Work. If the Utility determines that the alleged extra Utility Work or the disputed Utility Work is part of the City's Contract Documents and denies the Contractor's claim or request for a change order, then after receiving the Utility's written response, the Contractor will either accept the Utility's determination or immediately seek to have the issue resolved through the arbitration process as set forth herein.

A.1.3 Extra Work. If the Utility determines that there is extra Utility Work, the extra Utility Work will be paid for based on the contract rates as set forth in A.2 of these JB-Pages. If all or a portion of the agreed upon extra Utility Work items are not in the contract rates, then the Utility and the Contractor will negotiate the cost of the extra Utility Work with each other with the understanding that the performance of Public and Utility Work will continue during all negotiations and discussions. If the parties reach an agreement on cost for the extra Utility Work, then the Contractor and the Utility will submit to the City's RE a copy of the agreed upon prices together with supporting documentation. If the parties do not reach an agreement on cost for the extra Utility Work, then the parties will immediately arbitrate the issue as set forth herein.

A.2.0 Joint Bid Projects. Disputes that arise under this Appendix, as described above in paragraph A.1.0, will be resolved in accordance with the provisions of this **Appendix "JB-A"**. **Appendix "JB-A"** will NOT apply to any disputes between the City and the Contractor, or any disputes between the City and the Utilities. Since the arbitration of Utility interference disputes, as described in Article A.1.0 above, is a matter solely between the Utilities and the Contractor, and since the parties agree to reduce or eliminate any costs to the City relating to any arbitration pursuant to this **Appendix "JB-A"**, the parties hereby agree that:

A.2.1 The City will not be a party in the arbitration process;

A.2.2 Neither the Contractor nor the Utilities will call as a witness in the arbitration process any City employee, agent or consultant, including the City's RE, his staff or City inspection personnel;

A.2.3 The City will not be responsible for any costs, fees or monetary awards or price adjustments associated in any way with the arbitration process described in this **Appendix "JB-A"**; and

A.2.4 Notwithstanding Articles A.2.1 and A.2.2, the City's obligation to furnish information to the parties will be limited to those requests as set forth under the New York State Freedom of Information Law, as amended.

A.3.0 Pre-Arbitration Procedures.

A.3.1 Should a dispute arise between any Utility and the Contractor pursuant to Article A.1.0 of this Appendix, the disputing party will notify the City and the other party in writing within two (2) Business Days of the dispute that a dispute exists, and briefly describe; (i) the nature of the dispute; and (ii) the proposed resolution and rationale supporting its proposal.

A.3.2 After notifying the City of the dispute, the disputing parties will have fifteen

(15) Business Days to meet, discuss the issues, exchange documents and/or exchange offers with due diligence and in good faith in order to reach an agreement and resolve the dispute.

A.3.3. If the disputing parties reach an agreement, they will immediately notify the City in writing that the dispute has been resolved and describe the terms of the resolution.

A.3.4 If the disputing parties have not reached an agreement within fifteen (15) Business Days of the date the City was first notified of the dispute, the Contractor will, within five (5) Business Days thereafter, submit to the Utility a written Final Offer, which will consist of: (i) a description (e.g., units and quantities) of all reasonable and necessary disputed work or extra work which the Contractor contends are not covered by application of the contract rates; and (ii) a detailed breakdown of the Contractor's proposed prices (e.g., unit prices and quantities) for such work.

A.3.5 Upon receipt of the Contractor's Final Offer, the Utility will, within five (5) Business Days, either accept the Contractor's Final Offer or submit to the Contractor a written Final Offer which will consist of: (i) a description (e.g., units and quantities) of all reasonable and necessary disputed work or extra work, if any; and (ii) a detailed breakdown of the Utility's proposed prices (e.g., unit prices and quantities) for such work, if applicable.

A.3.6 Once Final Offers have been exchanged by the parties, they may not be modified or withdrawn by either party except by mutual agreement or final settlement of the dispute.

A.3.7 Upon exchange of Final Offers, the Contractor will have three (3) Business Days, to either accept or reject the Utility's Final Offer. If the Contractor rejects the Utility's Final Offer, then either the Contractor or the Utility will submit the dispute to the American Arbitration Association ("AAA") to be resolved in accordance with the Construction Industry Arbitration Rules ("Rules") in effect on the date the arbitration is initiated, except as such Rules are modified herein.

A.3.8 Each of the steps described above will be a condition precedent to the obligations of the parties in succeeding steps. Since **Time is of the Essence**, should either party fail to comply with any of the pre-arbitration procedures described above, that party will be deemed to be in default. If, upon receipt of written notice of default by the other party, the defaulting party has not cured the default within three (3) Business Days, the other party may proceed to arbitration solely on the issue of whether the defaulting party was in default of these pre-arbitration procedures. If, after hearing evidence, the arbitrator(s) determine that the defaulting party was in default of these pre-arbitration procedures, then the arbitrator(s) will enter a final decision in favor of the other party in accordance with the Final Offer submitted by the other party or, if no Final Offer has been submitted prior to the default, according to the last written proposal submitted by the other party.

A.4.0 General Provisions.

A.4.1 The Utility agrees to pay for any disputed or extra Utility Work while the arbitration proceeding is pending based on the Utility's Final Offer.

A.4.2 All determinations by the parties required by this **Appendix "JB-A"** will be clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination.

A.4.3 The Utility agrees to copy the City on all communications involving the arbitration process and to notify the City of the final determination.

A.4.4 The Utility agrees to pay the Contractor directly for any final settlement for extra Utility Work that may be agreed to by the Utilities and the Contractor or any final award for extra Utility Work issued by the arbitrator(s), less credits for any payments previously made by the Utility to the Contractor.

A.4.5 All of the contract defined terms will apply here, as if they were re-stated herein.

A.4.6 Since **Time Is Of The Essence** on all Joint Bid Projects, whenever there is a dispute pursuant to this **Appendix "JB-A"**, the terms of the City's Construction Contract will remain in full force and effect, and the Contractor will continue performing all of the Contract Work and the Utility Work as directed by the City.

A.4.7 The timeframes set forth herein have been established to ensure that the Joint Bid Project does not stop for any disputes between the Contractor and the Utility.

A.4.8 All of the timeframes are measured in Business Days, which include Monday, Tuesday, Wednesday, Thursday and Friday, but exclude holidays.

A.4.9 For all disputes that arise under **Appendix "JB-A"**, the City's role will be limited to receiving copies of all written communications.

A.4.10 The Contractor and all subcontractors hired by it agree to waive any rights they may have, if any, under law, equity, contract or otherwise to compel the City to assert any right the City may have, including the issuance of any directives or so-called "order outs" under the New York City Administrative Code, to require any or all of the Utilities to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove Utility facilities in connection with work to be performed under this contract. However, nothing in this Agreement will preclude the City from exercising its rights under the law, including the right to issue such a directive to a Utility.

A.4.11 Each Utility will be named as an additional insured on all insurance policies required to be maintained by the Contractor in connection with the Joint Bid Project. The actual incremental cost, if any, to the Contractor of providing such insurance coverage will be borne by the Contractor. The Contractor will provide a written statement from its insurance provider documenting this added coverage to the Utility. Under no circumstances will the cost of insurance coverage on behalf of the Utility be borne by the City. Nothing in this paragraph will be interpreted to imply the City's acceptance of any additional responsibility or liability for any matter related to the performance of Utility Work. In particular, with regard to any Utility Work performed in accordance with or through this **Appendix "JB-A"**, the Utility and the Contractor bear joint and full responsibility to ensure that any Utility Work performed by the Contractor is in compliance with all applicable government and Utility regulations.

A.5.0 The Arbitration Procedures.

A.5.1 Once the AAA has appointed an arbitrator(s), the arbitration will be scheduled as promptly as possible given the arbitrator(s) and the parties' schedules.

A.5.2 No later than fourteen (14) calendar days prior to the first day of arbitration, the Utility and Contractor will submit to the arbitrator(s), and to each other, a summary of each party's respective position, all documentary, photographic or physical evidence on which the party intends to rely, and such other information as is deemed appropriate, along with a copy of each party's "Final Offer" as described above.

A.5.3 The arbitration will be conducted and concluded in two (2) days.

A.5.4 On the morning of the first (1^{st}) day of the arbitration, Contractor and/or representatives will have 3½ hours to make a presentation of its claim to the arbitrator(s). During its presentation, Contractor will not be permitted to produce any evidence that has not already been provided to the Utility and the arbitrator(s) pursuant to Paragraph A.5.2, above. Contractor will be permitted to produce any analysis or description of its claim that has been prepared for the purpose of its presentation.

A.5.5 After the Contractor's presentation, Utility and/or its representatives will have 2 hours to ask the Contractor questions about its claim and its presentation. Thereafter, the arbitrator(s) will have 2 hours to ask the Contractor questions about its claim and its presentation.

A.5.6 On the morning of the second (2^{nd}) day of the arbitration, Utility and/or its representatives will have 3½ hours to make a presentation of its claim to the arbitrator(s). During its presentation, the Utilities will not be permitted to produce any evidence that has not already been provided to the Contractor and the arbitrator(s) pursuant to Paragraph A.5.2, above. The Utility will be permitted to produce any analysis or description of its claim that has been prepared for the purpose of its presentation.

A.5.7 After the Utility's presentation, the Contractor and/or its representatives will have 2 hours to ask the Utility questions about its claim and its presentation. Thereafter, the arbitrator(s) will have 2 hours to ask the Utility questions about its claim and its presentation.

A.5.8 Subject to the above maximum time limitations set forth above, the arbitrator(s) may conduct the arbitration in such manner as the arbitrator(s) deems reasonable.

A.5.9 The arbitrator(s) will then have one (1) week to select in writing, as the arbitrators' award, that party's Final Offer that appears to be more reasonable, based on the presentations at the arbitration hearings.

A.5.10 The arbitrator(s) will have no discretion to grant an award other than one of the two (2) Final Offers submitted by the parties.

A.5.11 The arbitration award will be final and binding upon the parties to the arbitration and judgment upon the award may be entered in a court having jurisdiction.

A.5.12 Any award for work that has already been performed will be paid on the 7^{th} day after receipt of the arbitrator's decision, or on the 30^{th} day after completion of the work, whichever is later. Payment for work not yet completed at the time of the arbitrator's decision will be paid within thirty

(30) calendar days of completion of work. Interest will accrue from the date payment is due at the rate of nine (9%) percent per annum. Either party may cause judgment to be entered in accordance with the decision of the arbitrator(s) in a court in the State of New York, County of New York.

A.5.13 The Utility and the Contractor initially will share the arbitrator's(s') fees and any other costs of the arbitration equally. The non-prevailing party will then pay all arbitrator's(s') fees and costs of the arbitration and will reimburse the prevailing party for its share of such fees and costs theretofore paid.

A.5.14 The parties may, at any time, settle any matter submitted to arbitration.

A.5.15 Since **Time is of the Essence**, should any party, at any time after the dispute has been submitted for arbitration, materially fail to comply with: (i) the Rules, (ii) any of these arbitration procedures, or (iii) any procedural decisions by the arbitrator(s), then the arbitrator(s) will enter an order directing the party to cure its non-compliance within five (5) Business Days. If the party fails to comply with the order of the arbitrator(s) order within the five (5) Business Days, upon receipt of evidence that the non-complying party has failed to comply with the arbitrator's(s') order, the arbitrator(s) will enter a final decision in favor of the other party in accordance with the other party's Final Offer.

END OF JB-PAGES SECTION A

(NO FURTHER TEXT ON THIS PAGE)

SECTION B.
NYC JOINT BID ITEM PRICE LIST

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 100.1	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .1)	EACH	$ 573
JB 100.2	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .2)	EACH	$ 858
JB 100.3	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .3)	EACH	$ 1,125
JB 100.4	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .4)	EACH	$ 1,368
JB 100.5	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .5)	EACH	$ 1,883
JB 100.6	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .6)	EACH	$ 2,012
JB 100.7	UTILITIES CROSSING TRENCH FOR CATCH BASIN CHUTE CONNECTION (TYPE .7)	EACH	$ 2,182
JB 101.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .1)	EACH	$ 2,862
JB 101.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .2)	EACH	$ 3,284
JB 101.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .3)	EACH	$ 4,428
JB 101.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .4)	EACH	$ 4,686
JB 101.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .5)	EACH	$ 5,673
JB 101.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .6)	EACH	$ 6,208
JB 101.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 12" TO 24" DIAMETER (TYPE .7)	EACH	$ 6,284
JB 102.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .1)	EACH	$ 3,565
JB 102.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .2)	EACH	$ 4,006
JB 102.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .3)	EACH	$ 4,780
JB 102.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .4)	EACH	$ 5,465
JB 102.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .5)	EACH	$ 6,056
JB 102.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .6)	EACH	$ 6,413
JB 102.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 24" TO 36" DIAMETER (TYPE .7)	EACH	$ 7,526
JB 103.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMETER (TYPE .1)	EACH	$ 4,178
JB 103.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMETER (TYPE .2)	EACH	$ 4,910
JB 103.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMETER (TYPE .3)	EACH	$ 6,109
JB 103.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMATER (TYPE .4)	EACH	$ 7,183
JB 103.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMATER (TYPE .5)	EACH	$ 8,594

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 103.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMATER (TYPE .6)	EACH	$ 9,213
JB 103.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 36" TO 48" DIAMATER (TYPE .7)	EACH	$ 9,832
JB 104.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .1)	EACH	$ 4,601
JB 104.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .2)	EACH	$ 5,088
JB 104.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .3)	EACH	$ 6,071
JB 104.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .4)	EACH	$ 6,821
JB 104.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .5)	EACH	$ 7,943
JB 104.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .6)	EACH	$ 8,311
JB 104.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 48" TO 54" DIAMETER (TYPE .7)	EACH	$ 8,835
JB 105.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .1)	EACH	$ 4,933
JB 105.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .2)	EACH	$ 5,460
JB 105.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .3)	EACH	$ 6,744
JB 105.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .4)	EACH	$ 7,854
JB 105.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .5)	EACH	$ 9,426
JB 105.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .6)	EACH	$ 10,001
JB 105.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 54" TO 60" DIAMETER (TYPE .7)	EACH	$ 9,372
JB 106.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .1)	EACH	$ 5,156
JB 106.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .2)	EACH	$ 5,689
JB 106.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .3)	EACH	$ 7,013
JB 106.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .4)	EACH	$ 8,152
JB 106.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .5)	EACH	$ 9,659
JB 106.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .6)	EACH	$ 10,240
JB 106.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 60" TO 72" DIAMETER (TYPE .7)	EACH	$ 10,821
JB 107.1	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .1)	EACH	$ 5,442
JB 107.2	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .2)	EACH	$ 6,079
JB 107.3	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .3)	EACH	$ 7,402

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 107.4	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .4)	EACH	$ 8,592
JB 107.5	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .5)	EACH	$ 10,314
JB 107.6	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .6)	EACH	$ 10,709
JB 107.7	UTILITIES CROSSING TRENCH FOR SEWERS OVER 72" TO 84" DIAMETER (TYPE .7)	EACH	$ 11,104
JB 108.1	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .1)	EACH	$ 873
JB 108.2	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .2)	EACH	$ 1,503
JB 108.3	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .3)	EACH	$ 2,139
JB 108.4	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .4)	EACH	$ 2,733
JB 108.5	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .5)	EACH	$ 3,186
JB 108.6	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .6)	EACH	$ 3,568
JB 108.7	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .7)	EACH	$ 4,373
JB 109.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .1)	EACH	$ 1,265
JB 109.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .2)	EACH	$ 1,758
JB 109.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .3)	EACH	$ 2,378
JB 109.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .4)	EACH	$ 3,045
JB 109.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .5)	EACH	$ 3,530
JB 109.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .6)	EACH	$ 3,956
JB 109.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .7)	EACH	$ 4,100
JB 110.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .1)	EACH	$ 1,649
JB 110.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .2)	EACH	$ 2,126
JB 110.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .3)	EACH	$ 2,744
JB 110.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .4)	EACH	$ 3,466
JB 110.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .5)	EACH	$ 4,055
JB 110.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .6)	EACH	$ 4,663
JB 110.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 24" AND UP TO 36" DIAMETER (TYPE .7)	EACH	$ 5,453
JB 111.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .1)	EACH	$ 2,054

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 111.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .2)	EACH	$ 2,748
JB 111.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .3)	EACH	$ 3,656
JB 111.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .4)	EACH	$ 4,652
JB 111.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .5)	EACH	$ 5,491
JB 111.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .6)	EACH	$ 6,228
JB 111.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 36" AND UP TO 48" DIAMETER (TYPE .7)	EACH	$ 7,781
JB 112.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .1)	EACH	$ 2,050
JB 112.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .2)	EACH	$ 2,657
JB 112.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .3)	EACH	$ 3,687
JB 112.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .4)	EACH	$ 4,753
JB 112.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .5)	EACH	$ 5,574
JB 112.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .6)	EACH	$ 6,273
JB 112.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 48" AND UP TO 54" DIAMETER (TYPE .7)	EACH	$ 7,413
JB 113.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .1)	EACH	$ 2,361
JB 113.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .2)	EACH	$ 3,198
JB 113.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .3)	EACH	$ 4,249
JB 113.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .4)	EACH	$ 5,340
JB 113.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .5)	EACH	$ 6,135
JB 113.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .6)	EACH	$ 6,914
JB 113.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 54" AND UP TO 60" DIAMETER (TYPE .7)	EACH	$ 8,046
JB 114.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .1)	EACH	$ 2,492
JB 114.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .2)	EACH	$ 3,599
JB 114.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .3)	EACH	$ 5,401
JB 114.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .4)	EACH	$ 7,013
JB 114.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .5)	EACH	$ 8,301
JB 114.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .6)	EACH	$ 9,188

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 114.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 60" AND UP TO 72" DIAMETER (TYPE .7)	EACH	$ 9,474
JB 115.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .1)	EACH	$ 2,874
JB 115.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .2)	EACH	$ 4,116
JB 115.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .3)	EACH	$ 6,065
JB 115.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .4)	EACH	$ 7,994
JB 115.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .5)	EACH	$ 9,455
JB 115.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .6)	EACH	$ 10,379
JB 115.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 72" AND UP TO 84" DIAMETER (TYPE .7)	EACH	$ 10,742
JB 116.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .1)	EACH	$ 3,118
JB 116.2	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .2)	EACH	$ 4,480
JB 116.3	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .3)	EACH	$ 6,478
JB 116.4	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .4)	EACH	$ 8,628
JB 116.5	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .5)	EACH	$ 10,236
JB 116.6	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .6)	EACH	$ 11,263
JB 116.7	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 84" (TYPE .7)	EACH	$ 11,627
JB 200	EXTRA DEPTH EXCAVATION OF CATCH BASIN CHUTE CONNECTION PIPES	L.F.	$ 190
JB 225.1A	INSTALLATION AND REMOVAL OF CATCH BASINS WITH UTILITY INTERFERENCES	EACH	$ 4,018
JB 225.1B	INSTALLATION AND REMOVAL OF CATCH BASINS WITH UTILITY INTERFERENCES AT AN ADDITIONAL DEPTH OF UP TO 3 FEET	EACH	$ 4,548
JB 225.2A	INSTALLATION OF CATCH BASINS WITH UTILITY INTERFERENCES	EACH	$ 2,009
JB 225.2B	INSTALLATION OF CATCH BASINS WITH UTILITY INTERFERENCES AT AN ADDITIONAL DEPTH OF UP TO 3 FEET	EACH	$ 2,539
JB 225.3A	REMOVAL OF CATCH BASINS WITH UTILITY INTERFERENCES	EACH	$ 1,845
JB 300A	SPECIAL CARE EXCAVATION AND BACKFILLING FOR TRANSMISSION MAINS (TRANSMISSION MAIN IS DESCRIBED AS ANY GAS MAIN WITH A MAOP GREATER THAN 124-PSIG)	C.Y.	$ 312
JB 300.1	SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH LESS THAN 5' DEEP	C.Y.	$ 229

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 300.2	SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH GREATER THAN 5' DEEP	C.Y.	$ 265
JB 301	SPECIAL CARE EXCAVATION AND BACKFILLING FOR OIL-O-STATIC PIPE	C.Y.	$ 316
JB 303	FURNISH, DELIVER AND INSTALL TYPE 3/8 CLEAN SAND BACKFILL	C.Y.	$ 52
JB 306	SPECIAL CARE EXCAVATION AND BACKFILLING WITHIN A CITY TRENCH	C.Y.	$ 272
JB 330E	SUPPORT AND PROTECTION OF UTILITY FACILITIES DURING EXCAVATION	L.F.	$ 232
JB 330G	SUPPORTS FOR PARALLEL FULLY EXPOSED GAS MAINS IN TRENCH	EACH	$ 1,629
JB 330T1	SUPPORT AND PROTECTION OF COMMUNICATION UTILITY FACILITIES DURING EXCAVATION OF CITY TRENCH WHEN PARALLELING COMMUNICATION FACILITIES LIE COMPLETELY IN THE PROPOSED CITY TRENCH	L.F.	$ 157
JB 330T2.1	COMMUNICATIONS FACILITY OPERATOR(S) REQUESTS THE TRENCH BE WIDENED	L.F.	$ 319
JB 330T2.2	COMMUNICATION FACILITY OPERATOR(S) REQUESTS THE TRENCH / SHEETING BE MODIFIED	L.F.	$ 448
JB 351	INSTALL AND REMOVE "A" FRAME ON UTILITY POLES	EACH	$ 1,416
JB 400	TEST PITS FOR UTILITY FACILITIES	C.Y.	$ 242
JB 401	TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES	C.Y.	$ 284
JB 401A	SPECIAL CARE PAVEMENT EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES CONNECTED TO THE BASE PAVEMENT	C.Y.	$ 349
JB 401AC	SPECIAL CARE PAVEMENT EXCAVATION FOR ADJUSTMENT OF CABLE TV FACILITIES CONNCETED TO THE BASE PAVEMENT	C.Y.	$ 96
JB 401AT	SPECIAL CARE PAVEMENT EXCAVATION FOR ADJUSTMENT OF TELECOMMUNICATION FACILITIES CONNECTED TO OR NEAR THE BASE PAVEMENT	C.Y.	$ 105
JB 402.1	EXISTING CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 64
JB 402.1A	EXISTING CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 73
JB 402.2	EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 42

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 402.2A	EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 52
JB 402T.1	EXISTING CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 64
JB 402T.1A	EXISTING CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 69
JB 402T.2	EXISTING NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 46
JB 402T.2A	EXISTING NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 60
JB 402T.3	ACM REMOVAL AND DISPOSAL OF VERIZON/ECS CONDUITS WITH ASBESTOS CONTAINING MATERIAL TRANSITE PIPES (ACM-TP) UP TO AND INCLUDING 4" DIAMETER	L.F.	$ 90
JB 402T.J1	EXISTING CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT - JOINTS BROKEN OUT AND CONDUITS REMAIN INTACT	L.F.	$ 64
JB 402T.J1A	EXISTING CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT - JOINTS BROKEN OUT AND CONDUITS REMAIN INTACT	L.F.	$ 72
JB 402T.J2	EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT - JOINTS BROKEN OUT AND CONDUITS REMAIN INTACT	L.F.	$ 53
JB 402T.J2A	EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT - JOINTS BROKEN OUT AND CONDUITS REMAIN INTACT	L.F.	$ 60
JB 402T.R1A	EXISTING CONCRETE ENCASED STEEL/IRON CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 67
JB 402T.R2A	EXISTING NON - CONCRETE ENCASED STEEL/IRON CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 53
JB 402T.V1	EXISTING VACANT CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 65
JB 402T.V1A	EXISTING VACANT CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 45

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 402T.V2	EXISTING VACANT NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 54
JB 402T.V2A	EXISTING VACANT NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 61
JB 403	PLACING STEEL PROTECTION PLATES FOR UTILITY FACILITIES	S.F.	$ 4
JB 403T.1	FURNISH AND INSTALL STEEL PROTECTION PLATES FOR UTILITY FACILITIES (1/4" THICK)	S.F.	$ 16
JB 403T.2	FURNISH AND INSTALL STEEL PROTECTION PLATES FOR UTILITES FACILITES (3/8" THICK)	S.F.	$ 20
JB 404	PIER & PLATE METHOD OF PROTECTION FOR DUCTILE IRON WATER MAINS AND OTHER SHALLOW FACILITIES	S.F.	$ 664
JB 405.1	TRENCH EXCAVATION FOR INSTALLATION OF UTILITY FACILITIES WITH TOTAL DEPTHS LESS THAN FIVE FEET	C.Y.	$ 368
JB 405.2	TRENCH EXCAVATION FOR INSTALLATION OF UTILITY FACILITIES WITH TOTAL DEPTHS EQUAL TO OR GREATER THAN FIVE FEET, REQUIRING SHEETING	C.Y.	$ 445
JB 406	EXCAVATION FOR UTILITY STRUCTURE	C.Y.	$ 307
JB 410.1	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES UP TO AND INCLUDING 20% (TYPE .1)	C.Y.	$ 367
JB 410.2	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 20% AND UP TO AND INCLUDING 40% (TYPE .2)	C.Y.	$ 437
JB 410.3	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 40% AND UP TO AND INCLUDING 60% (TYPE .3)	C.Y.	$ 510
JB 410.4	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 60% AND UP TO AND INCLUDING 80% (TYPE .4)	C.Y.	$ 630
JB 410.5	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES UP TO AND INCLUDING 20% WITH TRENCH DEPTH EQUAL TO OR GREATER THAN FIVE FEET (TYPE .5)	C.Y.	$ 713
JB 410.6	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 20% AND UP TO AND INCLUDING 40% WITH TRENCH DEPTH EQUAL TO OR GREATER THAN FIVE FEET (TYPE .6)	C.Y.	$ 747

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 410.7	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 40% AND UP TO AND INCLUDING 60% WITH TRENCH DEPTH EQUAL TO OR GREATER THAN FIVE FEET (TYPE .7)	C.Y.	$ 828
JB 410.8	MASS TRENCH EXCAVATION FOR UTILITY FACILITIES OVER 60% AND UP TO AND INCLUDING 80% WITH TRENCH DEPTH EQUAL TO OR GREATER THAN FIVE FEET (TYPE .8)	C.Y.	$ 910
JB 450.1	CONSTRUCTION FIELD SUPPORT - SURVEY CREW (TYPE .1)	CREW/HR	$ 353
JB 450.2	CONSTRUCTION FIELD SUPPORT - SMALL SIZE CREW (TYPE .2)	CREW/HR	$ 388
JB 450.3	CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .3)	CREW/HR	$ 998
JB 450.4	CONSTRUCTION FIELD SUPPORT - LARGE SIZE CREW (TYPE .4)	CREW/HR	$ 1,363
JB 450.5	CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .5) PIPE-RIPPING SUPPORT	CREW/HR	$ 835
JB 500	REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)	L.F.	$ 5
JB 501	REMOVAL OF ABANDONED MASONRY FOR UTILITY FACILITIES	C.Y.	$ 308
JB 603E.1	INSTALL UTILITY CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	L.F.	$ 4
JB 603E.2	INSTALL UTILITY CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	$ 8
JB 603T.1	INSTALL 1 EACH 2", 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 7
JB 603T.2	INSTALL 2 EACH 2", 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 14
JB 603T.3	INSTALL 4 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 23
JB 603T.4	INSTALL 6 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 45
JB 603T.5	INSTALL 8 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 61
JB 603T.6	INSTALL 12 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 91
JB 603T.7	INSTALL 15 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 113
JB 603T.8	INSTALL 24 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 182
JB 603T.9	INSTALL 30 EACH 4" OR 1-1/4" QUAD CONDUITS (PVC OR STEEL) IN ANY COMBINATION	L.F.	$ 212
JB 636 EA	ADJUSTMENT OF UTILITY HARDWARE (UNDER 7" WIDTH)	EACH	$ 212
JB 636 EB	ADJUSTMENT OF UTILITY HARDWARE (7" TO UNDER 14" WIDTH)	EACH	$ 356
JB 636 EC	ADJUSTMENT OF UTILITY HARDWARE (14" TO UNDER 30" WIDTH)	EACH	$ 905
JB 636 ED	ADJUSTMENT OF UTILITY HARDWARE (30" TO UNDER 34" WIDTH)	EACH	$ 950

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 636 EE	ADJUSTMENT OF UTILITY HARDWARE (34" TO UNDER 41" WIDTH)	EACH	$ 1,086
JB 636 EG	ADJUSTMENT OF UTILITY HARDWARE (41" TO UNDER 75" WIDTH)	EACH	$ 1,222
JB 636 EH	ADJUSTMENT OF UTILITY HARDWARE (75" TO UNDER 125" WIDTH)	EACH	$ 1,371
JB 636 EI	ADJUSTMENT OF UTILITY HARDWARE (125" TO UNDER 170" WIDTH)	EACH	$ 1,512
JB 636 MA	ADJUSTMENT OF UTILITY HARDWARE 7" to 30" MILLING / RESURFACING	EACH	$ 129
JB 636 MB	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (7" TO UNDER 14" WIDTH)	EACH	$ 156
JB 636 MC	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (14" TO UNDER 30" WIDTH)	EACH	$ 170
JB 636 MD	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (30" TO UNDER 34" WIDTH)	EACH	$ 183
JB 636 ME	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (34" TO UNDER 41" WIDTH)	EACH	$ 206
JB 636 MG	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (41" TO UNDER 75" WIDTH)	EACH	$ 233
JB 636 MH	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (75" TO UNDER 125" WIDTH)	EACH	$ 265
JB 636 MI	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (125" TO UNDER 170" WIDTH)	EACH	$ 299
JB 636 R	REPAIR TO UTILITY STRUCTURES	C.Y.	$ 267
JB 636 SA	CONCRETE COLLAR AROUND STEAM CASTINGS	S.F.	$ 15
JB 636 SB	ADJUSTMENT TO UTILITY STEAM CASTINGS (UNDER AND INCLUDING 8" WIDTH)	EACH	$ 243
JB 636 SC	ADJUSTMENT OF UTILITY STEAM CASTINGS (ABOVE 8" TO 34" WIDTH)	EACH	$ 718
JB 638 N	INSTALLATION OF FIELD CONSTRUCTED UTILITIES STRUCTURES.	C.Y.	$ 1,256
JB 638 NT	INSTALLATION OF FIELD CONSTRUCTED TELEPHONE/COMMUNICATIONS UTILITY STRUCTURE	C.Y.	$ 3,539
JB 638 R	BREAK OUT AND REMOVE UTILITY STRUCTURE	C.Y.	$ 686

NYCDDC Infrastructure Division - Joint Bid Utility Price List

Item No.	Item Description	Unit	Price
JB 638 RT	BREAK OUT AND REMOVE TELEPHONE/COMMUNICATIONSUTILITY STRUCTURE CONTAINING ACTIVE CABLES	C.Y.	$ 6,991
JB 700	SPECIAL MODIFICATION OF WORK METHODS TO ACCOMMODATE/PROTECT UNDERGROUND FACILITIES WITH LIMITED COVER	C.Y.	$ 95
JB 710.1	REMOVAL OF ABANDONED UTILITY STEEL/CAST IRON/ PLASTIC PIPES, UP TO AND INCLUDING 12" DIAMETER PIPE	L.F.	$ 16
JB 710.2	REMOVAL OF ABANDONED UTILITY STEEL/CAST IRON/ PLASTIC PIPES, OVER 12" AND UP TO AND INCLUDING 20" DIAMETER PIPE	L.F.	$ 18
JB 710.3	REMOVAL OF ABANDONED UTILITY STEEL/CAST IRON PIPE, STRUCTURE OPENINGS GREATER THAN 20"	L.F.	$ 45
JB 711	USE SHEETING LINE AS FORM	L.F.	$ 7
JB 781	REMOVABLE CURB SIDEWALK PANEL FOR ACCESS TO UTILITY STRUCTURE OPENINGS	EACH	$ 1,609
JB 798	MODIFICATION OF NON-CONCRETE YOKE TROLLEY STRUCTURES REMOVAL WHEN CROSSING UTILITY FACILITIES	L.F.	$ 331
JB 799	MODIFICATION OF NON-CONCRETE YOKE TROLLEY STRUCTURES REMOVAL PARALLEL TO UTILITY FACILITIES	L.F.	$ 105
JB 800	MODIFICATION OF CONCRETE YOKE TROLLEY STRUCTURE REMOVAL WHEN CROSSING UTILITY FACILITIES	L.F.	$ 248
JB 801	MODIFICATION OF CONCRETE YOKE TROLLEY STRUCTURE REMOVAL PARALLEL TO UTILITY FACILITIES	L.F.	$ 126
JB 802A	SPECIAL CARE EXCAVATION AND RESTORATION FOR SIDEWALK WORK	S.F.	$ 5
JB 802B	SPECIAL CARE EXCAVATION AND RESOTRATION FOR CURB WORK	L.F.	$ 12
JB 803.1	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH RDWY REMOVAL (LINE CUT ASPHALT)	L.F.	$ 11
JB 803.2	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS (LINE CUT ANY COMBINATION OF ASPHALT AND CONCRETE ROADWAY)	L.F.	$ 22
JB 803.3	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ASPHALT, CONCRETE AND BELGIAN BLOCK ROADWAY REMOVAL OPERATIONS	L.F.	$ 31

END OF JB-PAGES SECTION B

(NO FURTHER TEXT ON THIS PAGE)

SECTION C.
JOINT BID SPECIAL SPECIFICATIONS

MODIFIED SPECIFICATIONS

The specifications listed below supersede the specifications found in the “JOINT-BIDDING SPECIFICATIONS AND SKETCHES FOR MANHATTAN”.

Specifications	Superseded Specifications
VERIZON	
JB 225	JB 225.1A, JB 225.1B, JB 225.2A, JB 225.2B, & JB 225.3A
JB 300	JB 300.1, JB 300.2
JB 351T	N / A
JB 401	JB 401
JB 402T	JB 402T.1, JB 402T.1A, JB 402T.2, JB 402T.2A, JB 402T.J1, JB 402T.J1A, JB 402T.J2, JB 402T.J2A, JB 402T.R1A, JB 402T.R2A, JB 402T.V1, JB 402T.V1A, JB 402T.V2, & JB 402T.V2A
JB 402T.3	JB 402T.3
JB 403T	JB 403T.1 & JB 403T.2
JB 404	JB 404
JB 405	JB 405.1 & JB 405.2
JB 450	JB 450.1, JB 450.2, JB 450.3, JB 450.4, JB 450.5
JB 603T	JB 603T.1, JB 603T.2, JB 603T.3, JB 603T.4, JB 603T.5, JB 603T.6, JB 603T.7, JB 603T.8, JB 603T.9
JB 636E	JB 636 EA, JB 636 EB, JB 636 EC, JB 636 ED, JB 636 EE, JB 636 EG, JB 636 EH, JB 636 EI
JB 636M	JB 636 MA, JB 636 MB, JB 636 MC, JB 636 MD, JB 636 MD, JB 636 ME, JB 636 MG, JB 636 MH, JB 636 MI
JB 638NT	JB 638NT
JB 638RT	JB 638RT
JB 798	JB 798
JB 799	JB 799
JB 800	JB 800
JB 801	JB 801
JB 802	JB 802A, JB 802B
JB 803	JB 803.1, JB 803.2, JB 803.3

JB 225 – INSTALLATION AND REMOVAL OF CATCH BASINS WITH UTILITY INTERFERENCES

A. Description

Under this section, the Contractor shall provide all incremental labor, materials, equipment, insurance and incidentals required to support and/or protect the integrity of utility facilities required during the excavation, installation and removal of catch basins within maximum excavation limits shown on sketch JB 225. This shall include but not be limited to the following types of utility facilities:

1. Conduits
2. Cables
3. Concrete encased conduit duct banks
4. Steel pipes
5. Steam facilities
6. Oil-o-static facilities, and
7. Non-Cost sharing gas facilities

encroaching the catch basin excavation and sheeting lines as described further in this section and attached sketch JB 225.

B. Materials

Furnish slurry fill or backfill as required. All materials used to support and protect utility facilities shall be as indicated on standard Sketches JB 100A, JB 100B, JB 100C, JB 100C-1, JB 100D, JB 100E and JB 100F, contained elsewhere in these specifications, shall be supplied by the Contractor and approved by the facility operator(s).

C. Methods of Construction

The Contractor shall use sheeting methods that permit maintenance, support and protection of all utility facilities covered by this section. It is the intent of this item to support, maintain and protect any and all combinations and configurations of utility facilities located within limits indicated on sketch JB 225. For the construction of Type III catch basins, the spillway shall be constructed in a separate stage where the excavation limits may be waived after the basin structure has been installed and backfilled. Excavation for the spillway shall not exceed 3' beyond the exterior finished surface of the proposed spillway. Excavation method for spillway construction shall be done by hand. Utility facilities located within the catch basin footprint, are not covered by this section and shall be removed or adjusted by the Contractor under other JB items or by facility operator at their own expense. This section shall then cover the adjusted facilities.

Utility facilities located beyond the established maximum payment limits are not affected by work specified and shall not be disturbed during any type of catch basin installation and/or removal. Contractor shall be solely and totally responsible for support, maintain and protect, any disturbances and/or any damages to such facilities at his expense. The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (pick

and shovel and/or hand held power tools) directly below the pavement base to expose the facilities and to ascertain the spatial relationships and/or dimensions of these utilities with respect to the proposed excavation. Upon exposing the affected utilities as determined solely by the facility operator(s), the Contractor shall be permitted to proceed with a combination of hand and machine excavation, as appropriate, within a zone of protection whose limit shall be defined as a perimeter located one foot from the outside face of each utility interference.

D. Method of Measurement

The quantity to be measured for payment shall be each basin where utility facilities are located within the limits indicated on sketch JB 225. Utility facilities located within the catch basin footprint shall be removed or adjusted by the contractor under other JB items. This section shall then cover the adjusted facilities. Payment will be made only one time at locations where a new catch basin is to be installed at the same location as a preexisting catch basin as specified on contract drawings. For the purpose of this item, “same location” shall mean within 10ft of the preexisting basin location.

JB 225.1A – Installation and removal of catch basins with utility interferences (EA)

JB 225.1B – Installation and removal of catch basin with utility interference at an additional depth of up to 3 feet (EA)

JB 225.2A – Installation of catch basins with utility interferences (EA)

JB 225.2B – Installation of catch basins with utility interferences at an additional depth of up to 3 feet (EA)

JB 225.3A – Removal of catch basins with utility interferences. This item shall be applied only in situations where the catch basin is being removed and not replaced. This item requires complete removal of the catch basin including the floor. (EA)

E. Price to Cover

For JB items 225.1A & 225.2A – The price shall cover the cost of all labor, material, equipment, insurance and incidentals necessary to completely support and protect and maintain the integrity of the utilities without disruption of service to the customers and in accordance with other types of utility items. The price shall also include the cost of: supports, slings and beams installed for utility support; changes of sheeting method and configuration where necessary to accommodate the utility; a combination of hand and machine excavation within the payment limits specified; the disposal of excess backfill material; the placing of backfill material adjacent to catch basins within the maximum payment limits shown on sketch JB 225; backfilling and compacting around over, under and in between utility facilities; installation and removal of sheeting around facilities; support and protection of utility facilities encountered during construction of the spillway. The price shall also cover any additional excavations including hand and hand and machine excavations under and in between single and multiple facilities; and/or in between utility facilities and other existing structures. The unit price shall be deemed to cover all incremental cost for all labor, material, equipment, and incidentals necessary to excavate, install and/or remove specified catch basins while completely supporting, protecting, maintaining and/or adjusting the catch basin to accommodate the integrity of the encroaching utility facilities without disruption of service to the customers in accordance with the contract documents. All cost to support maintain, protect, and accommodate the integrity of utility facilities shall be deemed included in the price for this item. The price shall also cover all additional restricted excavating, sheeting, backfilling, and

compaction around, over, under, and between utility facilities and all other existing structures and/or newly installed and/or removed catch basin.

For JB items 225.1B and .2B – The price to cover shall include all work as described in price to cover for JB 225.1A and .2A plus installation of the catch basin at an additional depth of up to three feet. Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same area more than one time. Payment will be made only one time if the Contractor elects to install new basins next to existing basins to accommodate their operations. No payment will be made for the removal of the existing basins if performed at a later sequence.

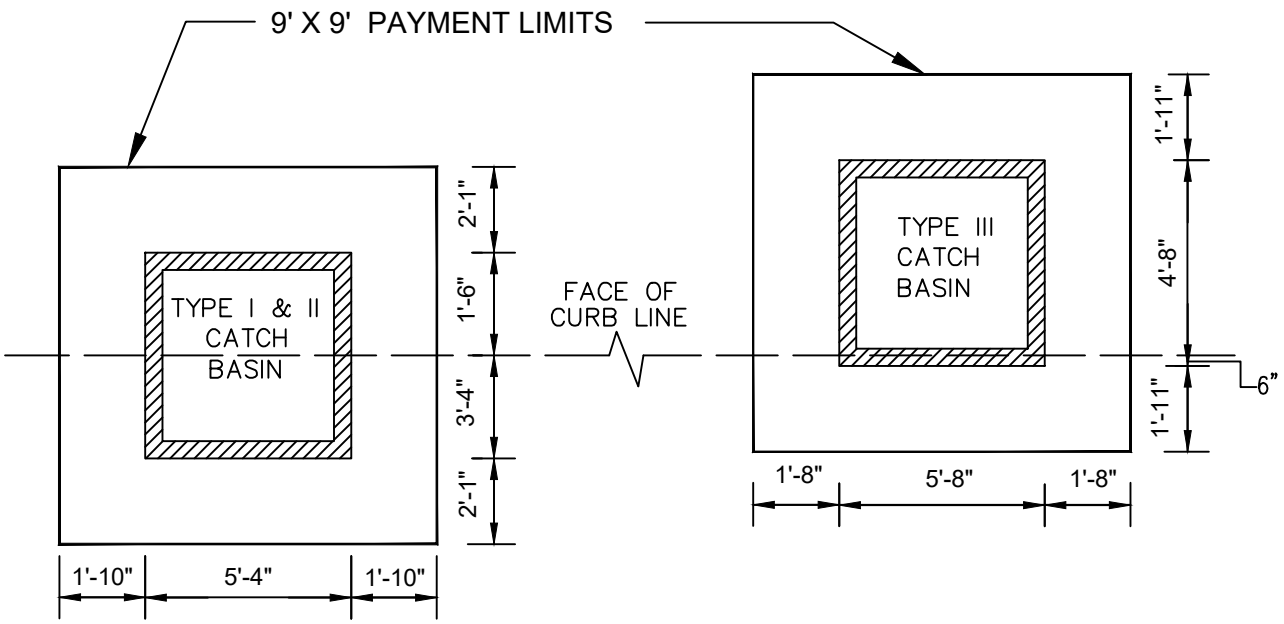
For JB items 225.1A, .1B, .2A, and .2B - if tight sheeting is not utilized for the installation of the catch basin this JB pay item shall be reduced by 60%.

For JB item 225.3A – The price to cover shall include all work as described in price to cover for JB 225.1A and .2A plus the modification of means and methods for the removal of catch basins using hand tools including but not limited to chipping guns and jack hammers when work is performed in the presence of utility facilities within the excavation limits as outlined in sketch JB 225.

Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same area more than one time. Payment will be made only one time if the Contractor elects to install new basins next to existing basins to accommodate their operations. No payment will be made for the removal of the existing basins if performed at a later sequence.

F. References

1. Sketches JB 225, JB 100A, JB 100B, JB 100C, JB 100C-1, JB 100D, JB 100E and JB 100F
2. NYS Industrial Code Rule 753



CATCH BASIN ORIENTATION TO CURB LINE WITH PAYMENT LIMITS CONCENTRIC TO BASINS
N.T.S.

JB 225 PAY LIMITS

CATCH BASIN TYPE	DIMENSION TO UTILITY FACILITY PARALLEL FROM FACE OF CURB INTO STREET	DIMENSION TO UTILITY FACILITY PARALLEL FROM FACE OF CURB INTO SIDEWALK	DIMENSION TO UTILITY FACILITY PERPENDICULAR TO CURB FROM FACE OF CATCH BASIN
TYPE I & II TYPE III	3'–6" TO 5'–5" 0'–8" TO 2'–5"	1'–8" TO 3'–7" 4'–10" TO 6'–7"	0'–2" TO 1'–10" 0'–2" TO 1'–8"

NOTES:

FOR EXCAVATIONS GREATER THAN 9'X9', THE CONTRACTOR SHALL SUPPORT ALL UTILITIES AS SPECIFIED UNDER THE VARIOUS ITEMS WITH NO ADDITIONAL COMPENSATION FROM THE IMPACTED UTILITIES. PAYMENT UNDER THIS ITEM SHALL INCLUDE MODIFICATION OF SHEETING METHODS TO SUPPORT UTILITY FACILITIES PARTIALLY WITHIN THE PAYMENT LIMITS SPECIFIED.

ACCOMODATION OF UTILITY FACILITIES DURING CATCH BASIN INSTALLATIONS

LAST REVISION	SKETCH NO.
2/27/2016	JB 225

JB 300 - SPECIAL CARE EXCAVATION AND BACKFILLING

A. Description

Under this section, the Contractor shall provide all incremental labor, materials, equipment, insurance and incidentals required for trench excavation when protecting and maintaining and accommodating the integrity of utility facilities, including but not limited to:

1. Conduits
2. Cables
3. Structures
4. Concrete encased conduit ductbanks
5. Steel pipes
6. Steam facilities
7. Non-cost sharing gas facilities

of various sizes and configurations, encroaching (partially exposed) or paralleling (not exposed) within 6 inches of the approved city trench lines for all phases of contract excavation as shown on contract drawings and/or as encountered during construction, except excavations to the ultimate depth for curbs, sidewalks and roadway/base/sub-base removal which are covered under other JB items. This item shall also apply to facilities that cross excavations for water service installation and extensions or excavations for water tap searches. The items specified under this section shall not be measured for payment in conjunction with any other types of utility items. All work shall be performed in accordance with contract plans, specifications, sketches JB 300A and JB 300B and at the direction of the facility operator(s).

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain and protect and accommodate the integrity of all utility facilities encroaching/paralleling within excavations as schematically shown on sketches JB 300A and JB 300B. The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (i.e. pick and shovel or hand held power tools) directly below the pavement base to expose the facilities and ascertain the spatial relationships and/or dimensions of these utilities with respect to the proposed excavation. Upon exposing the affected utilities sufficiently as determined solely by the facility operator(s), the Contractor shall be permitted to proceed with a combination of hand and machine excavation, as appropriate, within a zone of protection whose limit shall be defined as a perimeter located one foot from the outside face of each utility encroaching.

D. Method of Measurement

The unit price for this work item shall be based on the volume (C.Y.) of special care excavation calculated as follows:

- For paralleling facilities (not exposed) within six inches of city trench line: The area for payment shall be measured horizontally from the face of the excavation plus one foot towards the center

of trench and vertically from bottom of the roadway to the bottom of the trench, multiplied by the length of the paralleling utility facility as indicated in sketches JB 300A and JB 300B.

- For encroaching facilities: The area for payment shall be measured horizontally as the width of the encroaching facility plus one foot towards the center of the trench and vertically from the bottom of the roadway to the bottom of the trench, multiplied by the length of the encroaching utility facility as indicated in sketches JB 300A and JB 300B.
- For facilities crossing water service excavations: Depth as defined above multiplied by the width taken as the outside diameter width of structure plus one foot on either side, multiplied by the length of the exposed facility inside the trench.

The volume calculation shall in all cases include, the volume occupied by the utility proper within the payment area described above. Overlapping volume dimensions measured as described above may occur when multiple utilities are encroaching trench excavations. In such cases, all such utilities shall be counted as one utility limited by the maximum encroachment of pipes, conduit(s), and conduit banks faces. The volume shall then be calculated as described above and shown on sketches JB 100E, JB 300A and JB 300B. Utilities identified as abandoned by the facility operator prior to be beginning of excavation, are not included for payment under this item.

JB 300.1 – Special care excavation and backfilling for utility facilities in city trenches less than 5’ in depth

JB 300.2 – Special care excavation and backfilling for utility facilities in city trenches 5’ or greater in depth

E. Price to Cover

The price shall cover the cost of all labor, material, equipment, insurance and incidentals necessary to completely protect and maintain and accommodate the integrity of the facilities without disruption of service to the customers and in accordance with contract documents. The price shall also include the cost of modifications to typical work methods, including water tap search excavations and the use of such methods as hand excavation around existing single and multiple facilities; backfilling and compaction around, over and under the utilities including the use of special methods, installation and removal of sheeting from around the facilities, and traffic plates that may be required to temporarily close and/or complete the work.

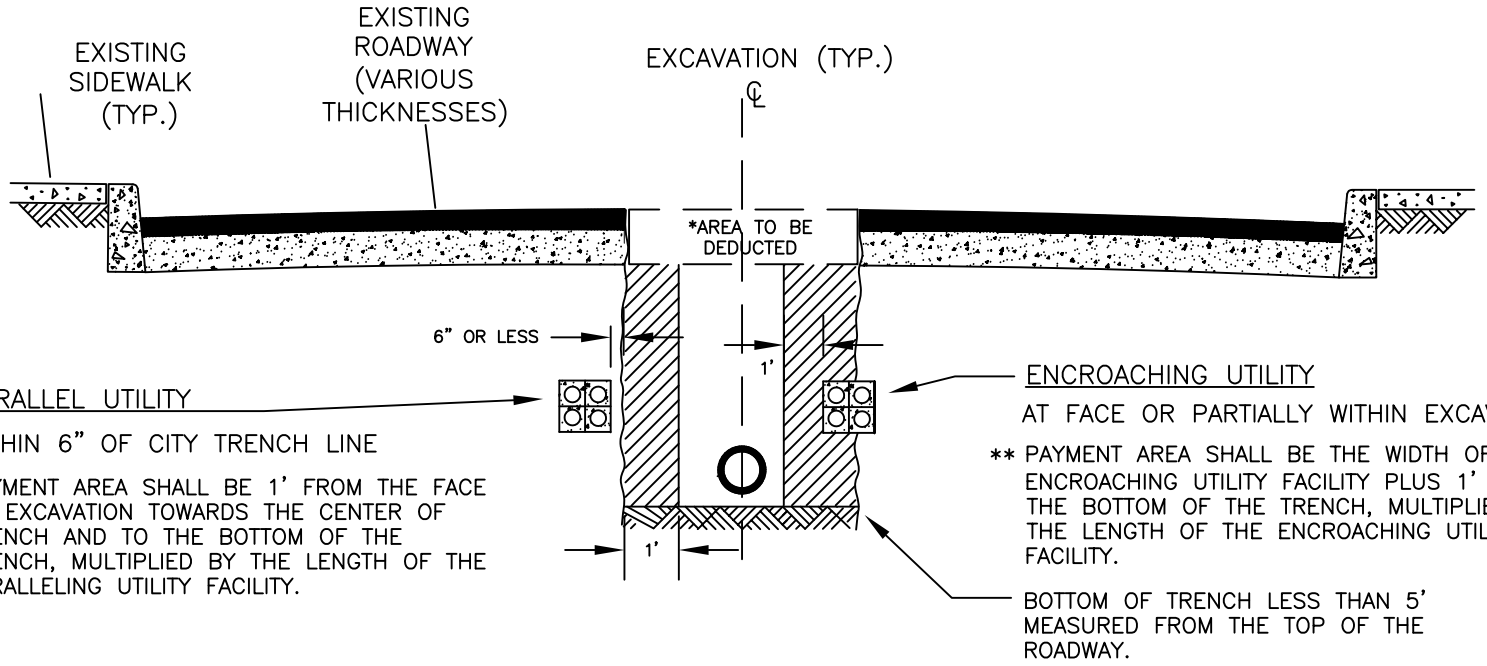
For item JB 300.1 – Depth shall be measured from the bottom of the existing roadway to the bottom of the trench up to a total trench depth of less than 5’ measured from top of roadway.

For item JB 300.2 – Depth shall be measured from the bottom of the existing roadway to the bottom of the trench.

If the lowest utility facility is located at a depth less than 5’ in a trench greater than 5’ deep, then only item 300.1 shall apply. Only one payment for either 300.1 or 300.2 shall apply per trench wall.

F. References

1. Sketches JB 100E, 300A, JB 300B
2. NYS Industrial Code Rule 753



PROFILE

N.T.S.

NOTES:

* VOLUME OF ROADWAY SHALL BE DEDUCTED FROM PAYMENT AREA

** ONLY ONE PAYMENT SHALL APPLY PER TRENCH WALL

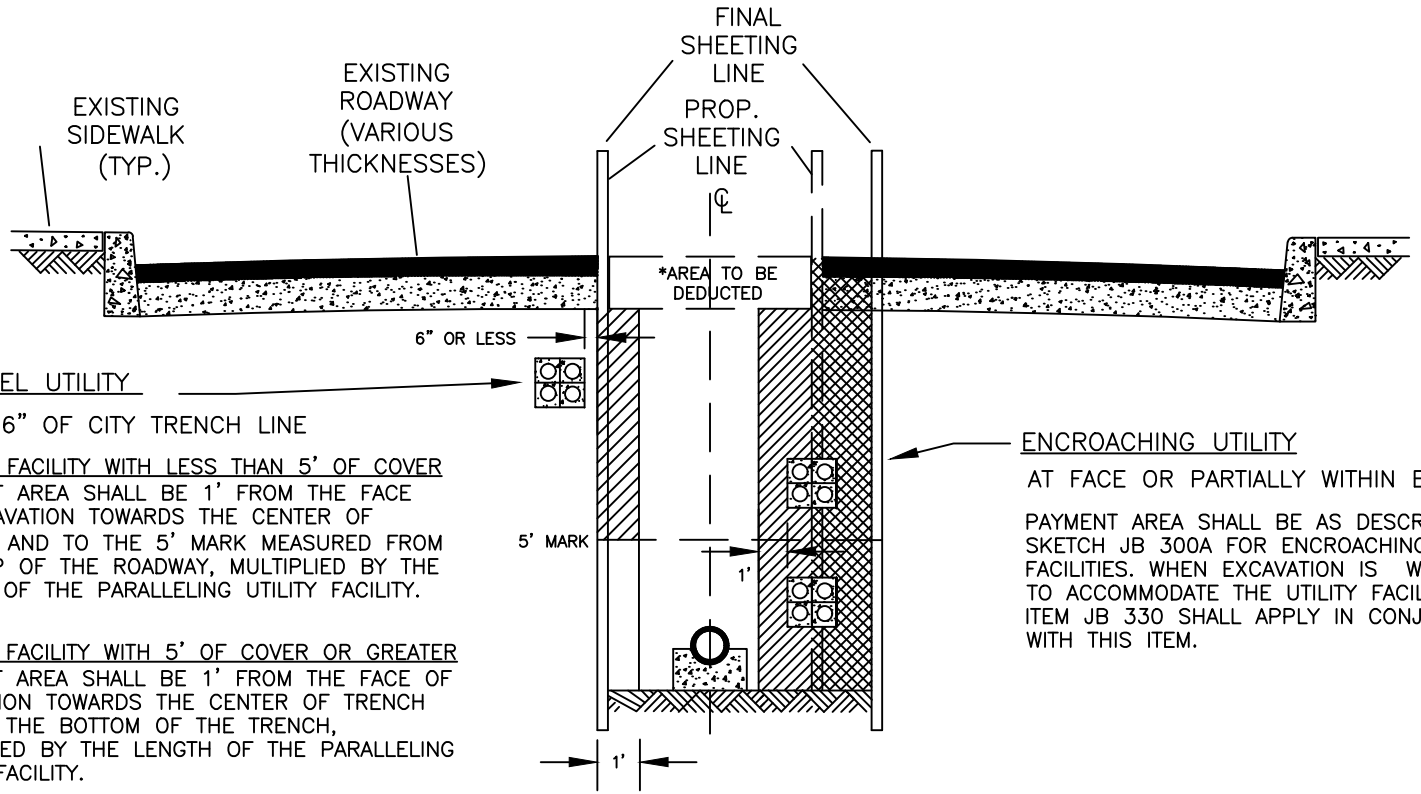
PAYMENT AREA

UTILITY PARALLELING/ ENCROACHING IN CITY FACILITY TRENCH LESS THAN 5' IN DEPTH

SKETCH NO.	LAST REVISION
JB 300 A	6/30/2015

JB-C9

PROJECT ID: QED1059



PROFILE

N.T.S.

ITEM 300 PAYMENT AREA

ITEM 330 PAYMENT AREA

NOTES:

* VOLUME OF ROADWAY SHALL BE DEDUCTED FROM PAYMENT AREA

** ONLY ONE PAYMENT SHALL APPLY PER TRENCH WALL

UTILITY PARALLELING/ ENCROACHING IN CITY FACILITY TRENCH 5' AND GREATER IN DEPTH

LAST REVISION	SKETCH NO.
10/05/2021	JB 300 B

JB-C10

PROJECT ID: QED1059

JB 351T - UTILITY POLE SUPPORTS

A. Description

This section describes the temporary supports for utility poles at locations directed by the facility operator(s) in consultation with the Resident Engineer, in order to maintain such poles in their existing upright position without disturbing attached wires and equipment. The Contractor shall provide all labor, material, equipment, insurance, and incidentals required to construct, install and maintain an effective support system that will meet the stated objective.

B. Materials

All materials required to construct and maintain an effective support system shall be supplied by the contractor and approved by the facility operator.

C. Method of Construction

Where directed by the utility representative, the Contractor shall furnish, install and remove utility pole supports and maintain utility poles as shown on Sketch JB 351. Alternate methods proposed by the Contractor will be permitted if approved by the facility operator.

D. Method of Measurement

The quantity of utility pole supports to be measured for payment shall be the number of utility poles supported. The Contractor will be paid only once for each utility pole supported and maintained no matter how many different construction operations have an impact on the pole.

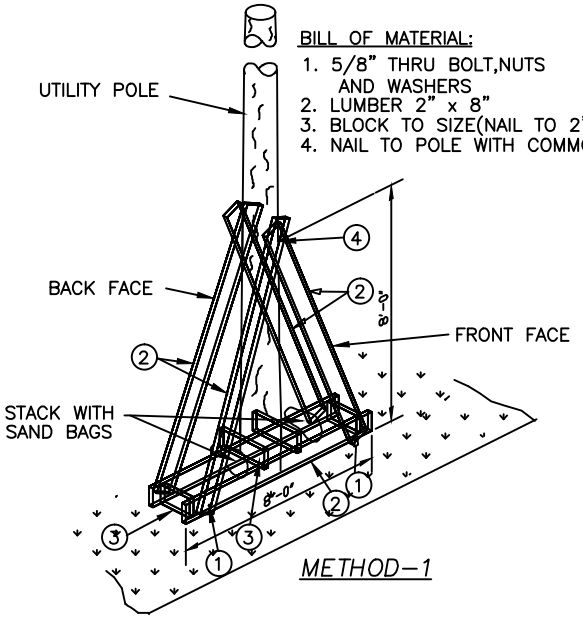
E. Price to Cover

The price shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to furnish, install, maintain and remove utility pole supports to completely support, maintain, protect, and accommodate the integrity of utility poles without disruption of service to customers. The price bid shall also include all additional impact cost associated with working around utility pole supports, poles and appurtenances.

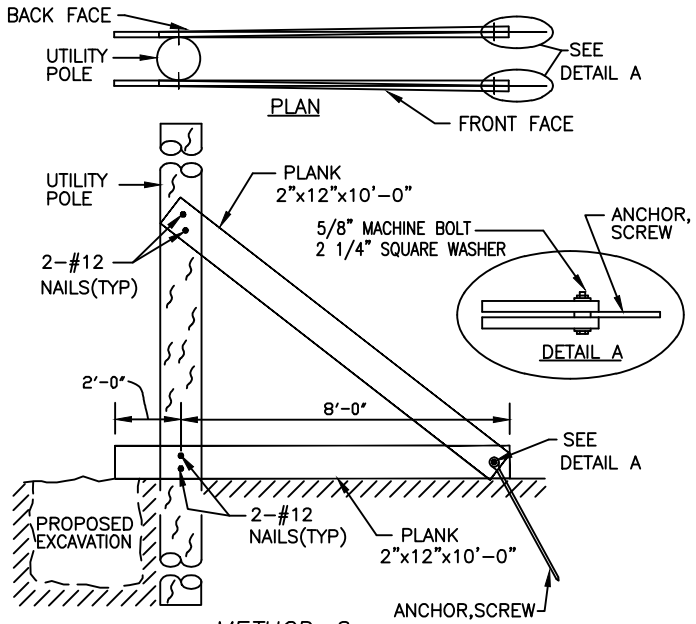
F. References

1. Sketch JB 351T

METHODS OF SHORING UTILITY POLES

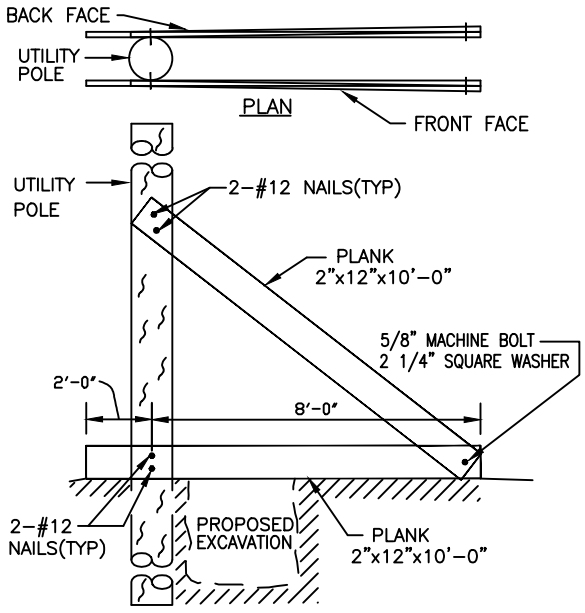


METHOD–1



METHOD–2

(FRONT FACE SHOWN,BACK FACE OPPOSITE HAND)



METHOD–3

(FRONT FACE SHOWN,BACK FACE OPPOSITE HAND)

NOTES:

1. THESE METHODS OF SHORING ARE GENERAL GUIDES. FIELD CONDITIONS WILL DICTATE WHICH METHOD WILL BE USED.VARIATIONS OF THESE METHODS WHICH ACCOMPLISH THE SAME PURPOSE MAY ALSO BE UTILIZED WHEN APPROVED BY OVERHEAD CONSTRUCTION DEPARTMENT.
2. ANY INFORMATION NOT SHOWN WILL BE DETERMINED IN THE FIELD TO SUIT THE FIELD CONDITIONS WHEN APPROVED BY THE OVERHEAD CONSTRUCTION DEPARTMENT.

SUGGESTED
METHODS OF SHORING
UTILITY POLES

LAST REVISION	SKETCH NO.
03/07/2018	JB 351T

JB 401 - TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES

A. Description

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to excavate by hand to locate and expose subsurface utilities encountered during construction in preparation for horizontal and vertical movement (covered by other Sections), and to support and maintain and protect the integrity of utility facilities including but not limited to:

1. Conduits;
2. Conductor(s) and/or cable(s);
3. Concrete Encased Conduit Bank(s);
4. Steel Pipe(s)

The trench to be excavated shall be determined by the size of the utility and the extent of adjustment required to avoid interferences as detailed on Sketch JB 402 A during all phases of contract work. The work shall be performed in accordance with the specifications, and at the directions of the facility operator in consultation with the Resident Engineer.

B. Materials

All materials used to support and maintain and protect shall be similar to those indicated on Sketches JB 100 A and 100 A-1 and shall be supplied by Contractor and be approved by the facility operator in consultation with the Resident Engineer.

C. Methods of Construction

The Contractor shall cut, break and remove various thickness of surface and base pavement, excavate by hand to expose, support and protect all utility facilities within the trench and then furnish and tamp backfill after work has been completed by the parties indicated under other Sections. The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility. Upon exposing the affected utilities sufficiently to determine relationships and/or clearances at the sole discretion of the facility operator in consultation with the Resident Engineer, the Contractor shall be permitted to proceed with a combination of hand and machine excavation sufficiently to wingback all interferences of cable and conduit. The trench shall be adjusted so as to provide a nominal cover of 24" over the highest conduit. The width of the trench shall be as directed by the facility operator in consultation with the Resident Engineer. The bottom of the trench shall be graded smooth and tamped to minimize initial settlement and to avoid "point" support of conduits. All stones projecting into the trench bottom shall be removed, and the voids backfilled before conduits are placed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench.

D. Method of Measurement

The Contractor shall be paid per cubic yard (C.Y.) of trench actually excavated to the limits directed as detailed in Sketch JB 402 A and to the satisfaction of the facility operator in consultation with the Resident Engineer. When two or more utility facilities requiring horizontal or vertical adjustment with different owners are in the same trench, the facility operators shall jointly determine the percentage of ownership of the trench.

E. Price to Cover

The price for excavation shall include the cost of all labor, materials, equipment, insurance, and incidentals necessary to completely expose, support and protect and maintain the integrity of the facilities without disruption of service to the customers and in accordance with the Contract Documents, associated maintenance of traffic, and traffic plates and sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand to expose existing structures, furnish, place and tamp backfill after required vertical and/or horizontal adjustments have been completed under other Sections. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be paid under other items. The price shall also include the cost of locating and supporting and protecting all utilities encountered including slings and beams installed for utility support when required. The price shall include maintaining the sheeting for the duration of the relocation and work required by the facility operator including but not limited to pipe-ripping covered under JB 402T.

F. References

1. NYS Industrial Code Rule 753
2. Sketch JB 100 A and A-1
3. Sketch JB 402 A

JB 402T - HORIZONTAL AND VERTICAL ADJUSTMENT OF TELECOMMUNICATIONS FACILITIES

A. Description

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to adjust and support and protect and maintain and accommodate the integrity of telecommunication facilities including but not limited to:

1. Conduit(s);
2. Cables and Air Pipe
3. Concrete Encased/Capped Conduit Banks

The work shall be performed in accordance with specifications and at the direction of the facility operator in consultation with the Resident Engineer.

B. Materials

All materials used to adjust and support and protect and maintain and accommodate the integrity of utility facilities shall be similar to those indicated on the standard Sketches JB 100 A & 100 A-1 and shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer.

Materials used for replacing conduit(s) removed under this item shall be supplied by and installed by the Contractor and shall include but not be limited to the following:

1. Bends
2. Split and Solid Conduit(s) PVC and Steel
3. Couplings and Adapters PVC, Tile and Steel
4. Straps or plastic ties

PVC conduit and fittings shall be as supplied by American Pipe and Plastics, Type “C” or approved equal.
Steel Pipe and fittings shall conform to ASTM A53 Schedule 40
Tile to PVC adaptors shall be as supplied American U-Tel or approved equal.

C. Methods of Construction

Lengths of “wing-back” shall be determined by the facility operator in consultation with the Resident Engineer. All work performed prior to that approval shall be at the contractors risk.

Methods of construction shall include but not be limited to the following:

1 Removal and Support

a. Break with hand held power tools, remove and dispose of plain or reinforced concrete encasement.

b. Break with hand held power tools, remove and dispose of conduit(s) enclosures and conduit that contain conductor(s) and/or cable(s) except steel/Iron conduits, inner ducts and 1 ¼" to 1 ½" PVC "quad ducts. Breaking – "ringing and ripping" - of steel/iron conduits belonging to ECS shall be performed by ECS forces only. Contractor shall make safe the work area to accommodate the ECS forces.

c. Support and protect exposed conduits, cables, innerduct and airpipe as shown in Sketch JB 100A-1 and approved by the facility operator in consultation with the Resident Engineer.

d. ECS tenants cables may require inspection, testing and encapsulation before they can be shifted. Contractor shall make safe the work area to accommodate these forces. Contractor shall be notified by the facility operator of the ECS tenant requirements before the conduits are broken-out.

2 Adjust or Move Conductor(s) and/or cable(s) and support

a. Cable shall be relocated horizontally and/or vertically as directed by the facility operator in consultation with the Resident Engineer

b. Support and protect conductors and/or cables as shown on Sketch # JB 100 A-1 and/or as directed by the facility operator.

3. Replacement, Encasement, Protection and Support

a. Replace vacant and loaded conduit(s) with solid and/or split conduit(s) and adapters.

1) Vacant Conduit - Repairs to conduits shall not be permitted. All damaged or impaired lengths of conduit(s) shall be removed and replaced with new conduit(s). The number of vacant conduits replaced shall be confirmed by the facility operator.

2) Loaded Conduit - Replacement of conduits that are removed from around existing cable(s) or innerduct shall be accomplished with split plastic (PVC) or split steel conduits as directed by the facility operator. Where split and solid plastic or steel conduit is used, the conduit(s) shall be spaced 1½ inches from each other. All split PVC shall be secured with plastic straps spaced at a maximum distance of eighteen (18") inches. Plastic conduit shall be joined with plastic couplings.

3) Adapting - Joining plastic conduit to existing conduits of other diameters or material shall be done using single or multiple adapters, (supplied by contractor).

b. If due to subsurface conditions, the cover is less than 20" from finished grade, the duct shall be protected with steel plates furnished by the contractor and measured for payment under Item JB 403T.

c. Support and protect cable(s) and/or conductor(s) and conduit(s).

d. Verify vacant conduits and provide pull ropes.

e. Encase all exposed conduit with concrete (f'c = 1200 to 1500 psi maximum) with slump commensurate to completely fill voids around conduits. Concrete encasement shall extend to two (2") inches beyond the limits of the duct bank vertically and horizontally.

D. Method of Measurement

The quantity to be measured for breaking out conduits, removing concrete, moving, protecting and supporting conductors and replacing conduits with split and solid conduit, shall be paid for by the linear foot (L.F.) of each conduit replaced. A linear foot of conduit shall be defined as one (1) single conduit measured along its longitudinal axis that has been broken out or moved from its original location either horizontally and/or vertically and measured in its final location. Quad PVC ducts produced as one unit shall be consider one duct for each quad unit. All conduits removed under this section and not restored shall be paid at 60% of the appropriate item in this section.

Multiple tile duct bank with concrete protection cover is not considered concrete encasement.

Each type of utility adjustment shall be paid for separately, the types of utility adjustments are defined as follows:

JB-402T.1 Existing Concrete Encased Non-Steel/Iron Conduits Placed in Final Position without Concrete Encasement. (L.F.)

JB-402T.1A Existing Concrete Encased Non-Steel/Iron Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.2 Existing Non-Concrete Encased Non-Steel/Iron Conduits Placed in Final Position without Concrete Encasement. (L.F.)

JB-402T.2A Existing Non-Concrete Encased Non-Steel/Iron Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.R1A Existing Concrete Encased Steel/Iron Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.R2A Existing Non-Concrete Encased Steel/Iron Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.V1 Existing Vacant Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.)

JB-402T.V1A Existing Vacant Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.V2 Existing Vacant Non-Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.)

JB-402T.V2A Existing Vacant Non-Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.)

JB-402T.J1 Existing Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.) in Which Only Conduit Joints are Broken Out and Conduits Remain Intact.

JB-402T.J1A Existing Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.) in Which Only Conduit Joints are Broken Out and Conduits Remain Intact.

JB-402T.J2 Existing Non-Concrete Encased Conduits Placed in Final Position without Concrete Encasement. (L.F.) in Which Only Conduit Joints are Broken Out and Conduits Remain Intact.

JB-402T.J2A Existing Non-Concrete Encased Conduits Placed in Final Position with Concrete Encasement. (L.F.) in Which Only Conduit Joints are Broken Out and Conduits Remain Intact.

E. Price to Cover

The unit price bid per linear foot (L.F.) of conduit shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to shift, adjust, support, protect, maintain and accommodate the integrity of utilities without disruption of service to the facility operator's customers and in accordance with contract documents. The price bid shall also include the cost of: breaking out, removal and disposal of plain or reinforced concrete encasements, conduits (except iron/steel), support of cables/conduits, replacement with field split, split and solid conduits, adapters, clamps, straps and couplings; verify vacant conduits and provide pull ropes; furnish and install concrete encasement, supports, slings and beams for utility support; changes of sheeting method and/or configuration when required and where necessary to accommodate the utilities during all phases of contract work; and removal of sheeting around the utilities, and all else necessary and required to complete the work.
The unit price shall include providing access to the facility operator pipe-ripping crews and tenants to verify and test cables before, during and after the pipe ripping operation completed by the facility operator or specialized contractor hired by the facility operator and after conduit removal by the Contractor The unit price shall include, but not limited to, opening and closing of fences; removal and replacement of temporary timber curb and opening and closing of traffic plates. Access to adjacent manholes impacted by the run is included in this item. JB 450 shall not be used in conjunction with JB-402T as JB-402T covers access to the work site at all times for work required under this item.

F. References

1. Sketches JB 100A and 100A-1
2. JB 403T
3. American Pipe and Plastics, P.O. Box 577, Binghamton, N.Y. 13902
4. American U-Tel, 9760 Smith Rd., Willoughby, Ohio 44094

JB 402T.3 - ACM REMOVAL AND DISPOSAL OF VERIZON/ECS CONDUITS WITH ASBESTOS CONTAINING MATERIAL TRANSITE PIPES (ACM-TP) UP TO AND INCLUDING 4" DIAMETER

A. Description

Under this item the contractor shall provide all labor, equipment, transportation, insurance and incidentals to remove and dispose of asbestos containing material - transite pipe (ACM-TP).

The contractor shall strictly adhere to all environmental requirements and work practices and notifications specified under construction details.

The transite conduits (ACM-TP) to be removed contain active cables and these cables will remain active during the transite conduits removal.

All removal and disposal of ACM-TP shall be done by pre-qualified contractors (or sub-contractors) as specified under method of construction.

B. Materials

The contractor shall supply separate dumpsters to be used exclusively for the removal and disposal of the ACM-TP and all other materials such as bagging, dumpster linings, respirators and filters, enclosures and all other incidental material required for the removal and disposal of the Verizon/ECS ACM-TP in accordance with laws, rules and regulations of Federal, State or local agencies.

C. Method of Construction

a. Work Scope

Removal of concrete encased conduits shall be accomplished by hand held chipping hammers. The removal should be in a pre-identified operation in order to minimize the potential release of airborne asbestos fibers from the ACM-TP.

b. Notification And Variance

Verizon/ECS is required by the New York City Department of Environmental Protection (NYCDEP) to obtain a site specific variance.

The contractor shall prepare the variance application letter and the NYCDEP Form ACP-9 and will submit them to the NYCDEP not sooner than four (4) weeks prior to the start of the ACM-TP removal.

The contractor is responsible for preparing the NYCDEP Form ACP-7 together with NYCDEP Form ACP-9 as the applicant and providing these forms to Verizon/ECS for review and signature prior to submittal to the NYCDEP seven

(7) weeks prior to the commencement of the project (Notice to begin construction).

The contractor shall prepare the New York State Department of Labor (NYSDOL) notification Form DOSH-483 prior to submittal to the NYSDOL at lease four (4) weeks prior to the commencement of the project.

The contractor shall prepare the United States Environmental Protection agency (USEPA) Notification of Demolition and Renovation form for submittal four (4) weeks prior to the commencement of the project.

c. Vendor Prequalification

All subcontracted environmental parties which shall include but not be limited to asbestos abatement contractor, project monitoring firm, air sampling and analytical contractor can be selected from Verizon's currently approved vendor lists. Should the contractor elect to use his own list, that information shall be provided to Verizon/ECS for review/ approval at least four (4) weeks prior to date the ACP-7 form is submitted to Verizon.

d. Waste Transport and Disposal

The ACM-TP that is removed will be disposed of as ACM waste at an asbestos landfill. This landfill site shall be selected from one of Verizon’s list of approved disposal sites. The contractor will identify and obtain approval from Verizon for the transporter. The contractor can select one of the Verizon’s currently approved transporters, or alternatively select a transporter of its own. Should the contractor elect to use latter, that information shall be provided to Verizon/ECS for review/approval at least 4 weeks prior to the date the ACP-7 is submitted to Verizon.

An original of the asbestos waste manifest is to be provided to the Verizon/ECS representative for all shipments that leave the work site. A signed copy (by the selected landfill) of the waste manifest is to be provided to Verizon/ECS not later than 10 days from the date the shipment leaves the site.

e. Exhibits

The forms are a component part of this item.

1-NYCDEP Form ACP-7
2-NYCDEP Form ACP-9R1
3-NYSDOL Form DOSH-483
4-USEPA - Notification Form

f. Work Plan

1. For this item the contractor must submit to Verizon/ECS for review and approval a detailed site specific work plan.

2. The contractor must submit to Verizon/ECS for review and approval any alternate proposals for variance requested from Regulatory Statutes (NYSDOL & NYCDEP).

3. The contractor shall provide all sampling and laboratory analysis required under the Industrial Code Rule 56 Subpart 17 and all applicable Blanket Variances. All sampling and analysis shall be performed by a firm independent from the Contractor. The price for the cost for compliance air monitoring sampling and analysis shall be included in the price bid for listed items.

4. Within five (5) calendar days of the receipt of the results of any part of the compliance air sampling and analysis, the Contractor shall forward a copy of those results (showing the name and address of the laboratory, the type of test performed, the method of measurement and all information normally relevant to sampling and analysis of asbestos remediation procedure) to Verizon/ECS on-site representative.

g. Project Folder

Upon completion of the abatement, the Contractor shall provide a complete job folder with the following documents, which shall include chain of custody records:

a. Copy of Supervisor/Handler certifications
b. Copy of the Subcontractor's Enclosure Entry Permit
c. Result of Analysis for All Bulk Samples, Air and Clearance Monitoring
d. Copy of all Notifications (City, State, Federal)
e. Copy of the Vendor's Certificate of Insurance
f. Copy of the Waste Transporter Permit
g. Signed Asbestos Waste

D. Method of Measurement

Payment under this item shall be paid for by the linear foot (L.F.) of each conduit removed. A linear foot of conduit shall be defined as one (1) single conduit up to and including 4" nominal diameter measured along its longitudinal axis that has been broken out and removed.

E. Price to Cover

The unit price per linear foot (L.F.) shall cover the actual costs of all supervision, labor, insurance, (including asbestos liability insurance), materials and equipment necessary to complete the work. The Contractor shall cover the cost of preparing variance application, all filing fees and will submit the application with associated fees to the NYCDEP for processing.

Any contractor's alternative proposals for variance requested from regulatory statutes (NYSDOL & NYCDEP) shall be also included in the actual cost.

Excavation and backfill shall be paid for under JB 401.

F. References

N/A

JB 403T – FURNISH AND INSTALL STEEL PROTECTION PLATES FOR TELECOMMUNICATIONS FACILITIES

A. Description

Under this section, the Contractor shall furnish and install as required permanent steel protection plates over telecommunications facilities where directed by the facility operator(s).

B. Materials

Material shall be:

¼" thick ASTM A-36 plates. Maximum size 24" by 48".

3/8" thick ASTM A-36 plates. Maximum size 12" by 18".

Thickness to be determined by the facility operator(s)

C. Method of Construction

Steel protection plates shall be placed in accordance with the attached facility operator(s) standard sketch JB 403T. All protective plates shall overlap a minimum of 3".

D. Method of Measurement

The quantity for payment shall be the area of permanent steel plating protection furnished and installed (excluding overlap) and measured in place in Square Feet (S.F.).

JB 403T.1 – Furnish and Install 1/4" thick steel plate (S.F.)

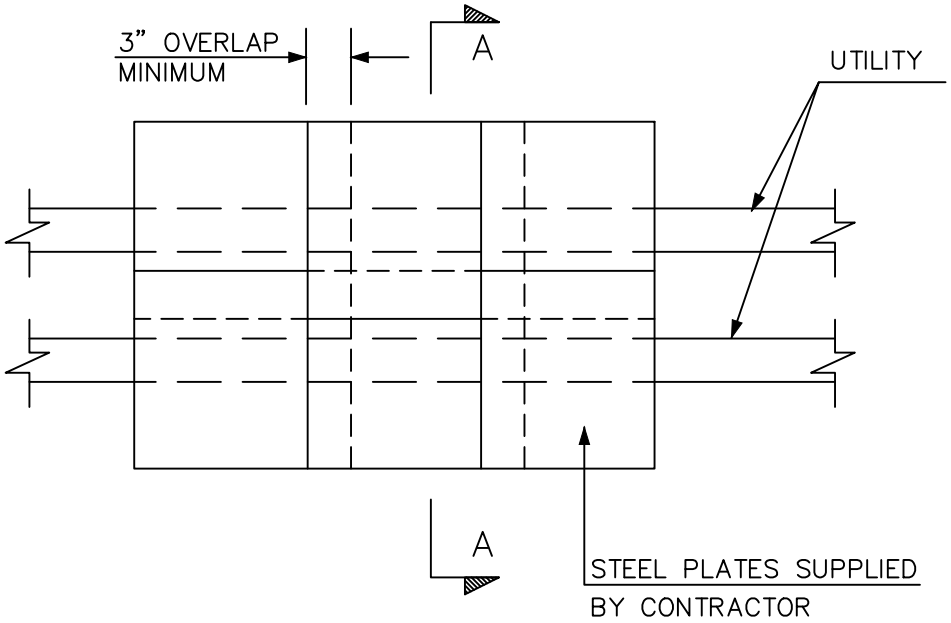
JB 403T.2 – Furnish and Install 3/8" thick steel plate (S.F.)

E. Price to Cover

The price shall cover the cost of all labor, material, equipment, insurance, and incidentals necessary to complete the work.

F. References

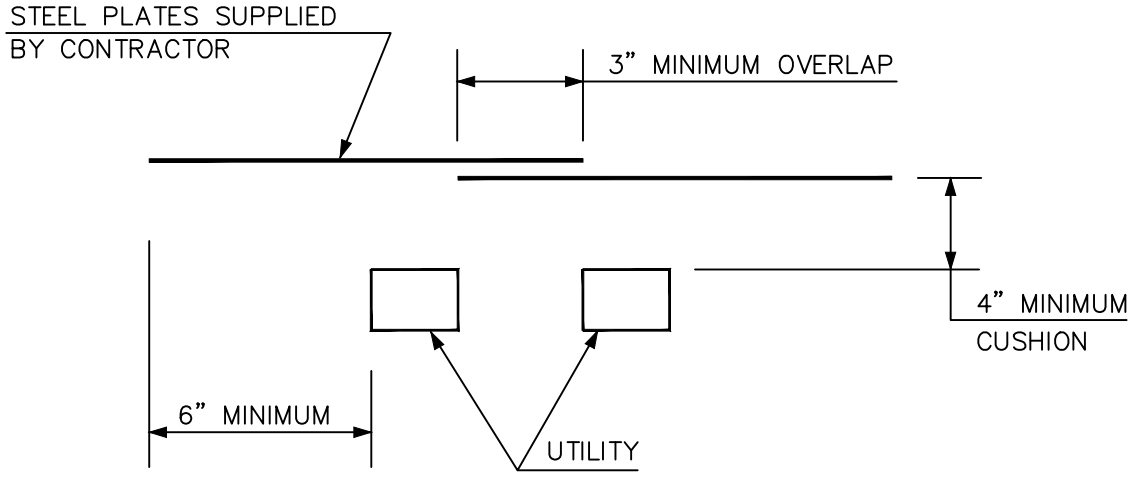
Sketch JB 403T



AREA FOR PAYMENT
SHALL BE AS MEASURED
IN PLACE (EXCLUDE OVERLAP)

PLAN

NOT TO SCALE



SECTION A–A

NOT TO SCALE

TYPICAL PLATE SIZES:
6" x 48" x 1/4"
12" x 48" x 1/4"
24" x 48" x 1/4"
12" x 24" x 3/8"

REVISIONS
09/13/2017

J.B. SKETCH	
PLACING STEEL PROTECTION PLATES FOR COMMUNICATION FACILITIES	
CONTRACT NO.	SKETCH NO. JB 403 T

JB 404 - PIER AND PLATE METHOD OF PROTECTION FOR DUCTILE IRON WATER MAINS AND OTHER SHALLOW FACILITIES

A. Description

Under this section the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to protect ductile iron water mains that are installed with a cover of 24 inches or less crossing over various utility facilities. This section shall also apply for other facilities with shallow cover where protection plates are not sufficient and pier and plate method is required. The work shall be performed in accordance with the contract plans, specifications and at the direction of the facility operator.

B. Materials

The Contractor shall supply all material (concrete, beams, plates, etc.) necessary to provide the pier and plate method of protection as shown on BWS Standard Drawing No. 46464-Z.

C. Method of Construction

The Contractor shall provide pier and plate protection in accordance with BWS Standard Drawing No. 46464-Z. The Contractor shall support, maintain and accommodate the water main and all other utility facilities during the installation of the pier and plating components. The Contractor shall be solely and totally responsible for disturbances and/or any damages to such facilities.

D. Method of Measurement

The quantity to be measured for payment shall be the additional amount of square foot (S.F.) of steel plate required to be installed to protect ductile iron water mains crossing over utility facilities with a cover of 24 inches or less, or for other shallow facilities where the pier and plate method may be required, as directed by the Facility Operator.

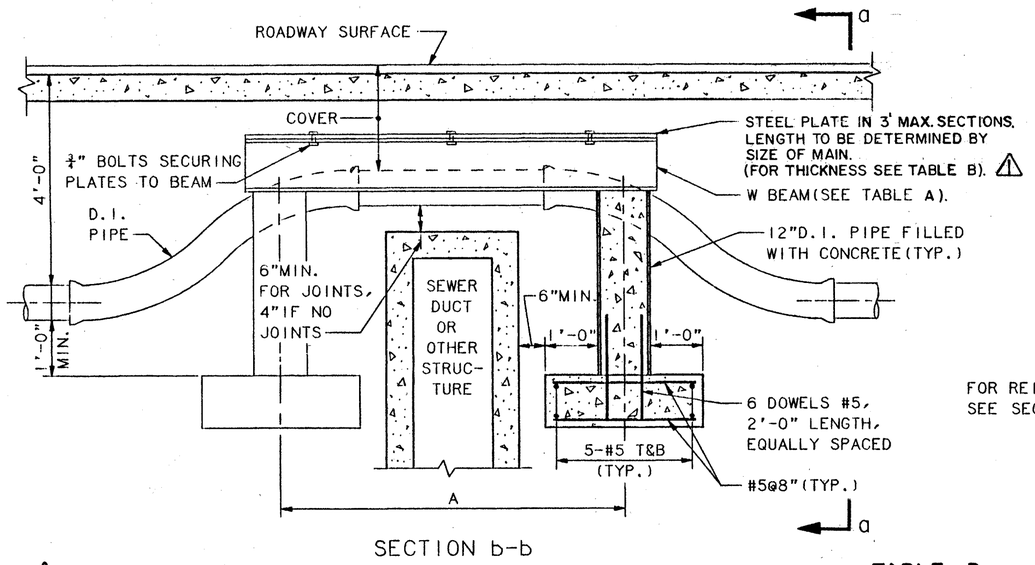
E. Price to Cover

The price shall cover the cost of all supervision, labor, material, equipment, and incidentals necessary to construct the specified method of protection. The work shall also cover the cost to cut, break and remove additional pavement, additional excavation, special care excavation around utilities, sheeting, maintenance of traffic, traffic plates, and to furnish and install additional backfill and pavement restoration.

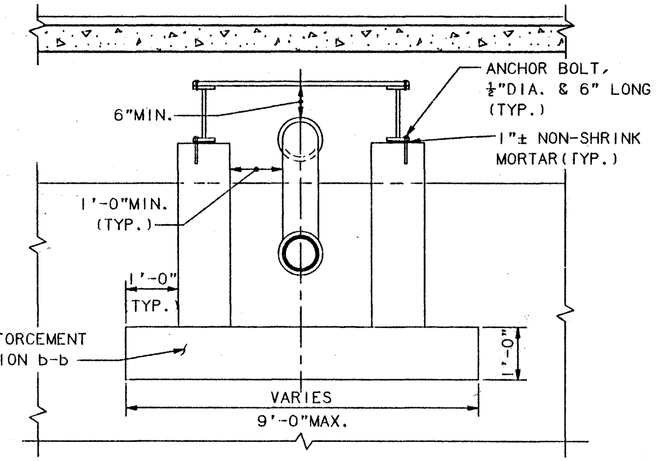
F. References

1. BWS Standard Drawing No. 46464-Z

PROJECT ID: QED1059



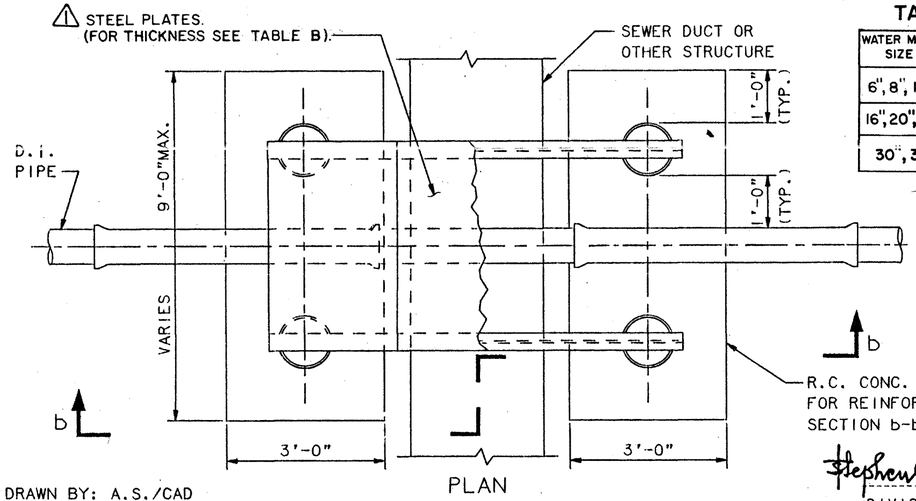
SECTION b-b



SECTION a-a

TABLE A

A ft	M_y k-ft	S_x MIN. in^3	SUGGESTED BEAM SIZE	
5	29.13	15.8	W12x16 W10x17	W8x18
6	35.7	19.2	W12x19 W10x19	W8x24
7	42.5	22.9	W12x22 W10x22	W8x28
8	54.8	30.44	W12x26 W10x30	W8x35
9	66.73	37.07	W14x30 W12x30	W10x39
10	79.1	43.94	W14x34 W12x35	W10x45
11	91.7	50.94	W14x38 W12x40	W10x49
12	104.7	58.17	W14x43 W12x45	W10x54
13	117.92	65.51	W16x40 W14x48	W12x53
14	131.5	73.06	W16x45 W14x53	W12x58
15	145.3	80.72	W16x50 W14x61	W12x65



PLAN

TABLE B

WATER MAIN SIZE	STEEL PLATE THICKNESS
6", 8", 12"	1"
16", 20", 24"	1¼"
30", 36"	1½"

⚠1

NOTES:

1. OFFSETS SHALL HAVE RESTRAINED JOINTS.
2. CLEAN FILL TO BE THOROUGHLY COMPACTED AROUND PIPE BETWEEN BEAMS.
3. ALL PAVEMENT RESTORATION OVER PLATES TO HAVE 6" MIN. CONCRETE BASE. WHEN THE STEEL PLATE IS ADJACENT TO THE BOTTOM OF THE CONCRETE BASE, A BOND BREAKER SUCH AS TAR PAPER SHALL BE INSTALLED BETWEEN THE PLATE AND THE CONCRETE.
4. THE DESIGN FOR PROTECTION OF MAINS MAY BE VARIED AS REQUIRED FOR A PARTICULAR LOCATION, BUT SHALL CONFORM TO THE GENERAL REQUIREMENTS AS SHOWN ON THIS DRAWING. ANY MAJOR DEVIATION FROM THESE REQUIREMENTS SHALL BE APPROVED BY THE ENGINEER.
5. SUPPORT OF PIERS OR BEAMS DIRECTLY ON SEWER, SUBWAY OR OTHER STRUCTURES SHALL BE APPROVED BY THE ENGINEER.
6. IF COVER IS LESS THAN 1'-6", PIPE SHALL BE INSULATED WITH 2" MIN. THICK OF APPROVED INSULATION WITH ALUMINUM JACKET.
7. DIMENSIONS SHOWN FOR CONCRETE SUPPORT ARE APPLICABLE UP TO AND INCLUDING 36" DIAMETER OFFSET.
8. STEEL BEAMS, EXTERIORS OF PIPE COLUMNS, AND OTHER EXPOSED METAL COMPONENTS SHALL BE COATED WITH COAL TAR ENAMEL BEFORE BACKFILLING THE EXCAVATIONS.
9. ⚠1 **ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36**

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY

METHOD FOR PROTECTING D.I. WATER MAINS WITH SHALLOW (LESS THAN 24") COVER

SCALE: NOT TO SCALE MAY 1986

Stephen Gyimesi P.E.
DIVISION ENGINEER

Walter C. Fitzpatrick P.E.
CHIEF OF DESIGN

Edward A. Abadie P.E.
DEPUTY DIRECTOR

DRAWN BY: A.S./CAD
CHECKED BY: A.B.

NO.	DATE	REVISIONS	DIV. ENG.	CH. OF DES.	DEP DIR.
⚠1	02-10-87	ADDED TABLE B & NOTE 9	J. Butler	WCF	EAA

46464-2

JB 405 - EXCAVATION FOR INSTALLATION OF UTILITY FACILITIES

A. Description

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals necessary to excavate, maintain trenches and backfill for the installation of new utility facilities including but not limited to:

1. Conduits
2. Non-cost sharing gas facilities
3. Steam mains
4. Steel pipe(s)

The trench to be excavated shall be determined by the size of the utility facility to be installed. The work shall be performed in accordance with applicable specifications, at the direction of the facility operator.

B. Materials

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator.

C. Methods of Construction

1. Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant and as directed by the facility operator. The trench shall be adjusted so as to provide a nominal cover as defined in the specifications for the facility being installed over the new utility facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator. The width of the trench shall be as directed by the facility operator or as shown on Sketch JB 603T (ECS only). The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of backfill material or in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new utility facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new utility facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new utility facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator.

Care shall be taken that no existing utility facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new utility facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

2. Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator to facilitate the installation of the new utility facility. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator. Upon completion of installation of the new utility facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

3. Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6”) thick asphaltic concrete mixture in roadway areas or a two inches (2”) thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract.

D. Method of Measurement

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated and backfilled as directed by the facility operator or as shown on Sketch JB 603T for JB 603T Items. The volume occupied by existing pipes or other structures will not be deducted from the total volume measured.

JB 405.1 - Trench Excavations for installation of Utility Facilities with total depths less than five feet (C.Y.)

JB 405.2 - Trench Excavations for Utility Facilities with total depths equal to or greater than five feet (C.Y.)

E. Price to Cover

The unit price bid for the various trench excavation items shall include the cost of all labor, materials, equipment, insurance, and incidentals necessary to completely expose, protect and maintain the integrity of the facilities without disruption of service to the customers and in accordance with the contract documents. The price shall also include, installation of traffic plates as well as opening and closing of plates as may be required in order to provide access to trench; installation, removal and maintenance of tight sheeting as required; cutting, breaking and removing various thickness of surface and base pavement; excavation by hand to expose

existing structures; furnishing, placing and compacting clean backfill following installation of utility facility in compliance with DOT requirements. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be paid under city items. The price shall also include the cost of locating and protecting all utilities encountered as required.

Clean backfill material in accordance with specifications shall be used around gas facilities and critical facilities shall be paid for under item JB 303.

F. References

1. Item JB 303
2. Sketch JB603T
3. Con Edison Specifications, latest revisions

CEHSP S13.00 – Excavation and Trenching

JB 450 – CONSTRUCTION FIELD SUPPORT

A. Description

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals necessary to provide construction field support, while maintaining and protecting surface and subsurface facilities, at various locations approved solely by the facility operator. The Contractor shall encounter various surface and subsurface utility facilities while performing various construction field support operations, which may include but are not limited to working over, under, adjacent to, around, in between and in close proximity of:

1. Conduits
2. Conductors
3. Concrete encased conduit banks
4. Steel pipes
5. Gas mains
6. Steam mains
7. Oil-o-static facilities
8. Utility structures and covers

The actual construction field support operation to be performed by the Contractor shall be performed in accordance with the contract plans, specifications or as determined based on actual field conditions and at the sole discretion and direction of the facility operator. This item shall apply to various field support operation tasks for which there are no other applicable JB Items to cover the required work. This item will not apply and will not be paid when there are other applicable JB items available either partly or completely covering tasks described below as determined solely by the facility operator.

B. Materials

All materials used to provide construction field support shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer.

C. Methods of Construction

It is the intent of this item that the Contractor provides field support construction crews suffice to perform various item type tasks required as described. For the purpose of this item a crew consists of more than one non-management individual. The Contractor shall provide all labor and equipment necessary to perform the required task as described below under existing field conditions at various locations and at the sole discretion and direction of the facility operator in consultation with the Resident Engineer. The Contractor shall perform the necessary construction field support, while maintaining and protecting surface and subsurface facilities. The Contractor shall employ approved methods of operation, including the use of appropriate equipment and tools that will enable him to complete the field support operation work as described in the Item Type description below. Existing facilities that are encountered during the construction field support operation shall be supported and protected similar to those indicated on sketches JB 100A and 100B and in a manner suitable to the facility operator in consultation with the Resident Engineer and are deemed included in this item except as included under JB-402T. The Contractor shall properly dispose of all materials excavated away from site, which may require the use of hand held tools and equipment in order to ensure that the integrity of the underground utility facilities are not jeopardized. Care should be taken to avoid damage to existing utility facilities and

structures, and to adjacent curbs, sidewalks, pavements and their foundations, and to avoid caving or sliding banks within excavations.

D. Method of Measurement

1 – Quantity - The quantity to be measured for payment shall be the number of actual crew hours (CRHRS.) provided by the Contractor for performing the various types of construction field support operation as directed by the facility operator in consultation with the Resident Engineer.

2 – Type – The unit type to be measured for payment shall be based on the actual task performed by the contractor and covered by the applicable Item Type. The tasks described within the Bid Item Type below are provided as a guide only as to the general nature of the various functions included, but these examples in no way limit the use of the item to these functions only. The contractor should use this information in order to approximate the various required crew sizes necessary to perform the work covered by this item in a productive, safe and efficient manner. The actual construction crew size required to perform the field support operation shall be determined solely by the contractor in order to perform the required construction field support operation. It is the responsibility of the contractor to provide appropriate field support crews capable of performing required tasks in a productive, safe and efficient manner. The actual crew performing the operation will not be considered, by the facility operator in consultation with the Resident Engineer, when determining the applicable item type, which shall be only as per the task performed.

Note: Only one measurement type will be used for each defined construction field support area.

Type .1 = Construction Field Support requiring an average size survey crew that will perform typical field survey functions and provide quality data analysis reports.

Type .2 = Construction Field Support requiring an average small size crew capable of performing various tasks not requiring the use of a machine or operator, which may include but are not limited to: opening/closing subsurface structure cover(s), setting/resetting MPT setup(s), assisting Utility Facility/Specialty crew(s) not included in JB 402T or JB 450.5, performing conduit occupancy identification, clean-up storage work-site area, etc.

Type .3 = Construction Field Support requiring an average medium size crew capable of performing various tasks which include the use of a machine and operator, which may include but are not limited to: excavations due to cable failures, including emergency type excavations, construct manhole enclosures, installing support system for utility facilities, dewatering utility structures and excavations, opening/closing traffic and/or pedestrian plates, etc not included in JB 402T or JB 450.5.

Type .4 = Construction Field Support requiring an average large size crew capable of performing various tasks that requires the use of multiple machine(s) and operator(s), which may include but are not limited to: assistance during heat contingency, welding, repositioning and placing large diameter pipe, etc.

Type .5 = Construction Field Support requiring an average small size crew when requested by the facility operator to assist the facility operator or speciality contractor hired by the facility operator in shifting and supporting the conduits during pipe-ripping operations and all else necessary as required to complete the work including but not limited to constructing temporary work platform and temporary weather protection.

E. Price to Cover

The unit price bid for the various construction field support items shall include the cost of all labor, materials, equipment, insurance, and incidentals necessary to provide construction field support, which may include but is not limited to working over, under, adjacent to, around, in between and in close proximity of surface and subsurface utility facilities and exposing, supporting, protecting and maintaining the integrity of the facilities without disruption of service to the general public, utility customers and in accordance with the Contract Documents at various locations approved by the Facility Operator in consultation with the Resident Engineer. The unit price shall also include openings and closings of plates, and cones, barrels, arrow-boards, etc. and installing, shifting, moving and relocating cones, barrels, arrow-boards, etc. as may be required in order to provide access to excavations and during specialty work being performed by others excluding work operations covered under JB402T. The unit price shall also include excavating by hand to expose existing structures. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price bid. The unit price shall also include the cost of supporting and protecting all utilities encountered during the construction field support operation, as required except work operations covered under JB 402T. The unit price bid shall also include alternate methods for construction field support, which may include changes in equipment and special operations, and sequencing and the use of only all hand-held tools due to existing field conditions, including potential delays and extended performance. Any and all Contractor method changes and operation modifications employed for construction field support are deemed to be included in the price bid for this item. Work under this item may be paid in combination with other City, utility or facility accommodation Items bid under other contract items except where expressedly excluded from that item.

F. References

1. Sketches JB 100A, JB 100B

JB 603T - FURNISH AND INSTALL TELECOMMUNICATIONS CONDUITS

A. Description

Under this Section, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals required to procure and install conduit for the purpose of installing the facility operator's utilities. Conduit runs shall be as shown on the contract drawings or as specified by the facility operator in consultation with the Resident Engineer.

B. Materials

Conduit shall consist of:
PVC – 2" and 4" diameter or 1 ¼" Quad, Type "C" as supplied by American Pipe and Plastics or approved equal
Steel - 4" diameter, ASTM A53, Schedule 40 or approved equal
All conduit including sleeves, couplings, bends, pulling lines, etc. shall be supplied by the Contractor and approved by the facility operator in consultation with the resident Engineer.
The Contractor shall supply all material (Mortar, Brick, etc.) to make repairs to opening(s) as approved by the facility operator in consultation with the Resident Engineer.

C. Method of Construction

The Contractor shall install the specified conduit(s) then rod, mandrel and wire (install pulling line) the new conduits. When conduit pipes are to be connected to existing underground ducts, manholes, or boxes, the Contractor, using hand-held tools only, shall cut existing conduit, to pick-up existing underground conduits with new conduits, make openings into manholes or boxes, install/connect the conduit, and make repairs to seal the openings in the structure.

Steel pipe shall be used for shallow cover and crossing or paralleling steam mains as directed by the facility operator in consultation with the Resident Engineer.

When the facility operator required a combination of conduit types and materials the facility operator will define the configuration of the conduit system and the location of each type within the conduit bank. All conduit shall be spaced 1 ½" both vertically and horizontally from the adjacent conduit(s). All conduits shall be encased in lean concrete (f'c = 1200 to 1500 psi maximum) which shall extend 2" beyond each face of the conduit formation, above and each side of the conduit formation.

If due to subsurface conditions, the cover is less than 20" from finished grade, the duct shall be protected with steel plates furnished by the facility operator(s) and measured for payment under Item JB 403.

The work shall be performed in accordance with the contract plans, specifications, and at the directions of the facility operator in consultation with the Resident Engineer.

D. Methods of Measurement

The quantity to be measured for payment shall be the number of linear feet (LF) of conduit trench for which conduit was furnished and installed:

1. 603T.1 - Install 1 ea. 2", 4" or 1 ¼" Quad" Conduit (PVC or Steel) in any combination
2. 603T.2 - Install 2 ea. 2", 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
3. 603T.3 - Install 4 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
4. 603T.4 - Install 6 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
5. 603T.5 - Install 8 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
6. 603T.6 - Install 12 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
7. 603T.7 - Install 15 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
8. 603T.8 - Install 24 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination
9. 603T.9 - Install 30 ea. 4" or 1 ¼" Quad Conduits (PVC or Steel) in any combination

A Quad, consisting of four 1 ¼" conduits shall be supplied as one unit. For purposes of measurement and payment each quad unit of four 1 ¼" ducts shall be counted as one duct.

For any equivalent combination not fitting the above categories payment shall be based on the next higher category.

E. Price to Cover

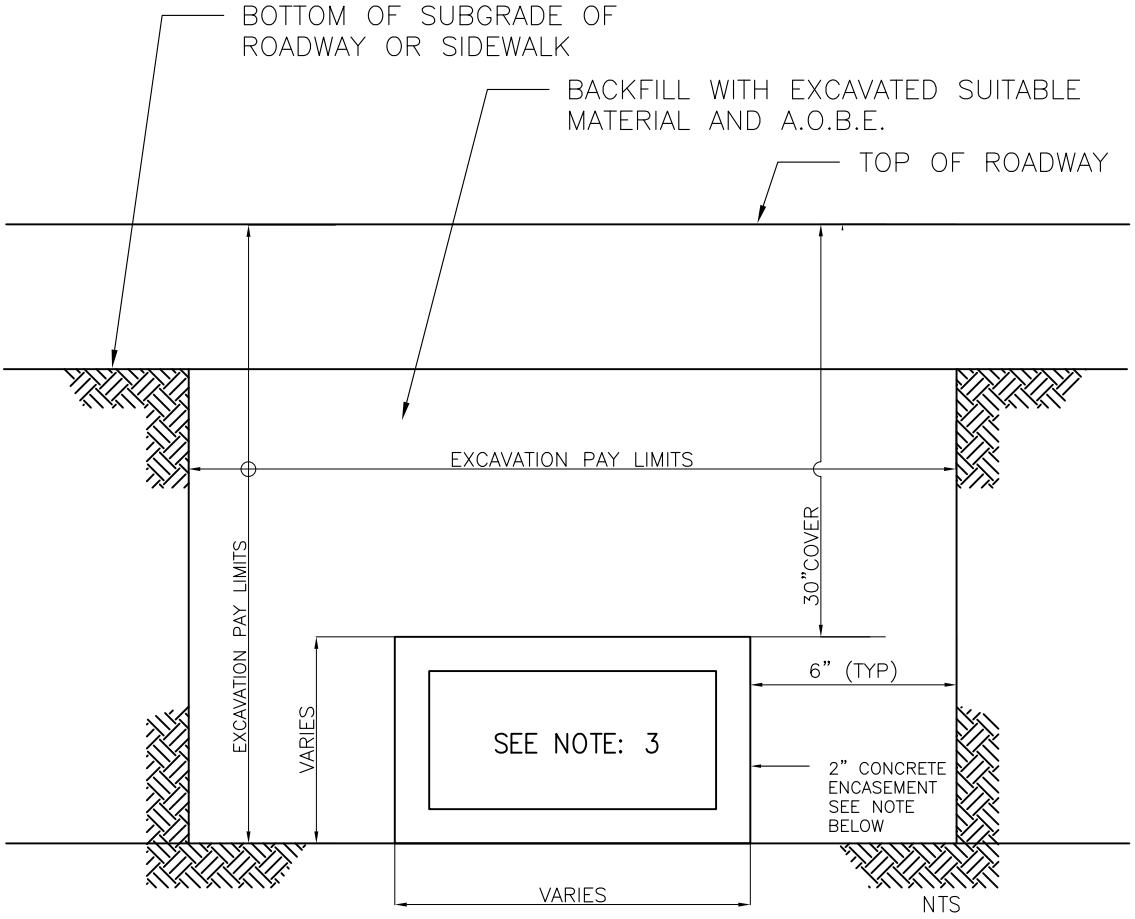
The unit price per linear foot of Conduit trench shall cover the cost of all labor, materials, equipment, insurance and incidentals necessary to furnish, install, rod, rope, and perform any other associated work required to install the conduit completely in place. Where conduits are to be connected to ducts, manholes or boxes, the cost of cutting and/or breaking into the ducts, manholes or boxes, installing and sealing the conduit, including duct plugs; and making repairs to the openings in the structure shall be considered as included in the unit price bid for the installation of the conduit. All acceptance testing, including passing a mandrill with a diameter of 1/8" less than the inside diameter of the duct through the entire length of the duct, as required by the facility operator shall be considered as included in the unit price.

Payment for trench excavation shall be paid under Item JB 405.

Steel protection plates shall be paid for under Item JB 403T

F. References

1. Sketch JB 603T
2. Item JB 405
3. American Pipe and Plastics, P.O. Box 577, Binghamton, N.Y. 13902



TYPICAL CONDUIT EXCAVATION AND BACKFILL

NOTES:

QUEENS, BROOKLYN & STATEN ISLAND

1– CONCRETE ENCASE REQUIRED IF TOP OF DUCTS IS 20" OR LESS FROM SURFACE AND ALL BENDS, SWEEPS AND CHANGE OF GRADE. FOR COVER LESS THAN 20", 3/8" STEEL (A36M) COVER PLATES IN ADDITION TO THE CONCRETE ENCASEMENT SHALL BE PROVIDED.

MANHATTAN & BRONX,

2– FOR COVER LESS THAN 20", 1/4" STEEL (A36M) COVER COVER PLATES IN ADDITION TO THE CONCRETE ENCASEMENT SHALL BE PROVIDED.

3– CONDUIT CONFIGURATION TO BE DETERMINED BY ECS/VERIZON REPRESENTATIVE.

J.B. SKETCH	
TRENCH EXCAVATION FOR CONDUIT	
09/13/2017	CONTRACT NO. / SKETCH NO. JB 603T

JB 636E - ADJUSTMENT OF UTILITY HARDWARE

Under this section the Contractor shall adjust existing utility street hardware including vault grates, valve boxes, etc., to the proposed grade by either building up or lowering the installation and resetting the castings, as and where directed by the facility operator.

A. Description

Building up or lowering the installation and resetting the castings shall consist of removing the existing frame and cover, building up or decreasing the existing installation, replacing the frame and/or cover if damaged, as determined by the facility operator, with a new frame and/or cover furnished by the facility operator, and setting the frame and cover to the new elevation.

B. Materials

Materials used shall comply with the Standards and specifications of the facility operator having jurisdiction over the installations. Where high-early strength concrete is required by the Resident Engineer to be placed adjacent to utility installations then the requirement for mortar shall be quick setting mortar capable of obtaining a minimum compressive strength of 1,500 psi in two (2) hours, and the requirement for concrete shall be high-early strength complying with current N.Y. State Department of Transportation, Standard Specifications for Class F concrete.

When castings and/or covers are deemed inadequate at a location as determined by the facility operator, the facility operators shall furnish new castings and/or covers to the Contractor for installation. The Contractor is required to inform the utility operator in advance of the need for the castings. Materials supplied by the facility operator shall be delivered to the contractor’s designated storage area.

C. Methods of Construction

The Contractor shall breakout and dispose of sidewalk, curb, pavement and/or pavement base around existing casting, excavate as required to remove casting and install existing or replacement casting, remove casting, protect opening, reinstall existing casting or install new casting to the proposed grades, backfill, grade and compact fill around casting, install base concrete and or sidewalk pavement and curb, tack coat around frame, install and remove temporary pavement around casting where directed by the facility operator; and install and compact asphalt binder and wearing course or other permanent pavement around casting and perform all work in accordance with the contract plans and the specifications.

Setting or resetting the castings shall be done with bricks plus mortar and/or by raising or lowering adjustable castings according to the standards of the utility owner having jurisdiction over the installation. Work shall be done in a workmanlike manner. Any damage resulting from the Contractor's operations to the existing installation which is to remain shall be satisfactorily corrected at the Contractor's own expense, as directed by the facility operator. Castings, which are deemed unacceptable for resetting, shall become the property of the Contractor and shall be removed and disposed of by him away from the site.

No traffic shall be allowed on adjusted utility hardware until permitted by the facility operator.

D. Method of Measurement

The quantity to be measured for payment shall be the number of utility hardware units (EA) in each size group actually adjusted as specified under each item. The size of each utility hardware unit, measured in width, shall be defined as either, the diameter of the exposed edge of the casting, or the exposed edge of the longest side of rectangular frames as indicated in sketch JB 636.

JB 636 EA - Adjustment of Utility Hardware (Under 7" Width)

JB 636 EB - Adjustment of Utility Hardware (7" to under 14" Width)

JB 636 EC - Adjustment of Utility Hardware (14" to under 30" Width)

JB 636 ED - Adjustment of Utility Hardware (30" to under 34" Width)

JB 636 EE – Adjustment of Utility Hardware (34” to under 41” Width)

JB 636 EG - Adjustment of Utility Hardware (41" to under 75" Width)

JB 636 EH - Adjustment of Utility Hardware (75" to under 125" Width)

JB 636 EI - Adjustment of Utility Hardware (125" to under 170" Width)

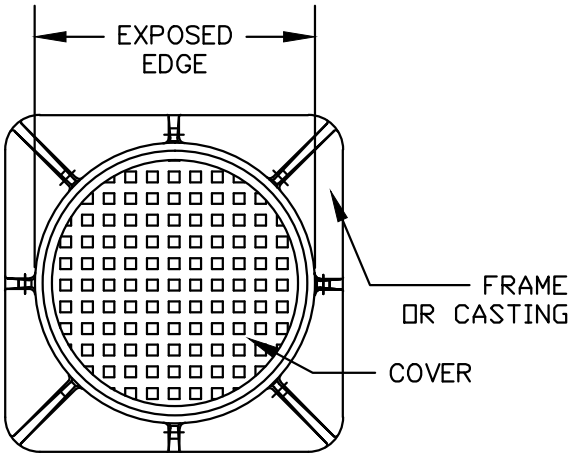
E. Price to Cover

The price for re-grading utility hardware shall be the unit price per each (EA.) and shall cover the cost of furnishing all labor, materials, plant, equipment, and incidentals required to remove existing frames and covers; build up the existing installations with brick and mortar, or lower the existing installations by removing bricks and mortar; replace damaged frames and/or covers with frames and/or covers furnished by others; break out pavement and/or pavement base; protect existing opening and installation; set the frames and covers to new elevations; grade and compact fill; install base concrete; tack coat frame; install, remove, and dispose temporary pavement; install and compact asphalt binder and wearing course or other permanent pavement; repair minor structural damage to existing installations prior to resetting frames; unloading of furnished castings at the Contractor's yard and transporting castings from the Contractor's yard to the job site as required; and complete the work in accordance with the plans, the specifications, and the directions of the facility operator.

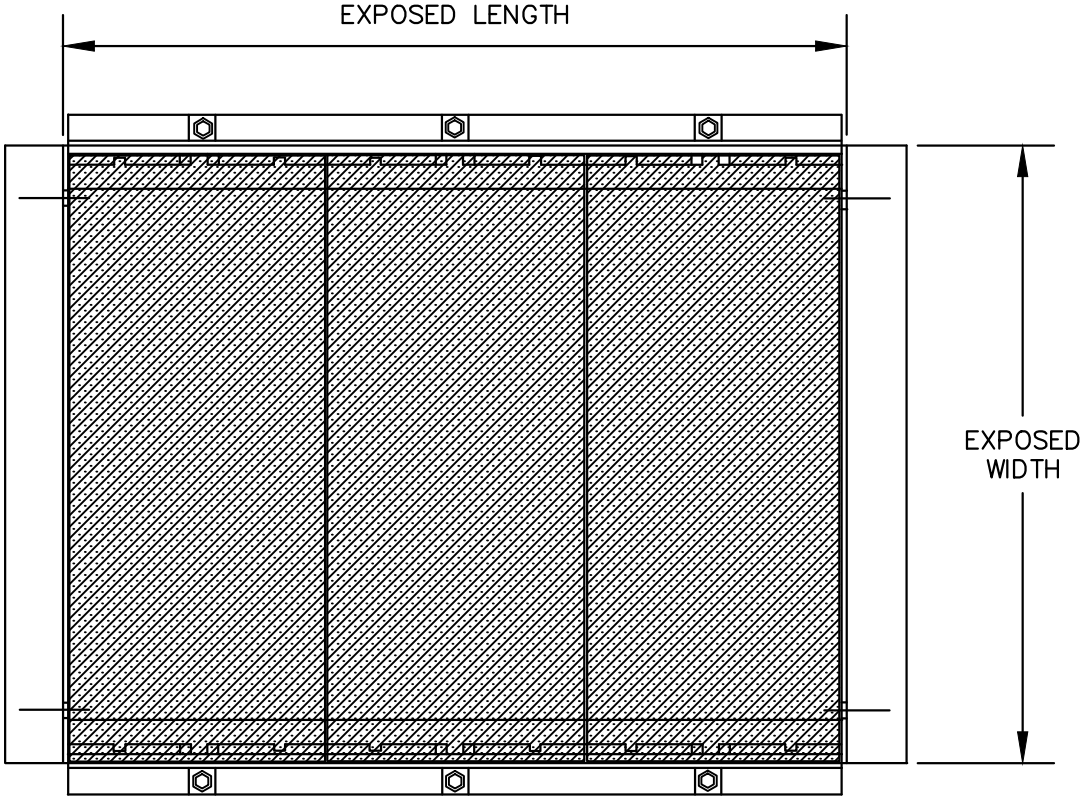
F. References

1. NYS DOT Standard Specs for Class F Concrete
2. Con Edison Specifications, latest revisions. EO-10321-B, latest revision – Chimneys, collars & grading blocks for manholes & vaults construction and installation
3. Sketch JB 636E

ROUND COVERS



RECTANGULAR COVERS/FRAMES



PLAN VIEW

N.T.S.

ADJUSTMENT OF
UTILITY HARDWARE

LAST REVISION	SKETCH NO.
6/30/2015	JB 636E

JB 636 M - MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE DURING PAVEMENT MILLING AND RESURFACING OPERATIONS

A. Description

Under this section, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals required to maintain, protect, and accommodate the integrity of utility hardware during pavement milling and resurfacing operations. Hardware includes castings, frames, and covers on utility structures, valve box cover castings, concrete collars around steam castings, and all other hardware protecting utility facilities.

B. Materials – N/A

C. Method of Construction

Removal of existing pavement around utility hardware shall be performed by the Contractor with extreme caution by utilizing appropriate methods of operation, by employing specialized construction equipment, and by special operations and sequencing.

The Contractor shall not mill existing pavement within 12” of the perimeter of utility hardware. Removal of pavement within 12” of the perimeter of utility hardware shall be by cutting with pavement breakers or other methods as proposed by the Contractor. All methods shall be presented to the facility operator and the Resident Engineer by the Contractor prior to the start of construction and shall be approved by the facility operator in consultation with the Resident Engineer.

During removal of existing pavement and for the duration of project, the Contractor shall protect utility hardware from damage by the Contractor’s operations and traffic. Contractor shall also provide all necessary protection to pedestrians to prevent injury to pedestrians when crossing utility hardware during the project. Utility street hardware damaged by the Contractor or others during the project shall be replaced by the Contractor at Contractor’s expense.

The Contractor shall not place any paving materials over utility hardware during the project.

D. Method of Measurement

The quantity to be measured for payment shall be the number of utility hardware units (ea) in each size group actually adjusted as specified under each item. The size of each hardware unit, measured in width, shall be defined as the diameter of circular covers, the major axis of elliptical covers, or the larger length or width of rectangular covers.

1. Item 636 MA – Modification of Work Methods to Accommodate Utility Hardware (Under 7" Width)
2. Item 636 MB – Modification of Work Methods to Accommodate Utility Hardware (7" to under 14" Width)

3. Item 636 MC – Modification of Work Methods to Accommodate Utility Hardware (14" to under 30" Width)
4. Item 636 MD – Modification of Work Methods to Accommodate Utility Hardware (30" to under 34" Width)
5. Item 636 ME – Modification of Work Methods to Accommodate Utility Hardware (34” to under 41” Width)
6. Item 636 MG – Modification of Work Methods to Accommodate Utility Hardware (41" to under 75" Width)
7. Item 636 MH – Modification of Work Methods to Accommodate Utility Hardware (75" to under 125" Width)
8. Item 636 MI – Modification of Work Methods to Accommodate Utility Hardware (125" to under 170" Width)
9. Item 636 SMB – Modification of Work Methods to Accommodate Utility Steam Hardware (Under and including 8" Width)
10. Item 636 SMC – Modification of Work Methods to Accommodate Utility Steam Hardware (Above 8" to 34" Width)

A. Price to Cover

The price to modify work methods to accommodate Utility Hardware during pavement milling and resurfacing operations shall include the cost of all incremental labor, materials, time, equipment, insurance and incidentals required for removal and disposal of existing pavement, installation and compaction of base and wearing course materials, installation and compaction and removal of temporary asphalt concrete mixture, tack coating; in accordance with the plans, the specifications and the directions of the facility operator in consultation with the Resident Engineer. The price to cover shall further include the cost of maintaining, protecting, and accommodating the integrity of utility street hardware during the project and during the performance of milling and resurfacing and the incremental additional work and effort made necessary to protect pedestrians from injury when crossing utility hardware during the project. The price to cover shall further include additional areas of modification of work methods beyond 12” of the perimeter of the utility street hardware due to the milling equipment and the location of other utility hardware, city street hardware, utility poles, street lights, traffic signals, curbs, sidewalks, medians, guide rails, pavement stops, cobblestones, and pavers. The price to cover for Items 636 SMB and 636 SMC shall also include modification of work methods due to existing concrete collars surrounding these castings.

Payment for all work herein specified shall be made on a one-time basis only; no payment for work herein specified shall be made for the same area more than one time. Adjustment to utility hardware shall be paid for under the appropriate JB 636E item.

F. References

1. JB 636E

JB 638NT – FIELD CONSTRUCTED TELECOMMUNICATIONS MANHOLE STRUCTURES

Under this item the Contractor shall perform the complete installation of field constructed utility structures approved by the facility operator in consultation with the Resident Engineer. The utility structure shall be field constructed and installed in compliance with standard utility specifications and/or methods approved by the facility operator in consultation with the Resident Engineer.

A. Description

Installation of field constructed utility structure shall comply with utility standard specifications and/or as directed by the facility operator in consultation with the Resident Engineer and shall include:

- Service Boxes (various sizes)
- Manholes (various sizes)

Where approved by the facility operator, telephone structures may as an alternate be constructed of precast reinforced concrete.

B. Materials

The facility operator will furnish cable racks, pulling-in irons, sump castings, hardware, manhole steps/ladder supports and cast iron frames and covers. All other materials required for a complete manhole installation including concrete, reinforcing steel and structural steel shall be supplied by the Contractor and shall comply with the standards of the facility operator.

The Contractor shall notify the facility operator a minimum of 30 days prior to manhole construction for scheduling materials to be furnished by the utility company. The Contractor shall pick up said materials at the facility operator's yard.

All concrete shall have a minimum compressive strength of 4,000 psi at 28 days.

Reinforcing steel shall be deformed bars conforming to ASTM, Grade 60.

Structural steel shall conform to the requirements of ASTM A-36. Bolts shall conform with the requirements of ASTM A-325.

The Contractor shall supply all necessary materials (mortar, concrete, brick, etc.) for sealing duct entrance windows in manholes and for constructing chimneys and bricking up castings to grade.

C. Method of Construction

All work shall comply with the utility specifications, plans, and standards of the facility operator.

Refer to specification JB 406 for excavation and sheeting requirements associated with telephone manhole construction. Where replacement manholes are indicated on the plans, the demolition

and removal of the existing manhole structure and the protection of existing cables and splices will be paid separately under JB 638R.

The Contractor shall perform the necessary field construction of the floor, walls, and roof of the utility structure as shown on the Plans and as directed by the facility operator in consultation with the Resident Engineer. No traffic shall be allowed on the structure until permitted by the facility operator in consultation with the Resident Engineer.

Field conditions may require the contractor to modify the design of the manhole structure, as directed by the facility operator in consultation with the Resident Engineer.

Refer to specification JB 636E for guidelines relating to the installation of new frames and covers.

All structural steel roof beams shall be ground free of burrs and painted with one shop coat and two field coats of finish paint. The Contractor shall make provisions for and incorporate into the manhole all required materials as shown on the Plans, standard utility details or as directed by the facility operator in consultation with the Resident Engineer.

The Contractor shall provide duct entry windows in the new manhole as shown on the Plans and as directed by the facility operator. All windows shall be properly sealed around new ducts per utility company requirements.

All cable racks and wall brackets shall be supported on walls with ½" dia. X 2-½" long galvanized steel machine bolts using ½" concrete inserts or expansion bolts. Vertical spacing of inserts shall not exceed 18" o.c. (typ).

The Contractor shall confirm placement of concrete inserts for cable rack supports, pulling-in irons, and other embedments shown on the Plans with the facility operator, in consultation with the Resident Engineer, prior to manhole construction.

All work shall be done in a workmanlike manner and any damage resulting from the Contractor's operations shall be satisfactorily corrected as directed by the facility operator in consultation with the Resident Engineer and at the Contractor's expense. The contractor shall perform the installation of the utility structure while maintaining, supporting, and protecting and accommodating the integrity of all utility facilities (without disruption of service) located within the areas of the excavation and the field constructed structure.

This item shall also apply when partially or totally rebuilding or modifying an existing utility structure.

The Contractor is advised that in lieu of poured-in-place structures the substitution of Precast Reinforced Concrete Structures that comply with Utility Specifications, will be permitted only when approved by the facility operator in consultation with the Resident Engineer, along with the following provisions:

1. Precast telephone manholes shall be constructed to the interior manhole dimensions and details shown on the Plans.

2. The Contractor shall submit shop drawings and design calculations for each precast manhole structure for review and approval by the facility operator and the Resident Engineer prior to fabrication. Shop drawings shall show the overall structure dimensions, roof openings, window sizes and locations, sump locations, reinforcing steel and details, construction joint types and locations including sealant material proposed. The inside face of all windows (4 sides) shall be beveled and provisions made for all inserts and hardware for a complete manhole installation, including cable pulling iron embedments and cable rack insert embedments in accordance with the standards and requirements of the facility operator.
3. Precast manhole design criteria shall be as follows:
    - Concrete Minimum Compressive Strength: 4,000 psi or greater at 28 days.
    - Steel Reinforcement: ASTM A-615, Grade 60.
    - Design Loading: AASHTO HS20-44
    - Shop drawings and calculations shall state design methodology used and all design assumptions including soil pressures and ground water levels used in the design.

4. A 9-inch thick compacted stone ballast leveling pad shall be provided as a foundation for all precast manholes.

D. Method of Measurement

The quantity to be measured for payment shall be the number of cubic yards (CY) of concrete, cast on site or pre-cast, as specified, concrete, brick, and mortar in place to the nearest hundredth of a cubic yard. No deductions will be made for the spaces occupied by steel reinforcement.

E. Price to Cover

The unit price under this item shall be a unit price per cubic yard (CY) of concrete, cast on site or pre-cast, as specified, concrete, brick, and mortar placed in the field constructed utility structure. The unit price shall cover the cost of all labor, materials, plant, equipment, insurance and incidentals required to field construct partially or totally, rebuild or modify, a utility structure. The unit price shall also include all formwork installation and removal, installation of concrete, bricks, mortar, steel reinforcement, structural steel beams, furnish and install pre-cast concrete, chimney, and installation of interior and exterior hardware, including frames and covers. The Contractor shall also install pipes, conduits, sumps, drains, sleeves, related steel or cast iron materials or equipment through the structures as shown on the drawings. Upon removal of forms, the Contractor shall remove debris and face off the entire interior of the structure. The unit price includes necessary realignment of existing ducts into the new structure up to five feet from the outside face of the new structure; any additional duct realignment required shall be paid under a separate JB item. The unit price shall further include the cost of maintaining, supporting, protecting and accommodating the integrity of all utility facilities (without disruption of service) during the work within the areas of excavation and the field constructed structure, and the furnishing of samples, as required. All work shall comply with the plans, specifications, standards, and directions of the facility operator in consultation with the Resident Engineer.

All pavement breaking, pavement removal and disposal, excavation, haul away, and disposal, furnish and install backfill, temporary pavement, sheeting, bracing, and all necessary incidentals shall be paid under item JB 406, only if required. All required break out and disposal of all types of conduits/duct banks in new structure area, including maintenance and support of cable shall be included in JB 638R. Where precast reinforced concrete manholes are used in lieu of poured in place manholes, the cost for furnishing, delivery and installation of the precast reinforced structures, additional excavation associated with the widening and deepening of trench due to increased width of precast structures and due to the placement of a stone ballast leveling pad; stone ballast; connections; and all work incidental thereto all in accordance with the Plans, Specification and Standards, shall be deemed included under this item. No additional or separate payments will be made for any work associated with the installation of precast reinforced structures.

The cost of providing an anti-freeze additive in concrete, when required, shall be paid for under Item 9.04 HW.

F. References

1. JB 406
2. JB 636E
3. JB 638R
4. Standard Utility Specifications and Drawings

JB 638RT – BREAK OUT AND REMOVE TELEPHONE/COMMUNICATIONS UTILITY STRUCTURE CONTAINING ACTIVE FACILITIES

A. Description

Under this section the Contractor shall provide all labor, materials, equipment, insurance and incidentals necessary to partially or totally break out and remove existing utility structures using methods approved by the facility operator. Breaking out and removing existing utility structures shall be performed while maintaining and protecting all subsurface facilities, at locations approved by the Facility Operator. The Contractor will encounter various underground facilities, located both inside and outside the utility structure, while partially or totally breaking out and removing existing utility structures and will be required to excavate and perform work over, under, adjacent to, around, in between and in close proximity of various congested configurations of multiple facilities, conduits, pipes and cables.

All work required to partially or totally break out and remove existing utility structures shall comply with standard utility specifications and/or as directed by the facility operator and shall include but not be limited to:

- Service Boxes (various sizes)
- Manholes (various sizes)
- Vaults (various sizes)
- Valve Boxes (various sizes)
- Concrete encased conduits containing cables

B. Materials

All materials used shall be supplied by the Contractor and comply with the standards of the facility operator.

C. Method of Construction

The Contractor shall perform the necessary breaking out and removal of the existing utility structure while maintaining and protecting all subsurface facilities. The Contractor will encounter various underground facilities located both inside and outside the utility structure, while partially or totally breaking out and removing existing utility structures and will be required to excavate and perform work over, under, adjacent to, around, in between and in close proximity of various congested configurations of multiple facilities, conduits, pipes and cables, as directed by the facility operator. All work shall be done in a workmanlike manner and any damage resulting from the Contractor's operations shall be satisfactorily corrected as directed by the facility operator and at the Contractor's expense.

This item shall also apply when partially or totally breaking out and removing an existing utility structure.

The rebuilding of the utility structure is covered under JB 638NT.

D. Method of Measurement

The quantity to be measured for payment shall be the number of cubic yards (CY) of concrete, reinforced concrete, brick, and mortar of the existing utility structure broken out, removed and disposed to the nearest hundredth of a cubic yard. No deductions will be made for the spaces occupied by steel reinforcement.

E. Price to Cover

The unit price bid under this item shall be a unit price per cubic yard (CY) of concrete, reinforced concrete, brick, and mortar of the existing utility structure broken out, removed and disposed. The unit price shall also cover the cost of all labor, materials, plant, equipment, insurance, and incidentals required to partially or totally break out, remove and dispose of existing utility structure. The unit price shall also include demolition of the existing utility structure, haul away and disposal of demolished materials, formwork, concrete, bricks, mortar, steel reinforcement, structural steel beams, interior hardware, exterior hardware, including frames and covers. The unit price shall further include the cost of maintaining, supporting, protecting and accommodating the integrity of all utility facilities (without disruption of service) during the work within the areas of excavation and the existing structure. All work shall comply with the plans, specifications and standards, provided by and at the directions of the facility operator.

The unit price shall include providing access to the facility operator tenants to verify and test cables before, during and after breaking out and removal of the utility and after conduit removal by the Contractor. The unit price shall include, but not limited to, opening and closing of fences; removal and replacement of temporary timber curb and opening and closing of traffic plates. Access to adjacent manholes impacted by the run is included in this item. JB 450 shall not be used in conjunction with JB 638RT as JB 638RT covers access to the work site at all times.

All pavement breaking, pavement removal and disposal, excavation, haul away, and disposal, furnish and install backfill, temporary pavement, sheeting, bracing, and all necessary incidentals shall be paid under item JB 406, only if required.

F. References

1. JB 406
2. Standard Utility Specifications and Drawings

JB 798 - MODIFICATION OF NON CONCRETE YOKE TROLLEY STRUCTURES REMOVAL WHEN CROSSING UTILITY FACILITES

A. Description

This JB item shall only be applied to trolley structure systems that do not contain concrete yoke foundations. This JB item shall only be used for trolley systems that have rails and wood ties only.

Under this section, the Contractor shall provide all incremental labor, equipment, insurance and incidentals required to maintain and protect and accommodate the integrity of utility facilities that include but are not limited to:

1. Conduits;
2. Conductors;
3. Concrete encased Conduit banks;
4. Steel Pipes; Steam Facilities;
5. Oil-o-static Facilities;
6. Non-cost Sharing Gas Facilities;
7. Steam Facilities;

of various sizes and configurations crossing trolley structures at various angles located within a zone of protection, as indicated on Sketch JB 798, during the removal of trolley structures and subsequent backfilling operations. Utility facilities that run parallel to trolley structures are not included within this item and will be paid for under the appropriate JB item. The work shall be performed in accordance with the contract plans, the specifications, and as encountered during construction and directed by the facility operator.

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain, protect, and accommodate the integrity of all utility facilities of various sizes and configurations crossing trolley structures within a zone of protection as indicated in Sketch JB 798, during removal of trolley structures and subsequent backfilling and compaction operations under other contract item(s). The facility operator shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility and ascertain the numerical relationships and/or dimensions of these utilities with respect to the proposed excavation. Contractor shall perform test pits at locations determined by the facility operator to expose utility as specified in JB 400. Upon exposing the affected utilities sufficiently, and at the sole discretion of the facility operator to determine relationships and/or dimensions, the Contractor shall be permitted to proceed with care to remove existing trolley structure within the zone of protection whose limit shall be defined as a distance of 24 inches from the outside face of each utility crossing.

D. Method of Measurement

The quantity to be measured for payment shall be the number of linear feet of modified trolley structure removal within the zone of protection as indicated on JB Sketch 798, measured along the centerline of trench. The trench is defined as one track set containing two rails. The zone of protection shall be defined, for the purpose of this agreement, as the boundary/area designated on the plans or a boundary/area 24 inches to either side of each of the designated facilities, based upon available records and/or information obtained from prior or new test pits, or any combination thereof. Where overlapping of the zones occurs due to multiple facilities, the boundary/area shall be modified to one zone measured from the outside limits. The contract item specified under this section shall not be measured for payment in conjunction with other types of utility items. Modifications to work methods required in areas between zones of protection for multiple utilities or JB facilities shall not be measured for payment and are included in the price bid for this item.

E. Price to Cover

The unit price per linear foot shall include the incremental cost for all labor, equipment, insurance and incidentals required to maintain and protect and accommodate the integrity of utility facilities during the removal of trolley structures (including rails, timber ties, trolley conduits and main conduit), and backfilling and compacting within a zoned area designated for protection of utilities by the facility operator.

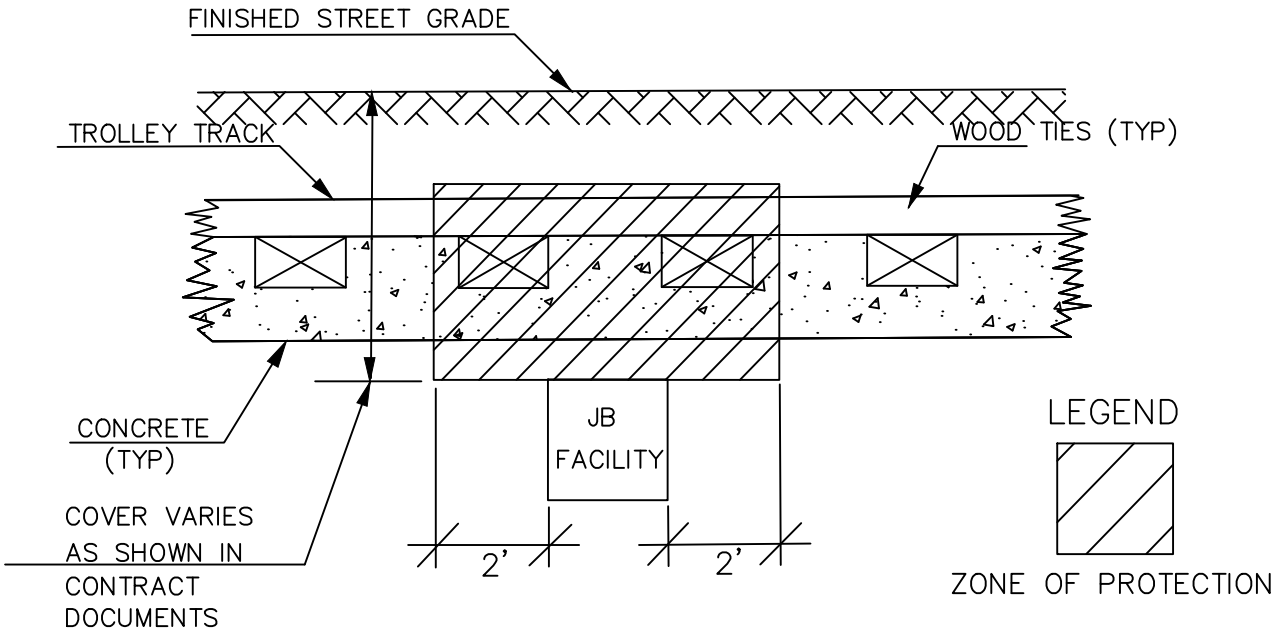
The price shall include any additional cutting, removing and disposing of roadway materials; hand or machine excavation; trucking and disposing of excavated materials, installation and removal of sheeting; and furnishing, installing and compacting backfill that may be required to support, protect, maintain and accommodate the integrity of utility facilities. The price shall also include means to ascertain the numerical relationship between utility and the trolley structure and the incremental cost for providing all vehicular and pedestrian traffic maintenance necessary to perform the work.

The Contractor shall be responsible for any and all damages resulting from and/or due to trolley demolition operations that are not performed in accordance with the specifications.

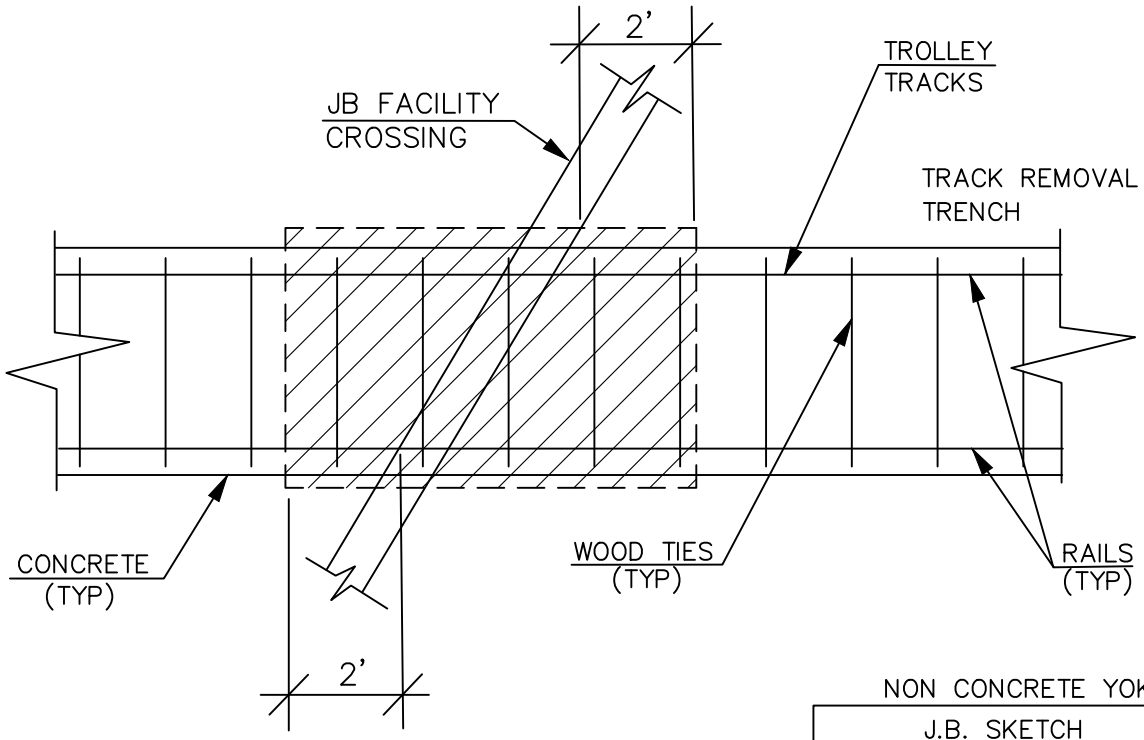
When this work is performed within a mass excavation area, a credit will be taken for the removed trolley structure.

F. References

1. NYS Industrial Code Rule 753
2. Sketch JB 798



SECTION OF JB FACILITIES CROSSING TROLLEY TRACKS



PLAN OF JB FACILITIES CROSSING TROLLEY TRACKS

NON CONCRETE YOKE

J.B. SKETCH

ACCOMODATION FACILITIES CROSSING TROLLEY RAILROAD STRUCTURES

REVISIONS	CONTRACT NO.	SKETCH NO.
11/28/2018		JB 798

JB 799 - MODIFICATION OF NON CONCRETE TROLLEY STRUCTURES REMOVAL PARALLEL TO UTILITY FACILITIES

A. Description

This JB item shall only be applied to trolley structure systems that do not contain concrete yoke foundations. This JB item shall only be used for trolley systems that have rails and wood ties only.

Under this section, the Contractor shall provide all incremental labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities that include but are not limited to:

1. Conduits;
2. Conductors;
3. Concrete encased Conduit banks;
4. Steel Pipes; Steam Facilities;
5. Oil-o-static Facilities; and
6. Non-cost Sharing Gas Facilities;
7. Steam Facilities.

of various sizes and configurations paralleling or encroaching trolley structures located within a zone of protection, as indicated on the Plans or as directed by the field representative, during all trolley structure removal operations and subsequent backfilling operations. Utility facilities which cross over, under and between the trolley structures are not included within this item and will be paid for under the appropriate JB item. The work shall be performed in accordance with the contract plans, the specifications, and as encountered during construction and directed by the facility operator(s).

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain, protect, support and accommodate the integrity of all utility facilities of various sizes and configurations paralleling or encroaching trolley structures within a zone of protection as indicated on the Plans or as directed by the field representative, during removal of trolley structures and subsequent backfilling and compaction operations under other contract item(s). The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility and ascertain the numerical relationships and/or dimensions of these utilities with respect to the proposed excavation. Contractor shall perform test pits at locations determined by the facility operator to expose utility as specified in JB 400. Upon exposing the affected utilities sufficiently, and at the sole discretion of the facility operator(s) to determine relationships and/or dimensions, the Contractor shall be permitted to proceed with care to remove existing trolley structure within the zone of protection whose limit shall be defined as a distance of 24 inches from the outside face of each utility to the edge of the trolley structure.

D. Method of Measurement

The quantity to be measured for payment shall be the number of linear feet of modified trolley structure removal within the zone of protection as indicated on the plans, measured along the centerline of trench. The trench is defined as one track set containing two rails. The contract item specified under this section shall not be measured for payment in conjunction with other types of utility items. Modifications to work methods required in areas between zones of protection for multiple utilities or JB facilities shall not be measured for payment and are included in the price bid for this item.

E. Price to Cover

The unit price per linear foot shall include the incremental cost for all labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities paralleling or encroaching trolley structures during the removal of trolley structures (including rails, timber ties, trolley conduits, and main conduits), and backfilling and compacting within a zoned area designated for protection of utilities by the facility operator(s).

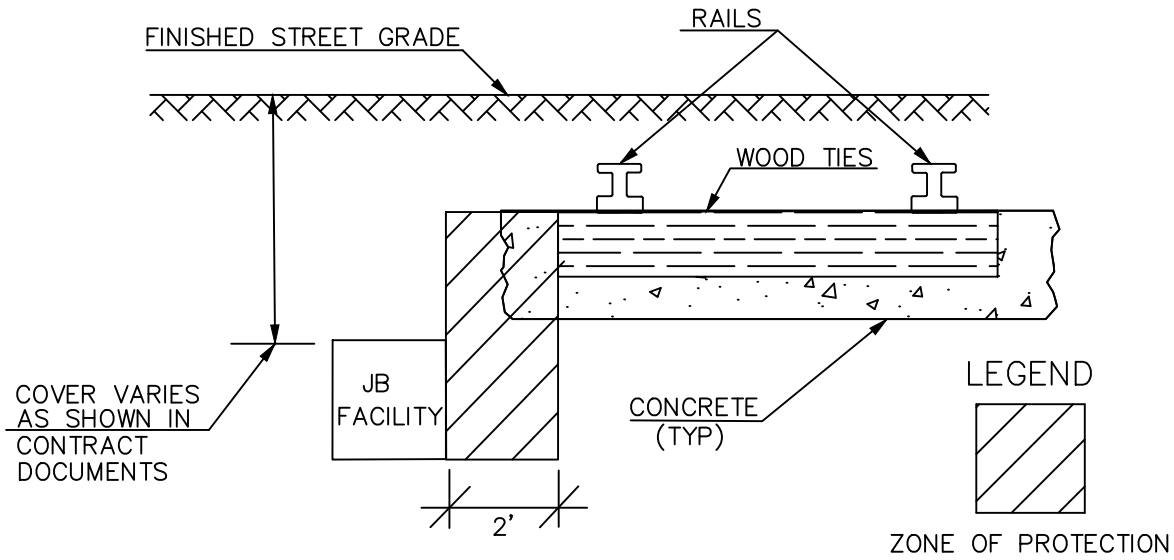
The unit price shall also include any additional cutting, removing and disposing of roadway materials; hand or machine excavation; trucking and disposing of excavated materials, installation and removal of sheeting; and furnishing, installing and compacting backfill that may be required to support, protect, maintain and accommodate the integrity of utility facilities. The price shall also include means to ascertain the numerical relationship between utility and the trolley structure, and the incremental cost for providing all vehicular and pedestrian traffic maintenance necessary to perform the work.

The Contractor shall be responsible for any and all damages resulting from and/or due to trolley demolition operations that are not performed in accordance with the specifications.

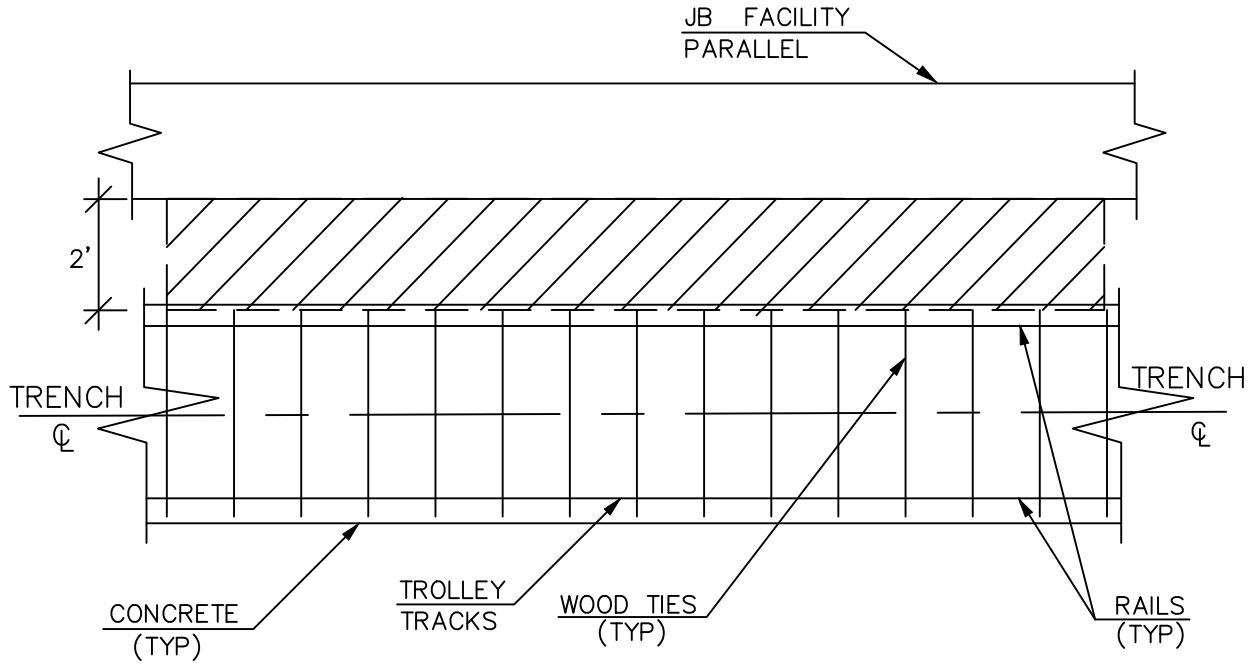
When this work is performed within a mass excavation area, a credit will be taken for the removed trolley structure.

F. References

1. NYS Industrial Code Rule 753
2. Sketch JB 799



SECTION OF JB FACILITIES PARALLELING TROLLEY TRACKS



PLAN OF JB FACILITIES PARALLELING TROLLEY TRACKS

NON CONCRETE YOKE

J.B. SKETCH	
ACCOMODATION FACILITIES PARALLEL TROLLEY RAILROAD STRUCTURES	
REVISIONS	
11/28/2018	CONTRACT NO. / SKETCH NO. JB 799

JB 800 - MODIFICATION OF CONCRETE YOKE TROLLEY STRUCTURES REMOVAL WHEN CROSSING UTILITY FACILITES

A. Description

This JB item shall only be applied to trolley structure systems that contain concrete yoke foundations. This JB item shall not be used for trolley systems that have rails and wood ties only.

Under this section, the Contractor shall provide all incremental labor, equipment, insurance and incidentals required to maintain and protect and accommodate the integrity of utility facilities that include but are not limited to:

1. Conduits
2. Conductors
3. Concrete encased conduit banks
4. Steel pipes
5. Oil-o-static facilities
6. Non-cost Sharing Gas Facilities and
7. Steam Facilities

of various sizes and configurations crossing trolley structures at various angles located within a zone of protection, as indicated on Sketch JB 800, during the removal of trolley structures and subsequent backfilling operations. Utility facilities that run parallel to trolley structures are not included within this item and will be paid for under the appropriate JB item. The work shall be performed in accordance with the contract plans, the specifications, and as encountered during construction and directed by the facility operator.

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain, protect, and accommodate the integrity of all utility facilities of various sizes and configurations crossing trolley structures within a zone of protection as indicated in Sketch JB 800, during removal of trolley structures and subsequent backfilling and compaction operations under other contract item(s). The facility operator shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility and ascertain the numerical relationships and/or dimensions of these utilities with respect to the proposed excavation. Contractor shall perform test pits to expose the utilities as specified under JB 400. Upon exposing the affected utilities sufficiently, and at the sole discretion of the facility operator to determine relationships and/or dimensions, the Contractor shall be permitted to proceed with hand held power tools to remove existing trolley structure within the zone of protection whose limit shall be defined as a perimeter located 24 inches from the outside face of each utility crossing.

D. Method of Measurement

The quantity to be measured for payment shall be the number of linear feet of modified trolley structure removal within the zone of protection as indicated on JB Sketch 800, measured along the centerline of trench. The trench is defined as one track set containing two rails. The zone of protection shall be defined, for the purpose of this agreement, as the boundary/area designated on the plans or a boundary/area 3 feet to either side of each of the designated facilities, based upon available records and/or information obtained from prior or new test pits, or any combination thereof. Where overlapping of the zones occurs due to multiple facilities, the boundary/area shall be modified to one zone measured from the outside limits. The contract item specified under this section shall not be measured for payment in conjunction with other types of utility items. Modifications to work methods required in areas between zones of protection for multiple utilities or JB facilities shall not be measured for payment and are included in the price bid for this item.

E. Price to Cover

The unit price per linear foot shall include the incremental cost for all labor, equipment, insurance and incidentals required to maintain and protect and accommodate the integrity of utility facilities during the removal of trolley structures (including rails, timber ties, yokes, trolley conduits, main conduit, rail and yoke foundations), and backfilling and compacting within a zoned area designated for protection of utilities by the facility operator.

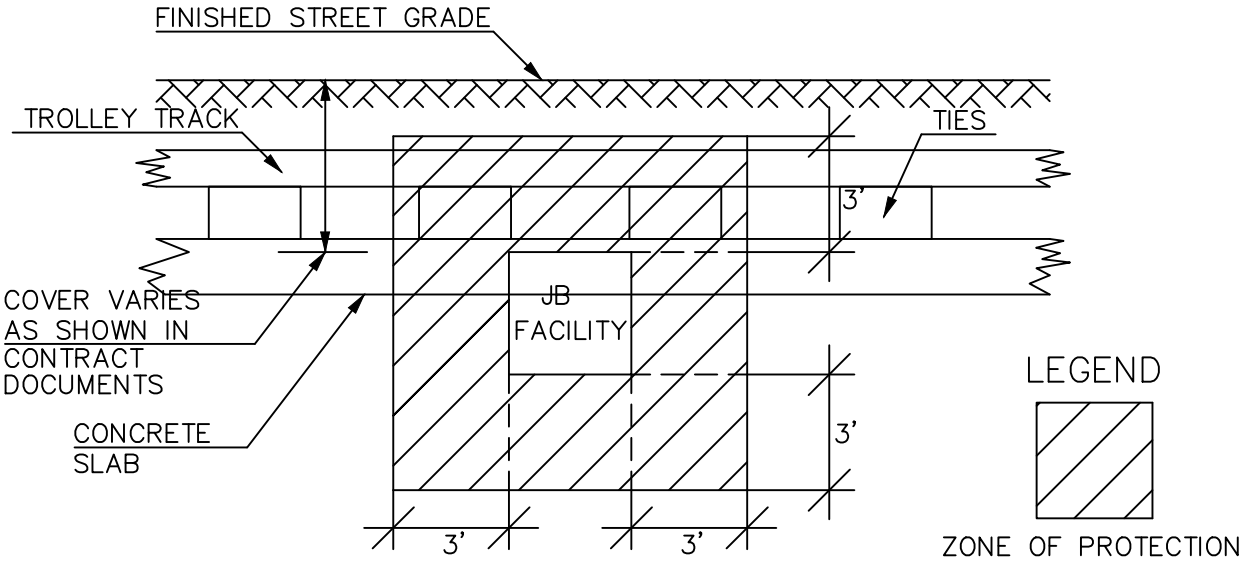
The unit price shall also include any additional cutting, removing and disposing of roadway materials; hand or machine excavation; trucking and disposing of excavated materials, installation and removal of sheeting; and furnishing, installing and compacting backfill that may be required to support, protect, maintain and accommodate the integrity of utility facilities. The unit price shall also include the incremental cost for providing all vehicular and pedestrian traffic maintenance necessary to perform the work.

The Contractor shall be responsible for any and all damages resulting from and/or due to trolley demolition operations that are not performed in accordance with the specifications.

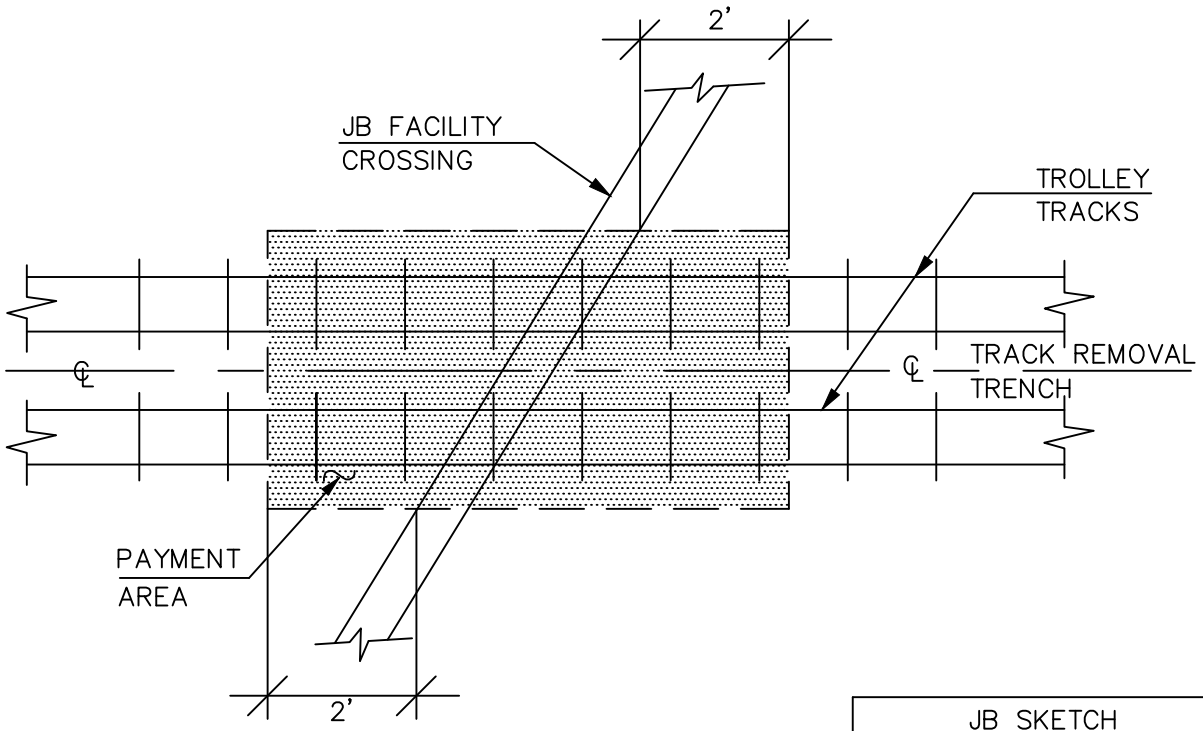
When this work is performed within a mass excavation area, a credit will be taken for the removed trolley structure.

F. References

1. NYS Industrial Code Rule 753
2. Sketch JB 800



SECTION OF JB FACILITIES CROSSING TROLLEY TRACKS



PLAN OF JB FACILITIES CROSSING TROLLEY TRACKS

JB SKETCH	
ACCOMODATION FACILITIES AT TROLLEY RAILROAD STRUCTURES	
CONTRACT NO.	SKETCH NO. JB 800

REVISIONS
11/28/2018

JB 801 - MODIFICATION OF CONCRETE YOKE TROLLEY STRUCTURES REMOVAL PARALLEL TO UTILITY FACILITIES

A. Description

This JB item shall only be applied to trolley structure systems that contain concrete yoke foundations. This JB item shall not be used for trolley systems that have rails and wood ties only.

Under this section, the Contractor shall provide all incremental labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities that include but are not limited to:

1. Conduits
2. Conductors
3. Concrete encased conduit banks
4. Steel pipes
5. Oil-o-static facilities
6. Non-cost sharing gas facilities and
7. Steam facilities

of various sizes and configurations paralleling or encroaching trolley structures located within a zone of protection, as indicated in sketch JB 801 or as directed by the field representative, during all trolley structure removal operations and subsequent backfilling operations. Utility facilities which cross over, under and between the trolley structures are not included within this item and will be paid for under the appropriate JB item. The work shall be performed in accordance with the contract plans, the specifications, and as encountered during construction and directed by the facility operator(s).

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain, protect, support and accommodate the integrity of all utility facilities of various sizes and configurations paralleling or encroaching trolley structures within a zone of protection as indicated in sketch 801 or as directed by the field representative, during removal of trolley structures and subsequent backfilling and compaction operations under other contract item(s). The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the utility and ascertain the numerical relationships and/or dimensions of these utilities with respect to the proposed excavation. Contractor shall perform test pits to expose the utilities as specified under JB 400. Upon exposing the affected utilities sufficiently, and at the sole discretion of the facility operator(s) to determine relationships and/or dimensions, the Contractor shall be permitted to proceed with hand held power tools to remove existing trolley structure within the zone of protection whose limit shall be defined as a perimeter located 24 inches from the outside face of each utility.

D. Method of Measurement

The quantity to be measured for payment shall be the number of linear feet of modified trolley structure removal within the zone of protection as indicated on the plans, measured along the centerline of trench. The trench is defined as one track set containing two rails. The contract item specified under this section shall not be measured for payment in conjunction with other types of utility items. Modifications to work methods required in areas between zones of protection for multiple utilities or JB facilities shall not be measured for payment and are included in the price bid for this item.

E. Price to Cover

The unit price per linear foot shall include the incremental cost for all labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities paralleling or encroaching trolley structures during the removal of trolley structures (including rails, timber ties, yokes, trolley conduits, main conduit, rail and yoke foundations), and backfilling and compacting within a zoned area designated for protection of utilities by the facility operator(s).

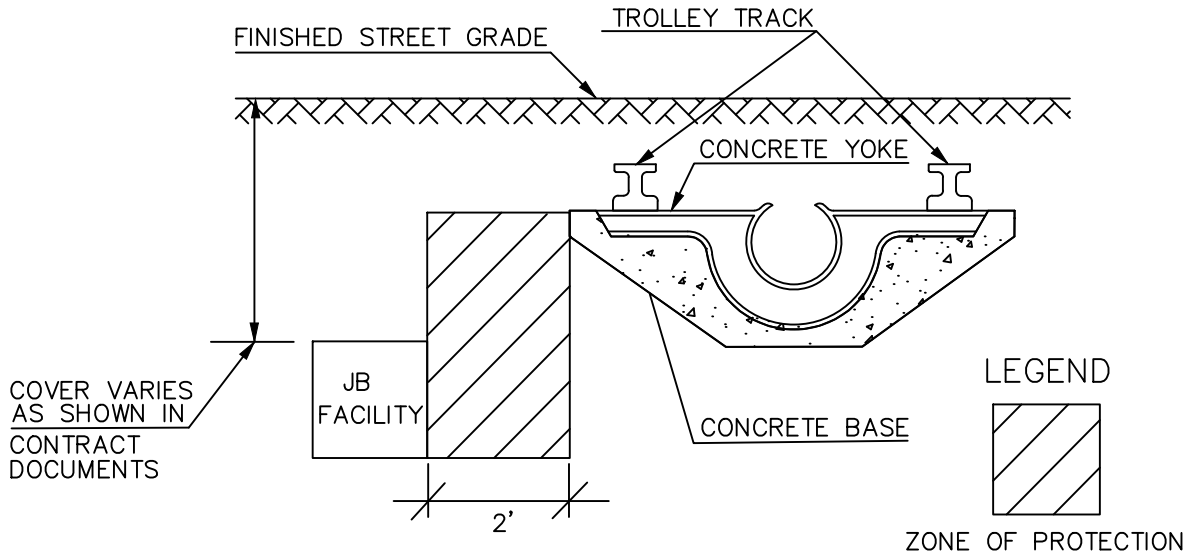
The unit price shall also include any additional cutting, removing and disposing of roadway materials; hand or machine excavation; trucking and disposing of excavated materials, installation and removal of sheeting; and furnishing, installing and compacting backfill that may be required to support, protect, maintain and accommodate the integrity of utility facilities. The unit price shall also include the incremental cost for providing all vehicular and pedestrian traffic maintenance necessary to perform the work.

The Contractor shall be responsible for any and all damages resulting from and/or due to trolley demolition operations that are not performed in accordance with the specifications.

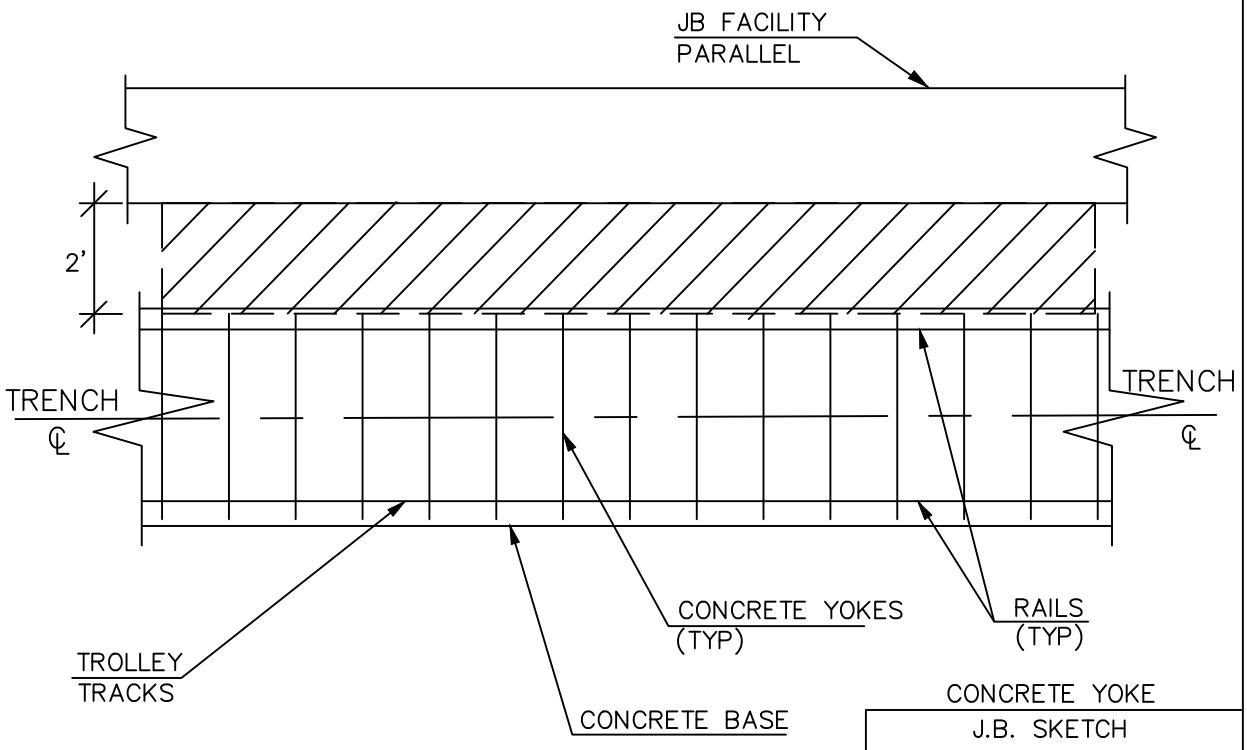
When this work is performed within a mass excavation area, a credit will be taken for the removed trolley structure.

F. References

1. NYS Industrial Code Rule 753
2. Sketch JB 801



SECTION OF JB FACILITIES PARALLELING TROLLEY TRACKS



PLAN OF JB FACILITIES PARALLELING TROLLEY TRACKS

CONCRETE YOKE	
J.B. SKETCH	
ACCOMODATION FACILITIES PARALLEL TROLLEY RAILROAD STRUCTURES	
REVISIONS	
11/28/2018	CONTRACT NO. / SKETCH NO. JB 801

JB 802 - SPECIAL MODIFICATION OF WORK FOR INSTALLATION OF NEW CURBS AND SIDEWALKS

A. Description

Under this Section, the Contractor shall be required to modify work methods of installing new curb and sidewalk in order to maintain, protect and accommodate the integrity of private Utility Facilities located within a zone of protection immediately beneath existing sidewalk and curb designated to be replaced under other Contract items. The zone of protection shall define an area of curb and sidewalk where: work is within the vicinity of private Utility Facilities as shown on the Special Care Excavation Plan or where utilities are encountered during construction that are within 18 inches of either face of curb and/or 12 inches of the base material of proposed curb and/or sidewalk**.**

B. Materials – N/A

C. Method of Operation/Construction

Once clearances have been verified by available records to the satisfaction of the facility operator, the Contractor shall exercise extreme caution to install new curb and sidewalks within zoned areas of protection. Exercising extreme caution shall mean utilizing appropriate methods of operation/construction, special operations and sequencing, and by employing hand labor, using hand held tools only, under the personal direction of the appropriate facility operator. The work shall incorporate, but not be limited by, the following restrictions:

1. Removal of Existing Curb and Sidewalk

Removal of existing curb and sidewalk material shall be performed by saw cutting the curb and sidewalk, for a depth of not less than 2", to assist the Contractor in breaking up the concrete curb and sidewalk for removal by hand. Curb and sidewalk removal shall be done with hand labor, using hand held tools only while working from adjacent undisturbed sidewalk and/or pavement. Furthermore, it shall be understood to mean that digging and/or excavating directly with power-mechanized earth moving equipment will not be permitted. Power mechanized earth moving equipment may only be used as a depository of material removed from the excavation by hand as described above. All equipment, methods, and maintenance and protection provisions shall require full authorization by the facility operator.

2. Preparation and Installation of New Curb and Temporary and New Sidewalk

Backfilling, filling, grading of sub base, and installation of new curb and both temporary and new sidewalk, as required under other Contract Items, shall be performed utilizing materials, equipment and methods of construction that will insure the integrity of the private utility facilities and at the same time meet all requirements for this work as specified in other sections of this contract.

3. Compaction

The Contractor shall compact all sub-grade and new sub-base materials by utilizing native and/or blended fill material, equipment and methods of construction that will ensure integrity of private Utility Facilities and at the same time meet all requirements for compaction as specified in Section 4.11 of the Standard Highway Specifications.

4. Powered Excavating Equipment Limitations

The Contractor shall not employ powered or mechanical excavating equipment within the zone of protection. Powered or mechanical excavating equipment may only be used as a depository for material removed from the excavation by hand as described above.

The Contractor shall not be permitted to store, stand and/or travel equipment/vehicles on specified unpaved zoned protection areas.

D. Method of Measurement

1. ITEM JB 802A

The quantity of "Special Care Excavation and Restoration for Sidewalk Work" to be measured for payment shall be the number of square feet (SF) of new sidewalk actually installed under other contract items within the zone of protection areas requested by the facility operator. For payment purposes, the horizontal limits for a zone of protection area shall be defined as the area designated on the plans or an area equal to the length of the designated facility multiplied by its width plus 18 inches on each side. Where overlapping of zones occur due to multiple facilities, the area will be modified to one zone measured from the outside limits. Where the 18-inch area falls beyond the curb line the outside boundary shall be the curb line.

2. ITEM JB 802B

The quantity of "Special Care Excavation and Restoration for Curb Work" to be measured for payment shall be equal to the number of linear feet (LF) of new curb actually installed under other contract items within the zone of protection areas requested by the facility operator.

E. Price to Cover

1. ITEM JB 802A

The contract price per square foot for "Special Care Excavation and Restoration for Sidewalk Work" shall be the incremental cost difference of all labor, materials, equipment, insurance and incidentals required for excavation and disposal of pavement, base and all other material to new sub-grade within and adjacent to zone of protection areas; saw cutting, grading, preparation of sub-grades, backfilling and compaction within zone of protection areas; all in accordance with the plans, the specifications and the directions of the facility operator. The price shall further include the cost of maintaining, protecting and accommodating the integrity of private Utility Facilities during the performance of sidewalk reconstruction (under other Contract Items) within zone of protection areas designated on the plans or as directed by the facility operator.

2. ITEM JB 802B

The contract price per linear foot for "Special Care Excavation and Restoration for Curb Work" shall be the incremental cost difference of all labor, materials, equipment, insurance and incidentals required to install new curbs and temporary restoration material under other Contract items, within and adjacent to zone of protection areas; all in accordance with the plans, the specifications and the directions of the facility operator. The price shall further include the cost of maintaining, protecting, and accommodating the integrity of private Utility Facilities during the performance of curb reconstruction (under other Contract Items) within zone of protection areas designated on the plans or as directed by the facility operator.

Payment for all work specified herein shall be made on a one-time basis only; no payment will be made for the same area of sidewalk or length of curb more than one time. In addition, work under these items shall not be paid in combination with other utility items.

F. References

1. Section 4.11 Standard Highway Specification

JB 803 - LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS

A. Description

Under this section, the Contractor shall provide all incremental labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities that include but are not limited to oil o static facilities, and any other facilities of various sizes and configurations paralleling or crossing proposed saw cut areas located within a zone of protection associated with roadway removal operations, as determined by the utility operator. Utility facilities which cross under and between the saw cut area are included within this item. The work shall be performed in accordance with the contract plans, the specifications, and as encountered during construction and determined by the facility operator(s).

B. Materials – N/A

C. Method of Construction

The Contractor shall maintain, protect, support and accommodate the integrity of all utility facilities of various sizes and configurations paralleling or crossing the saw cut area within a zone of protection as determined by the Facility Operator, during the roadway saw cut. The facility operator(s) shall identify the locations of all utilities within the contract area as required by New York State Industrial Code Rule 753. As provided by the Rule, the Contractor shall use pneumatic tools to line cut the pavement in lieu of saw cut by machine. It is the sole discretion of the facility operator(s) to determine relationships and/or dimensions, and advise the Contractor to proceed with pneumatic tools to line cut existing roadway structure.

D. Method of Measurement

The quantity to be measured for payment shall be the number of linear feet of line cut performed by pneumatic tools measured along the length of cut. The contract item specified under this section shall not be measured for payment in conjunction with other types of utility items. Modifications to work methods required in areas between zones of protection for multiple utilities or JB facilities shall not be measured for payment and are included in the price bid for this item.

JB 803.1 Line cut Asphalt Roadway (LF)
JB 803.2 Line cut any combination of Asphalt and Concrete Roadway (LF)
JB 803.3 Line cut any combination of Asphalt, Concrete, and Belgium Block (LF)

E. Price to Cover

The unit price per linear foot shall include the incremental cost for all labor, equipment, insurance and incidentals required to maintain, protect, support and accommodate the integrity of utility facilities paralleling or crossing the saw cut area associated with the removal of roadway designated for protection of utilities by the facility operator(s).

The unit price shall also include any additional cutting, removing and disposing of roadway materials; and any backfill that may be required to support, protect, maintain and accommodate the integrity of utility facilities. The price shall also include the incremental cost for providing all vehicular and pedestrian traffic maintenance necessary to perform the work.

The Contractor shall be responsible for any and all damages resulting from and/or due to saw cutting operations that are not performed in accordance with the specifications.

F. References

1. NYS Industrial Code Rule 753

conEdison

Guideline Document for Public Improvement

CONST- 029 Revision Number 4

Purpose: To update the Public Improvement Contractor Guideline document for safe entry into Sub-Surface Structures and moving energized underground cables.

Revision Date: 7-30-2020 Next Revision Due Date: 7-30-2022

Supersedes Date: 6-30-2018 Revision Cycle Period: Once every 2 years

TYPE	NAME	DATE
EH&S	Glenn D. Newell	7/30/2020
Technical	Joseph Bedell, Joseph Bedell Jr. John Stefandl & Marlon Kalloo	7/30/2020
Legal	Inna Rozenberg	7/30/2020

Summary of Changes:

1. Updated Reference Section to Include OSHA 1926 Subpart V
2. Removed Section on Moving Energized U.G. Cables Located Inside Sub-Surface Structures. (Previously Section 4.0 in Revision 3)
3. Updated/Revised Sections 1.4, 2.1, 2.2.2, 3.4, 3.6, 3.8, 3.9, 4.5.5, 4.7 & 4.7.1
4. Added New Section 4.5.4 – HDPE Conduit
5. Added New Chapter 5.0 – Breaking Out a Point of Entry (POE)

Training Requirements - N/A

DOJT/Course #, etc. Associated with this Operating Document:

None

Subject Matter Expert: Marlon Kalloo Approved Date: 7/30/2020 M. Kalloo

Approver Name: Theresa Kong Approved Date: 7/30/2020

Consolidated Edison Company of New York, Inc.

Guideline

For

Safe Entry into Sub-Surface Structures (Electrical Enclosed Space),

Moving Energized Underground Cables

Removal of Conduit from Cables, and

Breaking Point of Entry (POE's) Into Sub-Surface Structures

Performed by

Municipal Contractors

TABLE OF CONTENTS:

1.0 Definitions

1.1 Competent Person- As a general rule, a Competent Person is an individual who, by way of training and/or experience, is knowledgeable of OSHA and other applicable standards, is capable of identifying workplace hazards relating to the specific operation, and is designated by the employer with the authority to take all appropriate actions necessary to comply with all applicable standards and properly address hazards. Some OSHA standards add additional specific requirements that must be met by the Competent Person.

1.2 Attendant - An authorized individual who is stationed outside a sub-surface structure or an Electrical Enclosed Space to monitor the authorized entrants and to perform duties assigned including providing assistance to individual inside the sub-surface structure or Electrical Enclosed Space.

1.3 Electrical Enclosed Space – OSHA defines an Electrical Enclosed Space as a working space, such as a manhole, vault, tunnel, service box, or shaft, used for the operation and maintenance of electric power generation, transmission, and distribution lines and equipment. An Electrical Enclosed Space has a limited means of egress or entry, and is designed for periodic entry under normal operating conditions. Under normal conditions, an Electrical Enclosed Space does not contain a hazardous atmosphere, but may contain a hazardous atmosphere under abnormal conditions.

1.4 CET Specification – CET Specification defining private utility work within Municipal Construction Contracts.

1.5 JB Specification – Joint Bid specification defining private utility work within a NYC DDC Capital contract.

1.6 Public Improvement Representative - Con Edison employee, (Inspector, Construction Representative, Chief Construction Inspector, Project Specialist, or Manager) assigned to the Public Improvement section.

1.7 Municipal Contractor – Construction municipal contractor performing work for Municipal, State or other Public Agencies or Authorities.

1.8 Electrically Competent Qualified Municipal Contractor - is a Municipal Contractor employee designated and documented by the Municipal Contractor employer, in writing, as the electrically competent and qualified person who, by way of training and/or experience has the skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment, can identify non-insulated conductors from insulated conductors and/or cables and has the knowledge of the precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools that are required for working on or near exposed energized electrical equipment. The Electrically Competent Qualified Municipal Contractor employee is capable of identifying varying workplace electrical hazards relating to the specific operation and has the authority to take appropriate actions, as required. In order to meet the task specific qualifications of this guideline, the Electrically Competent Qualified Municipal Contractor employee must be familiar with this document and be able to demonstrate adherence.

2.0 References

2.1 OSHA Section 1910.269 – Electric Power Generation, Transmission & Distribution **& 1926 Subpart V –**Electric Power Transmission and Distribution

2.2 Training- The OSHA Office of Training and Education (OTE) develops, directs, oversees, manages and ensures implementation of OSHA's national training and education policies and programs in support of OSHA's strategic goals with the objective of reducing occupational hazards through direct intervention, promoting a safety and health culture through compliance assistance, cooperative programs and strong leadership and maximizing OSHA effectiveness and efficiency by strengthening capabilities and infrastructure.

All Municipal Contractor employees shall be trained in and familiar with the safety-related work practices, safety procedures, and other safety requirements in section 1910.269(a)(2) and 1926 Subpart V that pertains to the Municipal Contractor employees' respective job assignments. Municipal Contractor employees' shall also be trained in and familiar with any other safety practices, including emergency procedures, such as manhole rescue, that are not specifically addressed by this referenced section but that is related to their work and is necessary for their safety.

Con Edison manhole inspection and underground awareness training can be scheduled through the Con Edison TLC upon request of the municipal contractor. OSHA 10 certification cards and CPR / First Aid training are prerequisites.

2.2.1 Electrically Competent Qualified municipal contractors shall also be trained and competent in:

a- The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment

b- The skills and techniques necessary to determine exposed live parts from other parts, (determination of non-insulated conductors from insulated conductors / cables).

c- The knowledge of the precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools that are required for working on or near exposed energized parts of electrical equipment. Generally, the Municipal Contractor will not be required to work on or near exposed/non-insulated energized parts of electrical equipment or cables. In the event special conditions exist requiring working near exposed/non insulated energized parts of electrical equipment or cables, the Municipal Contractor shall cease working and immediately contact the authorized Con Edison Inspector so that a further assessment of the condition can be evaluated, and appropriate guidance provided.

d- The Electrically Competent Qualified Municipal Contractor employee shall determine, through regular supervision and through inspections conducted on at least an annual basis that each Municipal Contractor employee is complying with the safety-related work practices outlined in this guidance document.

2.2.2 A Municipal Contractor employee shall receive additional training (or retraining) by the Electrically Competent Municipal Contractor under any of the following conditions:

a- If the Electrically Competent Qualified Municipal Contractor employee indicates that the Municipal Contractor employee is not complying with safety-related work practices

b- If new technology, new types of equipment, or changes in procedures necessitate the use of safety-related work practices that are different from those which the Municipal Contractor employee would normally use

c- If the Municipal Contractor employee must employ other safety-related work practices that are not normally used or that require modification from those stated in this guidance document

Note: OSHA requires retraining before commencing with a task that has not been performed within one year.

The required training shall be of the classroom and/or on-the-job type. The training shall establish Municipal Contractor proficiency in the work practices required and shall introduce the procedures necessary for compliance. The Electrically Competent Qualified Municipal Contractor shall certify that each Municipal Contractor employee has received the training required and retains records of this training to be supplied upon request by Con Edison.

3.0 Safe Entry into Sub-Surface Structures, (Electrical Enclosed Space)

3.1 Purpose: To establish a guideline that shall be employed for safe entry into Con Edison sub-surface structures by Municipal Contractors.

3.2 Application: Municipal Contractor personnel

3.3 Guideline: This guideline provides the requirements for practices that shall be employed for safe entry into Con Edison sub-surface structures. Municipal Contractor personnel requiring entry into Con Edison sub-surface structures shall adhere to this guideline.

3.4 Inspection/Testing

Prior to entry into a Con Edison sub-surface structure, properly trained and qualified Con Edison electrical personnel must conduct an inspection. The assessment will determine if the condition of the electrical facilities contained therein is sufficient to allow need based unrestricted access. Con Edison electrical personnel shall validate that the Con Edison sub-surface structure inspected is approved for need based unrestricted access. The Con Edison Inspector shall communicate and document to an Electrically Competent Municipal Contractor personnel any safety precautions to be taken and that the subsurface structure is safe for entry. Any condition deemed to be un-safe through this formal inspection process would preclude granting access.

An inspection must take place daily prior to Municipal Contractor entry. Once the cover is placed on the electric subsurface structure another inspection must occur prior to Municipal Contractor entry. Inspections include but are not limited to:

1) Testing for stray voltage by a qualified Con Edison employee or qualified Municipal Contractor employee.

2) Completion of atmospheric testing.

3) Determination that it is safe to enter the space.

4) A visual inspection for any abnormalities previously defined.

5) Communication of inspection results and hazards to the Con Edison inspectors and the municipal contractor supervisor.

3.5 Job Briefing

The Electrically Competent Qualified Municipal Contractor in charge shall conduct a job briefing with the municipal contractor's employees involved before they start the job. The briefing shall cover: the hazards associated with the job; work procedures involved; special precautions; and personal protective equipment requirements. The Electrically Competent Qualified Municipal Contractor shall instruct that all cables are to be treated as energized. Additional briefings shall be held if significant changes, which might affect the safety of the municipal contractor's employees, occur during the course of the work. The Electrically Competent Qualified Municipal Contractor shall document completion of the job briefing. A copy of the documented job briefing should be available upon request by Con Edison.

3.6 Attendants

While work is performed in a Con Edison sub-surface structure, a Municipal Contractor Attendant shall be available in the immediate vicinity to render emergency assistance. Sub-surface structure Attendants shall comply with applicable OSHA requirements.

3.7 Hazardous Atmosphere

Municipal Contractor personnel shall perform a hazardous atmosphere test before entry into any Con Edison sub-surface structure and perform continuous air monitoring in compliance with applicable OSHA requirements. Any atmospheric reading deemed to be un-safe would prohibit access to the structure. The Municipal Contractor shall immediately notify the authorized Con Edison Inspector.

3.8 Personal Protective Equipment

Municipal Contractor personnel requiring entry into Con Edison sub-surface structures shall refer to and comply with applicable OSHA requirements regarding the use of Personal Protective Equipment when performing this work. In addition, Con Edison is requiring that Municipal Contractor personnel assigned to work inside Con Edison sub-surface structures shall at all times wear Flame Resistant (FR) Clothing with a rating of 8 cal/cm^2 or HR2, a retrieval harness and that a retrieval device be on location. In addition, an atmospheric tester

must be in use continuously anytime a structure is occupied. See section 3.9 for Matrix on Con Edison's Personal Protective Equipment Guideline.

3.9 Con Edison Personal Protective Equipment Guideline

	Task	Class 0 Gloves	FR Clothing	FR Hood	Blast Goggles	Face Shield	Safety Glasses
1	Pavement breaking	N	N				Y
2	Breaking out concrete encased duct	Y	Y				Y
3	Moving energized primary cables that are located outside a structure while in proximity to joints	Y	Y	Y	Y		
4	Moving primary cables outside a structure (no joints involved)	Y	Y				Y
5	Moving energized secondary cables	Y	Y				Y
6	Hand excavate to locate precast ducts	N	N				Y
7	Hand excavate to locate direct buried cables	Y	Y				Y
8	Removing cable from conduit	Y	Y				Y
9	Breaking structure for POE from outside/inside	Y	Y			Y	Y
10	Breaking sub-structure walls	Y	Y				Y
11	Pulling rope within structure with energized cable	Y	Y				Y
12	Pulling rope in enclosed spaces	Y	Y				Y
13	Building a bench or platform within a subsurface structure to support or protect cables.	Y	Y				Y
14	Breaking out unknown precast electric duct	Y	Y				Y
15	Using digging bar over electric facility	Y	N				Y
16	Using digging bar over direct buried cables	Y	Y				Y
17	Using Pneumatic clay digger in vicinity of electric facility	Y	Y				Y
18	Installing forms for field-constructed sub-surface structures from inside the designed footprint when connected cables are present	Y	Y				Y
19	Installing forms for field-constructed subsurface structures from outside the designed footprint when connected cables are present	N	N				Y
20	Installing forms for field-constructed subsurface structure prior to first energization of new cables	N	N				Y
21	Saw cutting operation	Y	N				Y
22	Hand excavate to locate cable fault	Y	Y				Y
23	Hand excavating to find service dead leg	Y	Y				Y
24	Removing underground silo	Y	Y				Y
25	Regrade	Y	N				Y
26	Build/remove shunt box w/ energized cable inside	Y	Y				Y

3.10 Access

Municipal Contractor personnel shall not climb into or out of Con Edison sub-surface structures by stepping on cables or hangers.

4.0 Removal of Conduit from Cables and Moving Energized Underground Cables Located Outside of Subsurface Structures

4.1 Purpose: Establish a guideline that shall be employed by Electrically Competent Qualified Municipal Contractor personnel, meeting OSHA training requirements, when removing conduit from cables and moving Con Edison energized underground cables located outside structures.

4.2 Application: Municipal Contractor personnel

4.3 Guideline: This guideline details the requirements for practices that shall be employed when moving Con Edison energized underground cables located outside of Con Edison structures. Movement of energized cables on the Con Edison system shall be performed in accordance with the following directions. Only Electrically Competent Qualified Municipal Contractor personnel who been trained and meet necessary OSHA requirements for moving energized underground cables and in accordance with the following directions shall perform movement of energized cables on the Con Edison system.

4.4 Job Briefing

The Electrically Competent Qualified Municipal Contractor in charge shall conduct a job briefing with the Municipal Contractor's employees involved before they start the job. The briefing shall cover: the hazards associated with the job; work procedures involved; special precautions; and personal protective equipment requirements. The Electrically Competent Qualified Municipal Contractor shall instruct that all cables are to be treated as energized. Additional briefings shall be held if significant changes, which might affect the safety of the Municipal Contractor's employees, occur during the course of the work. The Electrically Competent Qualified Municipal Contractor shall document completion of the job briefing.

4.5 Removal of Conduit from Cables

All subsurface electric cable systems and related components shall be considered energized. Caution shall always be employed whenever conduits are opened to expose the interior cable.

4.5.1- Pre-cast Concrete Conduit

a- The conduit shall be fractured by striking the top end corner of the conduit with a 3 lb. hammer equipped with a non-conductive handle. When fracturing the conduit, all impact/chipping action shall be performed in such a manner so as to be directed across the top of the conduit away from any cable that may be inside of the conduit.

b- A small piece of the concrete conduit shall be chipped away so that a visual examination of the interior of the conduit can be made to verify the presence of cable. All impact/chipping actions shall be performed in such a manner so as to be directed across the top of the duct, away from the cable.

c- If cable is present, concrete-chipping operations shall continue until enough material has been removed to permit insertion of a non-conductive protective shield barrier between the conduit and cable or as directed by the authorized Con Edison Inspector based on existing field conditions. Material such as exterior grade plywood or lumber (min. thickness ¾") or suitably reinforced plastic sheet material (min. thickness 0.060" – e.g. Norplex Micarta RT504 NEMA Grade G-3) shall be used for this purpose. This shield material shall provide protection for the cable during the remaining conduit removal operations. The remainder of the conduit shall be fractured using the 3 lb. hammer equipped with a non-conductive handle. Care shall be taken so as to avoid any impact upon the cable, either by direct or indirect hammer blows.

d- During and after conduit removal operations, cable/conduit shall be properly supported as indicated in Section 5.7, below.

4.5.2 - Concrete Encased Conduit

a- The concrete encased conduit (including but not limited to pre-cast, fiber, tile, clay), shall be fractured by striking the top end corner of the conduit with a 3 lb. hammer equipped with a non-conductive handle. When fracturing the conduit, all impact/chipping action shall be performed in such a manner so as to be directed across the top of the conduit away from any cable that may be inside of the conduit.

b- For concrete encased conduit, it may be necessary to employ a handheld cold chisel (in conjunction with the 3 lb. hammer) to remove concrete encasement. If a chisel is utilized, all impact/chipping actions shall be performed in such a manner so as to be directed across the top of the duct, away from the cable.

c- If the concrete encasement is so dense as to render the use of a hammer and handheld chisel non-effective, an 8-pound sledgehammer may be employed. If neither of these devices proves effective, the use of a pneumatic chipping hammer will be permitted. The weight/size of the pneumatic chipping hammer shall not exceed 20 lbs. When utilizing a pneumatic chipping hammer, the device shall be securely positioned and be under close operator control at all times. The tool bit used for these operations shall be chisel shaped with a minimum width of two (2") inches. All impact/chipping actions shall be performed in such a manner so as to be directed across the top of the duct, away from the cable.

d- A small piece of the concrete conduit shall be chipped away so as to permit verification of the presence of cable inside the conduit.

e- If cable is present, concrete-chipping operations shall continue until enough material has been removed to permit insertion of a non-conductive protective shield barrier between the conduit and cable or as directed by the authorized Con Edison Inspector

based on existing field conditions. Material such as exterior grade plywood or lumber (min. thickness ¾") or suitably reinforced plastic sheet material (min. thickness 0.060" – e.g. Norplex Micarta RT504 NEMA Grade G-3) shall be used for this purpose. This shield material shall provide protection for the cable during the remaining conduit removal operation.

f- After installation of the shield material has been completed, continue removal of remaining conduit and encasement, using handheld and power tools.

g- During and after conduit removal operations, cable/conduit shall be properly supported as indicated in Section 5.7, below.

4.5.3 – Wood Conduit

a- Wooden conduit shall be split using a handheld cold chisel and a 3 lb. hammer equipped with a non-conductive handle. All impact/chipping action shall be performed in such a manner so as to be directed across the top of the conduit away from the cable.

b- The chisel shall use to create a small window in the conduit that will permit a visual inspection of the conduit interior for the presence of cable.

c- If cable is present, wood conduit material shall continue to be removed until enough material has been removed to permit insertion of a non-conductive protective shield barrier between the conduit and cable or as directed by the authorized Con Edison Inspector based on existing field conditions. Material such as exterior grade plywood or lumber (min. thickness ¾") or suitably reinforced plastic sheet material (min. thickness 0.060" – e.g. Norplex Micarta RT504 NEMA Grade G-3) shall be used for this purpose. This shield material shall provide protection for the cable during the remaining conduit removal operation.

d- After installation of the shield material has been completed, continue removal of remaining conduit

e- During and after conduit removal operations, cable/conduit shall be properly supported as indicated in Section 5.7, below.

4.5.4 – HDPE Conduit

a- HDPE conduit shall be split using hand tools or a handheld pneumatic rotary cutting tool. All splitting/cutting actions shall be performed in such a manner so as to be directed across the top of the duct, away from the cable.

b- Pneumatic Rotary Cutting Tool – A pneumatic rotary cutting tool shall be used to score an access area in the surface of the conduit., Prior to application of the cutting tool to the surface of the

conduit, the depth collar on the pneumatic rotary cutting tool shall be set so that the cutting bit will penetrate approximately ¾ of the wall thickness of the conduit. After the conduit has been cut to the maximum depth allowable (such that the bit does not fully penetrate the thickness of the conduit), a 3 lb hammer shall be used to knock out the access area (window) outlined by the cutting tool. This will permit visual inspection of the conduit interior for the presence of cable.

c- If inspection of the interior of the conduit reveals that cable is present, a non-conductive protective shield barrier shall be inserted into the conduit between the conduit and cable. This shield material shall provide protection for the cable during the remaining conduit removal operations. Material such as exterior grade plywood or lumber (min. thickness ¾") or suitably reinforced plastic sheet material (min. thickness 0.060" – e.g. Norplex Micarta RT504 NEMA Grade G-3) shall be used for this purpose. This shield material shall provide protection for the cable during the remaining conduit removal operations.

d- If inspection of the conduit interior does not reveal the presence of cable, the remaining conduit may be removed using the tool choices mentioned in 4.5.4.a.

4.5.5 - Metal Conduit

a. When removing metal conduit, the Municipal Contractor should first excavate and expose a collar connecting two sections of conduit. Once the collar is accessible, split and/or cut the collar off to inspect the conduit interior for the presence of cable. If a metal conduit collar is NOT easily accessible, or found within 20 to 40 feet of open excavation, proceed to section 4.5.5.b. Note: If the work to be performed is in response to a suspected natural gas leak or in the presence of natural gas, only the use of non-powered hand tools is allowed. Further guidance will be provided by Gas Engineering.

b. If a collar connecting two sections of conduit cannot be found, metal conduit will be split using hand tools and/or a handheld rotary cutting tool. All splitting actions will be directed across the top of the conduit, away from the cable. Note: If the work to be performed is in response to a suspected natural gas leak or in the presence of natural gas, only the use of non-powered hand tools is allowed. Further guidance will be provided by Gas Engineering.

c. Score the outline of an access area onto the surface of the conduit. Do not fully penetrate the conduit with the tool while making this outline.

d. Use this outline as a guide for further splitting and cutting operations that will eventually create a viewing window into the conduit.

e. If inspection of the conduit interior reveals the presence of cable, insert a non-conductive protective barrier between the cable and conduit wall. The barrier will provide physical protection for the cable during remaining conduit removal operations. Materials including, but not limited to, exterior grade plywood, lumber, and Norplex Micarta are acceptable. After the installation of the non-conductive protective barrier, the removal of the remaining conduit may proceed using the tool choices mentioned in section 5.5.4b.

f. If inspection of the conduit interior does not reveal the presence of cable, the remaining conduit may be removed using the tool choices mentioned in section 4.5.5b.

4.6 Visual Inspection

a- A visual inspection of cables located outside Con Edison structures that will be moved, shall be performed by Electrically Competent Qualified Municipal Contractor personnel or the authorized Con Edison Inspector.

b- After the conduits have been broken out (removed from the cables), the exposed cable(s) shall be inspected by the Electrically Competent Qualified Municipal Contractor personnel.

c- The cables shall be visually inspected by the Electrically Competent Qualified Municipal Contractor personnel, and determined to be free from any of the defects that would prevent relocation. Cable(s) shall be free of cracks, tears, and evidence of oil stains, swelling, or melting of the insulation. Cables shall not have any exposed conductor.

4.7 Cable Moving Operations – Outside Structures

a- Prior to moving any cables outside of a subsurface structure, the cables located within the associated connecting subsurface structures shall be inspected in accordance with the guideline requirements for moving cables within Con Edison sub-structures.

b- Municipal Contractor personnel experienced in moving Con Edison cables only shall move cables.

c- Cables shall not be moved until plastic “fair-leaders” are positioned at the duct edges to prevent chaffing damage.

d- Synthetic web slings having a minimum width of two (2) inches shall support cables that have been removed from conduit. Slings shall be used in a basket hitch configuration.

e- Conduits housing cables shall be supported using slings, cable, or rope. Conduits shall be supported in such manner as to maintain alignment with one another.

f- Maximum distance between support points shall be four (4) feet.

g- To prevent inadvertent over bending of the cables, the maximum vertical or horizontal offset between supports shall be one foot (1') for cable that is supported outside of conduit. For cable that is being moved while still installed in conduit, the conduit shall not be offset more than one foot per four-foot section of conduit.

h- Each set of cables (cables from one duct/conduit) shall be moved individually. Cables from multiple ducts/conduits shall not be moved as a bundle.

i- Relocation of cables shall be performed in a careful manner with the movement of cable under complete control at all times. There shall be no sudden movements of the cable or the conduit that contains cable.

j- An observer shall be positioned so as to determine proper slack in structures and to ensure that joints remain properly supported on rack arms and specified offsets are maintained. This observation shall be performed from outside of the structure while the cable is being moved.

k- Allowable horizontal and vertical offsets shall be determined based on applicable CET or JB item sketches and/or as directed by the authorized Con Edison Inspector.

l- Cables shall not be permitted to fall freely from temporary supports.

m- All cables supported by slings shall be visually inspected at the beginning and end of each work shift to ensure that no cracks, leaks, or other defects have developed.

n- Cables shall be repositioned with care when being moved into their final position for the installation of split conduit.

4.7.1 Personal Protective Equipment

Municipal Contractor personnel moving Con Edison energized cables shall refer to and comply with applicable OSHA requirements regarding the use of Personal Protective Equipment when performing this work. See Section 3.9 for Matrix on Con Edison's Personal Protective Equipment Guideline.

5.0 Breaking Out a Point of Entry (POE's) in an Electrical Enclosed Space

5.1 Activities Prior to creating POE's

5.1.1 Prior to creating POE's, the location of all conduit and cable passing through the section of the wall shall be visually identified and protected inside structure.

5.1.2 If any cables are required to be moved prior to creation of a POE, they shall be moved by properly trained and qualified Con Edison electrical personnel.

5.2 Creation of POE Operations

5.2.1 Using caution, expose the exterior section of the wall that you intend to create the POE (typically done in 2' – deep vertical sections) by carefully excavating on the outside of the structure.

5.2.2 When there is a potential for contact between the existing cables that have been visually identified and the tool being used to break out the POE, protect the cables using fire rated wood, phenolic board, cable shields or other acceptable non-conductive materials. Along with protecting the cable from coming in contact with the implement being used for breaking, cables on the walls in the POE area shall also be protected from falling debris using FR wood even if there is no potential for contact with said cables.

5.2.3 Once the following conditions have been satisfied:

5.2.3.1 Location of cables inside the structure and the associated conduit outside have been verified.

5.2.3.2 Protection of cable on both the inside and the outside of the structure walls

5.2.3.3 Structural integrity of the proposed POE area has been confirmed using hand tools

Then use the appropriate tool (up to and including a 90 lb. jackhammer) to create the POE on the section of structure wall that was previously prepared.

5.2.4 If a jackhammer is being used for the POE breakout operation, where feasible, support the tool from underneath to prevent slippage.

5.2.5 Where possible, the use of a 90 lb. jackhammer shall be avoided within 8" of a live conduit. If the competent person determines that the breakout can only be made using a jackhammer within 8" of live conduit, a physical barrier must be placed between the jackhammer and all facilities that could possibly come in contact with the jackhammer. The Municipal Contractor may then begin utilizing the 90 lb. jackhammer using a 3" bit or wider.

END OF JB-PAGES SECTION C
(NO FURTHER TEXT ON THIS PAGE)

SECTION D.
PRIVATE UTILITIES
PARTICIPATING LIST

PRIVATE UTILITIES PARTICIPATING LIST

COMPANY NAME	CONTACT NAME	CONTACT TELEPHONE	E-MAIL
CONSOLIDATED EDISON	DENNIS BRADY	917-608-3435	BradyD@coned.com
ECS / VERIZON	AUBREY MAKHANLALL	516-758-3705	aubrey.n.makhanlall@verizon.com

END OF JB-PAGES SECTION D
(NO FURTHER TEXT ON THIS PAGE)

SECTION E.
PRIVATE UTILITIES SCOPE OF WORK

JOINT BID WORKSHEET

ENGINEER'S ESTIMATE OF QUANTITY AND TYPES OF INTERFERENCE
FOR CONSOLIDATED EDISON COMPANY OF NEW YORK

QED1059

REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JOINT BID ITEM NUMBER	DESCRIPTION	UNITS	ESTIMATED QUANTITY
JB 108.1	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .1)	EA	62
JB 108.2	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .2)	EA	20
JB 108.3	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .3)	EA	12
JB 109.1	UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .1)	EA	1
JB 300.2	SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH GREATER THAN 5' DEEP	CY	42
JB 306	EXCAVATION REQUIRING SPECIAL CARE ON ACCOUNT OF PARALLELING UTILITY FACILITIES	CY	270
JB 330E	SUPPORT AND PROTECTION OF UTILITY FACILITIES DURING EXCAVATION	LF	1,272
JB 351	INSTALL AND REMOVE "A" FRAME ON UTILITY POLES	EA	3
JB 400	TEST PITS FOR UTILITY FACILITIES	CY	50
JB 401	TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES	CY	317
JB 402.2	EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	LF	3,960
JB 403	PLACING STEEL PROTECTION PLATES FOR UTILITY FACILITIES	SF	2,280
JB 405.1	TRENCH EXCAVATION FOR INSTALLATION OF UTILITY FACILITIES WITH TOTAL DEPTHS LESS THAN FIVE FEET	CY	326
JB 406	EXCAVATION FOR UTILITY STRUCTURE	CY	62
JB 450.1	CONSTRUCTION FIELD SUPPORT - SURVEY CREW (TYPE .1)	CRHRS	40
JB 450.2	CONSTRUCTION FIELD SUPPORT - SMALL SIZE CREW (TYPE .2)	CRHRS	40
JB 450.3	CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .3)	CRHRS	40

JOINT BID WORKSHEET

ENGINEER'S ESTIMATE OF QUANTITY AND TYPES OF INTERFERENCE
FOR CONSOLIDATED EDISON COMPANY OF NEW YORK

QED1059

REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JOINT BID ITEM NUMBER	DESCRIPTION	UNITS	ESTIMATED QUANTITY
JB 450.4	CONSTRUCTION FIELD SUPPORT - LARGE SIZE CREW (TYPE .4)	CRHRS	40
JB 500	REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)	LF	1,156
JB 501	REMOVAL OF ABANDONED MASONRY FOR UTILITY FACILITIES	CY	3
JB 603E.1	INSTALL UTILITY CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT	LF	1,501
JB 636 ED	ADJUSTMENT OF UTILITY HARDWARE (30" TO UNDER 34" WIDTH)	EA	6
JB 636 MD	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (30" TO UNDER 34" WIDTH)	EA	19
JB 636 MH	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (75" TO UNDER 125" WIDTH)	EA	2
JB 636 R	REPAIR TO UTILITY STRUCTURES	CY	18
JB 638 N	INSTALLATION OF FIELD CONSTRUCTED UTILITIES STRUCTURES.	CY	36
JB 638 R	BREAK OUT AND REMOVE UTILITY STRUCTURE	CY	22
JB 710.1	REMOVAL OF ABANDONED UTILITY STEEL/CAST IRON/ PLASTIC PIPES, UP TO AND INCLUDING 12" DIAMETER PIPE	LF	319
JB 803.1	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH RDWY REMOVAL (LINE CUT ASPHALT)	LF	50
JB 803.2	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS (LINE CUT ANY COMBINATION OF	LF	50

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 108.1 **UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .1)** **EA**

At the following locations:

#3. S/S Hillside Ave., I/O 211 St. (SB35612), Sht. 4
#10. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#22. S/S Hillside Ave., W/O Hollis Ct. Blvd. (M11071), Sht. 4
#23. I/O Hillside Ave., and Hollis Ct. Blvd. (M11071), Sht. 4
#43. S/S Hillside Ave., W/O 212 St. (M8808), Sht. 4
#45. S/S Hillside Ave., I/O 212 St. (M8808), Sht. 4
#60. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#73. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#83. W/S HOLLIS CT. BLVD., S/O HILLSIDE AVE. (M11071-50093), SHT. 4
#84. W/S HOLLIS CT. BLVD., F/O BLDG. 88-02 (50093-SL SERV.), SHT. 4
#88. W/S Hollis Ct. Blvd., F/O Bldg. 88-10 (20450-sl), Sht. 4
#89. W/S Hollis Ct. Blvd., F/O Bldg. 88-18 (27425-27424), Sht. 4
#93. W/S HOLLIS CT. BLVD., F/O BLDG. 88-20 (27424- SL&HYD.), SHT. 4
#94. W/S Hollis Ct. Blvd., F/O Bldg. 88-54 (58830-58329), Sht. 5
#95. W/S Hollis Ct. Blvd., F/O Bldg. 88-58 (27422-37411), Sht. 5
#96. S/S 89 Ave., I/O Hollis Ct. Blvd. (Ms367), Sht. 5
#100. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hyd.), Sht. 4
#101. W/S Hollis Ct. Blvd., F/O Bldg. 89-16 (27424-sl), Sht. 5
#102. W/S Hollis Ct. Blvd., F/O Bldg. 89-28 (228394-sl), Sht. 5
#103. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (SB27418), Sht. 5
#108. N/W/C Hollis Ct. Blvd., and 89 Rd., Sht. 5
#109. S/W/C Hollis Ct. Blvd., and 89 Rd. (SB27670), Sht. 5
#110. N/E/C Hollis Ct. Blvd., and 89 Rd. (SB27670), Sht. 5
#111. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hyd.), Sht. 5
#124. W/S 212 St., Opp. Bldg. 88-11 (58332-t11550), Sht. 4
#132. W/S 212 St., F/O Bldg. 88-36 (New SB), Sht. 4
#140. N/W/C 212 St., and 89 Ave. (SB58328), Sht. 4
#141. S/W/C 212 St., and 89 Ave. (SB58328 - P58328), Sht. 4
#143. W/S 212 Pl., F/O Bldg. 88-28 (SB3117 - Serv.), Sht. 4
#144. W/S 212 Pl., F/O Bldg. 88-30 (SB14297 - Serv.), Sht. 4
#145. W/S 212 Pl., F/O Bldg. 88-28 (SB14297 - T286), Sht. 4
#146. W/S 212 Pl., F/O Bldg. 88-48 (SB33734 - Serv.), Sht. 5

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

#147. N/E/C 212 Pl., and 89 Ave. (SB33733), Sht. 5
#149. W/S 212 Pl., F/O Bldg. 89-28 (P44988-33728), Sht. 5
#153. N/W/C 213 St., and 89 Ave. (SB54017), Sht. 5
#178. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#184. W/S Kew Gardens Rd., I/O 131 St. (19601-serv.), Sht. 8
#193. W/S Kew Gardens Rd., I/O 87 Ave. (19602-20082), Sht. 8
#201. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#204. W/S Kew Gardens Rd., Opp. Bldg. 131-37 (Serv.), Sht. 8
#220. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (M11384), Sht. 8
#233. N/S Hillside Ave., I/O 131 St. (M441-58691), Sht. 8
#235. N/S Hillside Ave., I/O 131 St. (M3816-23912), Sht. 8
#254. E/S 129 St., F/O Bldg. 84-53 (SB6721-t324), Sht. 9
#255. E/S 129 St., F/O Bldg. 84-63 (SB59709 - Serv.), Sht. 9
#256. E/S 130 St., N/O Hillside Ave. (23913-cust.), Sht. 9
#257. E/S 131 St., F/O Bldg. 85-17 (T100 - Riser), Sht. 8
#258. E/S 131 St., N/O Hillside Ave. (SB59285 - P35243), Sht. 8
#259. E/S 131 St., N/O Hillside Ave. (SB59285 - Cust.), Sht. 8
#261. N/S 86 Rd., F/O Bldg. 134-05 (SB2992 - Cust.), Sht. 8
#262. N/S 87 Ave., I/O 135 St. (M11047-69117), Sht. 7
#264. S/S 87 Ave., I/O 136 St. (SB53601), Sht. 7
#269. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#270. N/S 35 Ave., E/O Bell Blvd., Sht. 10
#277. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10
#286. N/S 35 Ave., F/O Bldg. 214-01 (T85 - Serv.), Sht. 10
#314. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5

Total Quantity for JB 108.1 = 62

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 108.2 **UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .2)** **EA**

At the following locations:

#5. S/S Hillside Ave., E/O 211 St. (SB35612 - M8799), Sht. 4

#18. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4

#24. S/S Hillside Ave., I/O Hollis Ct. Blvd. (M11071), Sht. 4

#31. S/S Hillside Ave., F/O Bldg. 213-44 (SB20454), Sht. 4

#47. S/S Hillside Ave., I/O 212 St. (M8808 - SB23008), Sht. 4

#61. S/S Hillside Ave., I/O 212 Pl. (SB14295), Sht. 4

#72. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4

#194. W/S Kew Gardens Rd., I/O 87 Ave. (19602-20082), Sht. 8

#221. W/ S Kew Gardens Rd., I/ O Hillside Ave. (M11384-m640), Sht. 8

#225. W/ S Kew Gardens Rd., I/ O Hillside Ave. (M11384-m640), Sht. 8

#227. N/S Hillside Ave., I/O Kew Gardens Rd. (M639-m640), Sht. 7

#229. N/ S Hillside Ave., I/ O Kew Gardens Rd. (M639-m11844), Sht. 7

#232. N/S Hillside Ave., I/O 131 St. (M441-11844), Sht. 8

#234. N/S Hillside Ave., F/O Ldg. 130-05 (New Hyd.), Sht. 8

#239. I/O Hillside Ave., and 130 St. (M270 - M3816), Sht. 9

#240. N/S Hillside, I/O 130 St. (M270 - M3816), Sht. 9

#252. N/S METROPOLITAN AVE., F/O BLDG. 129-19 (M270-M39815), SHT. 9

#253. N/S Metropolitan Ave., I/O 129 St., Sht. 9

#263. S/S 87 Ave., I/O 135 St. (M11047-53601), Sht. 7

Total Quantity for JB 108.2 = 20

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 108.3 **UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .3)** **EA**

At the following locations:

#148. S/E/C 212 Pl., and 89 Ave. (33733, M19644-VS8856), Sht. 5
#156. S/E/C Kew Gardens Rd., and 129 St. (New W.m., 3-way), Sht. 9
#158. S/S Kew Gardens Rd., F/O Bldg. 84-13 (New Hyd.), Sht. 9
#163. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way), Sht. 9
#171. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hyd.), Sht. 8
#183. W/S Kew Gardens Rd., I/O 131 St. (W.m., 3-way), Sht. 8
#205. W/ S Kew Gardens Rd., Opp. Bldg. 131-37 (19603-19604), Sht. 8
#209. W/S Kew Gardens Rd., Opp. Bldg. 131-45, Sht. 8
#213. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hyd.), Sht. 8
#231. N/S Hillside Ave., F/O Ldg. 131-13 (New Hyd.), Sht. 8
#244. N/ S Metropolitan Ave., F/ O Bldg. 129-19 (M270-23912), Sht. 9
#251. N/S METROPOLITAN AVE., F/O BLDG. 129-19 (M270-M39815), SHT. 9

Total Quantity for JB 108.3 = 12

JB 109.1 **UTILITIES CROSSING TRENCH FOR WATER MAIN OVER 12" AND UP TO 24" DIAMETER (TYPE .1)** **EA**

At the following locations:

#2. N/S Hillside Ave., I/O 211 St. (M8798), Sht. 4

Total Quantity for JB 109.1 = 1

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 300.2 **SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH GREATER THAN 5' DEEP** **CY**

At the following locations:

#12. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#17. S/S Hillside Ave., E/O 211 St. (SB51191), Sht. 4
#21. S/S Hillside Ave., W/O Hollis Ct. Blvd. (M11071), Sht. 4
#26. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#34. S/S Hillside Ave., F/O Bldg. 213-44 (SB20454), Sht. 4
#38. S/S Hillside Ave., W/O 212 St. (SB10118), Sht. 4
#42. S/S Hillside Ave., W/O 212 St. (M8808), Sht. 4
#69. S/S Hillside Ave., I/O 212 Pl. (SB14294), Sht. 4
#75. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#151. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5
#162. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#168. S/S Kew Gardens Rd., F/O Bldg. 84-23 (M636), Sht. 8
#175. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#179. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637), Sht. 8
#185. W/S Kew Gardens Rd., I/O 131 St. (SB19601), Sht. 8
#190. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#195. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#198. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#210. W/S Kew Gardens Rd., Opp. Bldg. 131-45 (SB19605), Sht. 8
#217. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (M11384), Sht. 8
#226. N/S Hillside Ave., E/O Kew Gardens Rd. (SB5128), Sht. 7
#236. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#245. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#271. N/S 35 Ave., E/O Bell Blvd. (SB24884), Sht. 10
#274. N/S 35 Ave., F/O Bldg. 213-39 (M3602), Sht. 10
#283. N/S 35 Ave., F/O Bldg. 213-53 (SB66435), Sht. 10

Total Quantity for JB 300.2 = 42

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 306 **EXCAVATION REQUIRING SPECIAL CARE ON ACCOUNT OF PARALLELING UTILITY FACILITIES** **CY**

At the following locations:

#1. N/S Hillside Ave., I/O 211 St. (M8798), Sht. 4
#4. S/S Hillside Ave., I/O 211 St. (SB35612 - M8799), Sht. 4
#14. S/S Hillside Ave., E/O 211 St. (M8799 - SB51191), Sht. 4
#25. W/S HOLLIS CT. BLVD., I/O HILLSIDE AVE. (M11071-TM7138), SHT. 4
#27. S/S HILLSIDE AVE., E/O HOLLIS CT. BLVD. (M11071-20454), SHT. 4
#44. N/S Hillside Ave., I/O 212 St. (M8808), Sht. 4
#48. S/S Hillside Ave., I/O 212 St. (M8808 - SB23008), Sht. 4
#59. S/S Hillside Ave., W/O 212 Pl. (SB23008 - SB14295), Sht. 4
#68. S/S Hillside Ave., W/O 212 Pl. (SB23008 - SB14295), Sht. 4
#81. W/S 212 Pl., S/O Hillside Ave. (M8809), Sht. 4
#150. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5
#152. W/S 213 St., F/O Bldg. 88-50 (M19643-54017), Sht. 5
#154. S/W/C 213 St., and 89 Ave. (SB54017), Sht. 5
#167. S/S Kew Gardens Rd., Bet. 130 St. and 86 Rd., Sht. 9
#189. S/S Kew Gardens Rd., Bet. 131 St. and 87 Ave., Sht. 9
#203. W/ S Kew Gardens Rd., Opp. Bldg. 131-37 - Bldg. 131-45, Sht. 8
#230. N/S Hillside Ave., I/O Kew Gardens Rd. (M639-m441), Sht. 8
#260. N/S 86 Rd., E/O Kew Gardens Rd. (28254-15284), Sht. 8
#265. W/S 135 St., Between 87 Ave. and Hillside Ave., Sht. 7
#273. N/S 35 Ave., E/O Bell Blvd. (SB24884 - M3602), Sht. 10
#282. N/S 35 Ave., F/O Bldg. 213-49 (M3602-66435), Sht. 10
#296. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4

Total Quantity for JB 306 = 270

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 330E **SUPPORT AND PROTECTION OF UTILITY FACILITIES DURING EXCAVATION** **LF**

At the following locations:

#6. S/S Hillside Ave., E/O 211 St. (SB35612 - M8799), Sht. 4
#35. S/S Hillside Ave., W/O 212 St. (20454-10118), Sht. 4
#39. S/S Hillside Ave., W/O 212 St. (SB10118 - M8808), Sht. 4
#46. S/S Hillside Ave., I/O 212 St. (M8808 - SB23008), Sht. 4
#71. S/S Hillside Ave., W/O 213 St. (SB14294 - M8809), Sht. 4
#74. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#157. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9
#202. W/ S Kew Gardens Rd., Opp. Bldg. 131-37-bldg. 131-45, Sht. 8
#302. W/S Hollis Ct. Blvd., F/O Bldg. 89-96, Sht. 6

Total Quantity for JB 330E = 1,272

JB 351 **INSTALL AND REMOVE "A" FRAME ON UTILITY POLES** **EA**

At the following locations:

#142. S/W/C 212 St., and 89 Ave. (P58328), Sht. 4
#155. S/W/C 213 St., and 89 Ave. (P99370), Sht. 5
#287. N/S 35 Ave., F/O Bldg. 214-11 (P3322), Sht. 10

Total Quantity for JB 351 = 3

JB 400 **TEST PITS FOR UTILITY FACILITIES** **CY**

At the following locations:

#288. Where Required,

Total Quantity for JB 400 = 50

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 401 **TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES** **CY**

At the following locations:

#7. S/S Hillside Ave., E/O 211 St. (SB35612 - M8799), Sht. 4
#28. S/S Hillside Ave., F/O Bldg. 213-44 (New Hydrant), Sht. 4
#78. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#85. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant), Sht. 4
#90. W/S Hollis Ct. Blvd., F/O Bldg. 88-20 (New Hydrant), Sht. 4
#97. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hyd.), Sht. 5
#104. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (SB27418), Sht. 5
#112. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hyd.), Sht. 5
#159. S/S Kew Gardens Rd., F/O Bldg. 84-13 (New Hyd.), Sht. 9
#164. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way), Sht. 9
#172. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hyd.), Sht. 8
#206. W/ S Kew Gardens Rd., Opp. Bldg. 131-37 (19603-19604), Sht. 8
#214. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hyd.), Sht. 8
#222. W/ S Kew Gardens Rd., I/ O Hillside Ave. (M11384-m640), Sht. 8
#241. N/ S Metropolitan Ave., F/ O Bldg. 129-19 (M270-23912), Sht. 9
#248. N/S METROPOLITAN AVE., F/O BLDG. 129-19 (M270-M39815), SHT. 9
#266. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#278. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10
#311. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5

Total Quantity for JB 401 = 317

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 402.2 **EXISTING NON-CONCRETE ENCASED CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT** **LF**

At the following locations:

#8. S/S Hillside Ave., E/O 211 St. (SB35612 - M8799), Sht. 4
#29. S/S Hillside Ave., F/O Bldg. 213-44 (New Hydrant), Sht. 4
#79. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#86. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant), Sht. 4
#91. W/S Hollis Ct. Blvd., F/O Bldg. 88-20 (New Hydrant), Sht. 4
#98. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hyd.), Sht. 5
#105. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (SB27418), Sht. 5
#113. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hyd.), Sht. 5
#160. S/S Kew Gardens Rd., F/O Bldg. 84-13 (New Hyd.), Sht. 9
#165. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way), Sht. 9
#173. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hyd.), Sht. 8
#207. W/ S Kew Gardens Rd., Opp. Bldg. 131-37 (19603-19604), Sht. 8
#215. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hyd.), Sht. 8
#223. W/ S Kew Gardens Rd., I/ O Hillside Ave. (M11384-m640), Sht. 8
#242. N/ S Metropolitan Ave., F/ O Bldg. 129-19 (M270-23912), Sht. 9
#249. N/S METROPOLITAN AVE., F/O BLDG. 129-19 (M270-M39815), SHT. 9
#267. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#279. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10
#312. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5

Total Quantity for JB 402.2 = 3,960

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 403 **PLACING STEEL PROTECTION PLATES FOR UTILITY FACILITIES** **SF**

At the following locations:

#9. S/S Hillside Ave., E/O 211 St. (SB35612 - M8799), Sht. 4
#30. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#80. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#87. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant), Sht. 4
#92. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant), Sht. 4
#99. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hyd.), Sht. 4
#106. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (SB27418), Sht. 5
#114. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hyd.), Sht. 4
#161. S/S Kew Gardens Rd., F/O Bldg. 84-13 (New Hyd.), Sht. 9
#166. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way), Sht. 9
#174. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hyd.), Sht. 8
#208. W/ S Kew Gardens Rd., Opp. Bldg. 131-37 (19603-19604), Sht. 8
#216. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hyd.), Sht. 8
#224. W/ S Kew Gardens Rd., I/ O Hillside Ave. (M11384-m640), Sht. 8
#243. N/ S Metropolitan Ave., F/ O Bldg. 129-19 (M270-23912), Sht. 9
#250. N/S METROPOLITAN AVE., F/O BLDG. 129-19 (M270-M39815), SHT. 9
#268. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#280. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10
#313. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5

Total Quantity for JB 403 = 2,280

JB 405.1 **TRENCH EXCAVATION FOR INSTALLATION OF UTILITY FACILITIES WITH TOTAL DEPTHS LESS THAN FIVE FEET** **CY**

At the following locations:

#116. W/S 212 St., S/O Hillside Ave., Sht. 4
#122. W/S 212 St., Opp. Bldg. 88-11 (58332-t11550), Sht. 4
#128. W/S 212 St., Between Hillside Ave. and 89 Ave., Sht. 4
#138. W/ S 212 St., B/ W Hillside Ave & 89 Ave. (Sb1-58328), Sht. 4
#297. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#303. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4

Total Quantity for JB 405.1 = 326

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 406 **EXCAVATION FOR UTILITY STRUCTURE** **CY**

At the following locations:

#57. S/S Hillside Ave., F/O Bldg. 212-10 (SB23008), Sht. 4
#64. S/S Hillside Ave., I/O 212 Pl. (SB14295), Sht. 4
#118. W/S 212 St., Opp. Bldg. 88-11 (New SB), Sht. 4
#133. W/S 212 St., F/O Bldg. 88-36 (New SB), Sht. 4
#300. S/S Hillside Ave., I/O 212 Pl. (SB14294), Sht. 4
#306. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4
#309. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5

Total Quantity for JB 406 = 62

JB 450.1 **CONSTRUCTION FIELD SUPPORT - SURVEY CREW (TYPE .1)** **CRHRS**

At the following locations:

#291. Where Required,

Total Quantity for JB 450.1 = 40

JB 450.2 **CONSTRUCTION FIELD SUPPORT - SMALL SIZE CREW (TYPE .2)** **CRHRS**

At the following locations:

#292. Where Required,

Total Quantity for JB 450.2 = 40

JB 450.3 **CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .3)** **CRHRS**

At the following locations:

#293. Where Required,

Total Quantity for JB 450.3 = 40

JB 450.4 **CONSTRUCTION FIELD SUPPORT - LARGE SIZE CREW (TYPE .4)** **CRHRS**

At the following locations:

#294. Where Required,

Total Quantity for JB 450.4 = 40

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 500 **REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)** **LF**

At the following locations:

#115. W/S 212 St., S/O Hillside Ave., Sht. 4
#125. W/S 212 St., Opp. Bldg. 88-11 (58332-t11550), Sht. 4
#127. W/S 212 St., Between Hillside Ave. and 89 Ave., Sht. 4
#137. W/S 212 ST., B/W HILLSIDE AVE & 89 AVE. (58331-58328), SHT. 4
#228. N/S Hillside Ave., I/O Kew Gardens Rd. (M639-m640), Sht. 7
#281. N/S 35 Ave., F/O Bldg. 213-43 (M3602 - D.e.), Sht. 10

Total Quantity for JB 500 = 1,156

JB 501 **REMOVAL OF ABANDONED MASONRY FOR UTILITY FACILITIES** **CY**

At the following locations:

#121. W/S 212 St., Opp. Bldg. 88-11 (SB58332), Sht. 4
#136. W/S 212 St., F/O Bldg. 88-36 (SB58831), Sht. 4

Total Quantity for JB 501 = 3

JB 603E.1 **INSTALL UTILITY CONDUITS PLACED IN FINAL POSITION WITHOUT CONCRETE ENCASEMENT** **LF**

At the following locations:

#49. S/S Hillside Ave., F/O Bldg. 212-04 (Serv.), Sht. 4
#51. S/S Hillside Ave., F/O Bldg. 212-06 (Serv.), Sht. 4
#53. S/S Hillside Ave., F/O Bldg. 212-08 (Serv.), Sht. 4
#66. S/S Hillside Ave., I/O 212 Pl. (Serv. Bldg. 212-32), Sht. 4
#117. W/S 212 St., S/O Hillside Ave., Sht. 4
#123. W/S 212 St., Opp. Bldg. 88-11 (58332-t11550), Sht. 4
#129. W/S 212 St., Between Hillside Ave. and 89 Ave., Sht. 4
#130. W/S 212 ST., SERVICE TO BLDG. 88-29, SHT. 4
#139. W/ S 212 St., B/ W Hillside Ave & 89 Ave. (Sb1-58328), Sht. 4
#298. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#304. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4

Total Quantity for JB 603E.1 = 1,501

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 636 ED **ADJUSTMENT OF UTILITY HARDWARE (30" TO UNDER 34" WIDTH)** **EA**

At the following locations:

#58. S/S Hillside Ave., F/O Bldg. 212-10 (SB23008), Sht. 4
#65. S/S Hillside Ave., I/O 212 Pl. (SB14295), Sht. 4
#120. W/S 212 St., Opp. Bldg. 88-11 (New SB), Sht. 4
#135. W/S 212 St., F/O Bldg. 88-36 (New SB), Sht. 4
#301. S/S Hillside Ave., I/O 212 Pl. (SB14294), Sht. 4
#310. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5

Total Quantity for JB 636 ED = 6

JB 636 MD **MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (30" TO UNDER 34" WIDTH)** **EA**

At the following locations:

#13. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#15. S/S Hillside Ave., E/O 211 St. (SB51191), Sht. 4
#33. S/S Hillside Ave., F/O Bldg. 213-44 (SB20454), Sht. 4
#37. S/S Hillside Ave., W/O 212 St. (SB10118), Sht. 4
#40. S/S Hillside Ave., W/O 212 St. (M8808), Sht. 4
#76. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#169. S/S Kew Gardens Rd., F/O Bldg. 84-23 (M636), Sht. 8
#176. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#180. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637), Sht. 8
#186. W/S Kew Gardens Rd., I/O 131 St. (SB19601), Sht. 8
#191. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#196. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#199. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#218. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (M11384), Sht. 8
#237. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#246. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#272. N/S 35 Ave., E/O Bell Blvd. (SB24884), Sht. 10
#275. N/S 35 Ave., F/O Bldg. 213-39 (M3602), Sht. 10
#284. N/S 35 Ave., F/O Bldg. 213-53 (SB66435), Sht. 10

Total Quantity for JB 636 MD = 19

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 636 MH **MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (75" TO UNDER 125" WIDTH)** **EA**

At the following locations:

#20. S/S Hillside Ave., W/O Hollis Ct. Blvd. (M11071), Sht. 4
#82. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4

Total Quantity for JB 636 MH = 2

JB 636 R **REPAIR TO UTILITY STRUCTURES** **CY**

At the following locations:

#16. S/S Hillside Ave., E/O 211 St. (SB51191), Sht. 4
#19. S/S Hillside Ave., W/O Hollis Ct. Blvd. (M11071), Sht. 4
#32. S/S Hillside Ave., F/O Bldg. 213-44 (SB20454), Sht. 4
#36. S/S Hillside Ave., W/O 212 St. (SB10118), Sht. 4
#41. S/S Hillside Ave., W/O 212 St. (M8808), Sht. 4
#77. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#107. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (SB27418), Sht. 5
#170. S/S Kew Gardens Rd., F/O Bldg. 84-23 (M636), Sht. 8
#219. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (M11384), Sht. 8
#247. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#276. N/S 35 Ave., F/O Bldg. 213-39 (M3602), Sht. 10
#285. N/S 35 Ave., F/O Bldg. 213-53 (SB66435), Sht. 10

Total Quantity for JB 636 R = 18

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 638 N **INSTALLATION OF FIELD CONSTRUCTED UTILITIES STRUCTURES.** **CY**

At the following locations:

#56. S/S Hillside Ave., F/O Bldg. 212-10 (SB23008), Sht. 4
#63. S/S Hillside Ave., I/O 212 Pl. (SB14295), Sht. 4
#119. W/S 212 St., Opp. Bldg. 88-11 (New SB), Sht. 4
#134. W/S 212 St., F/O Bldg. 88-36 (New SB), Sht. 4
#182. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637), Sht. 8
#188. W/S Kew Gardens Rd., I/O 131 St. (SB19601), Sht. 8
#295. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#299. S/S Hillside Ave., I/O 212 Pl. (SB14294), Sht. 4
#305. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4
#308. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5
#315. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#316. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#317. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#318. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#319. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9

Total Quantity for JB 638 N = 36

JB 638 R **BREAK OUT AND REMOVE UTILITY STRUCTURE** **CY**

At the following locations:

#11. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#55. S/S Hillside Ave., F/O Bldg. 212-10 (SB23008), Sht. 4
#62. S/S Hillside Ave., I/O 212 Pl. (SB14295), Sht. 4
#70. S/S Hillside Ave., I/O 212 Pl. (SB14294), Sht. 4
#177. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#181. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637), Sht. 8
#187. W/S Kew Gardens Rd., I/O 131 St. (SB19601), Sht. 8
#192. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#197. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#200. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#238. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#307. W/S 213 St., F/O Bldg. 88-50 (M19643), Sht. 5

Total Quantity for JB 638 R = 22

CON EDISON JOINT BIDDING SCOPE OF WORK
SUPPORT AND PROTECTION
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

JB 710.1 **REMOVAL OF ABANDONED UTILITY STEEL/CAST IRON/ PLASTIC PIPES, UP TO AND INCLUDING 12" DIAMETER PIPE** **LF**

At the following locations:

#50. S/S Hillside Ave., F/O Bldg. 212-04 (Serv.), Sht. 4
#52. S/S Hillside Ave., F/O Bldg. 212-06 (Serv.), Sht. 4
#54. S/S Hillside Ave., F/O Bldg. 212-08 (Serv.), Sht. 4
#67. S/S Hillside Ave., I/O 212 Pl. (Serv. Bldg. 212-32), Sht. 4
#126. W/S 212 St., Opp. Bldg. 88-11 (58332-t11550), Sht. 4
#131. W/S 212 St., Service to Bldg. 88-29, Sht. 4

Total Quantity for JB 710.1 = 319

JB 803.1 **LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH RDWY REMOVAL (LINE CUT ASPHALT)** **LF**

At the following locations:

#289. Where Required,

Total Quantity for JB 803.1 = 50

JB 803.2 **LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS (LINE CUT ANY COMBINATION OF ASPHALT AND CONCRETE ROADWAY)** **LF**

At the following locations:

#290. Where Required,

Total Quantity for JB 803.2 = 50

CON EDISON CONTRACT INCLUSION ANALYSIS
CITY BID ITEMS ESTIMATED QUANTITIES
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

CITY BID ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY
4.02 AB-R	ASPHALTIC CONCRETE WEARING COURSE, 1 1/2" THICK	SY	627
4.02 CA	ASPHALTIC BINDER MIXTURE	TONS	80
4.04 H	CONCRETE BASE PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION (HIGH EARLY STRENGTH)	CY	70
6.02 AAN	UNCLASSIFIED EXCAVATION	CY	104
6.55	SAWCUTTING EXISTING PAVEMENT	LF	506
6.91	REFLECTIVE CRACKING MEMBRANE (18" WIDE)	LF	506
60.11R608	FURNISHING AND DELIVERING 8" DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	LF	40
60.11R612	FURNISHING AND DELIVERING 12" DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	LF	215
60.12D08	LAYING 8" DUCTILE IRON PIPE AND FITTINGS	LF	40
60.12D12	LAYING 12" DUCTILE IRON PIPE AND FITTINGS	LF	315
60.13M0A24	FURNISHING & DELIVERING DUCTILE IRON MECHANICAL JOINT FITTINGS 24 INCH DIA. AND SMALLER, INCL. WEDGE TYPE RETAINER GLANDS	TONS	6
65.21PS	FURNISHING AND PLACING POLYETHYLENE SLEEVE	LF	119
65.31FF	FURNISHING, DELIVERING AND PLACING FILTER FABRIC	SF	1,845
65.71SG	FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR BROKEN STONE BEDDING	CY	7
70.81CB	CLEAN BACKFILL	CY	122
73.31AEO	ADDITIONAL EARTH EXCAVATION INCLUDING TEST PIT (ALL DEPTHS)	CY	19

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

4.02 AB-R **ASPHALTIC CONCRETE WEARING COURSE, 1 1/2" THICK** **SY**

At the following locations:

#1. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#4. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#17. S/S Hillside Ave., F/O Bldg. 213-44 (New Hydrant)
#20. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#33. S/W/C Hillside Ave., and 212 St. (M8808)
#46. S/S Hillside Ave., F/O Bldg. 212-08 (SB23008)
#49. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#52. S/S Hillside Ave., I/O 212 Pl. (SB14295)
#55. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4
#58. S/S Hillside Ave., E/O 212 Pl. (SB14294), Sht. 4
#61. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#74. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#87. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant)
#90. W/S Hollis Ct. Blvd., F/O Bldg. 88-20 (New Hydrant)
#93. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hydrant)
#96. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (New Hydrant)
#99. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hydrant)
#102. W/S 212 St., Opp. Bldg. 88-11 (New SB1)
#105. W/S 212 St., Opp. Bldg. 88-33 (New SB2)
#108. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#123. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9
#126. S/S Kew Gardens Rd., E/O 129 St. (New Hydrant)
#129. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#142. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way)
#145. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#158. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hydrant)
#161. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#164. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637)
#167. W/S Kew Gardens Rd., I/O 131 St. (SB19601)
#170. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#173. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#176. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#179. W/S Kew Gardens Rd., Opp. Bldg. 131-37 (SB19603 - SB19604)

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

#182. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hydrant)
#185. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#198. W/S Kew Gardens Rd., I/O Hillside Ave. (M11384-m640)
#201. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#204. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-23912)
#207. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-m39815)
#210. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#223. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#226. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5
#229. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10

Total Quantity for 4.02 AB-R = 627

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

4.02 CA **ASPHALTIC BINDER MIXTURE** **TONS**

At the following locations:

#2. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#5. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#18. S/S Hillside Ave., F/O Bldg. 213-44 (New Hydrant)
#21. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#34. S/W/C Hillside Ave., and 212 St. (M8808)
#47. S/S Hillside Ave., F/O Bldg. 212-08 (SB23008)
#50. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#53. S/S Hillside Ave., I/O 212 Pl. (SB14295)
#56. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4
#59. S/S Hillside Ave., E/O 212 Pl. (SB14294), Sht. 4
#62. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#75. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#88. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant)
#91. W/S Hollis Ct. Blvd., F/O Bldg. 88-20 (New Hydrant)
#94. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hydrant)
#97. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (New Hydrant)
#100. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hydrant)
#103. W/S 212 St., Opp. Bldg. 88-11 (New SB1)
#106. W/S 212 St., Opp. Bldg. 88-33 (New SB2)
#109. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#124. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9
#127. S/S Kew Gardens Rd., E/O 129 St. (New Hydrant)
#130. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#143. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way)
#146. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#159. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hydrant)
#162. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#165. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637)
#168. W/S Kew Gardens Rd., I/O 131 St. (SB19601)
#171. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#174. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#177. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#180. W/S Kew Gardens Rd., Opp. Bldg. 131-37 (SB19603 - SB19604)

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

#183. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hydrant)
#186. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#199. W/S Kew Gardens Rd., I/O Hillside Ave. (M11384-m640)
#202. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#205. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-23912)
#208. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-m39815)
#211. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#224. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#227. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5
#230. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10
#232. As Required at Various Locations,

Total Quantity for 4.02 CA = 80

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

4.04 H	**CONCRETE BASE PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION (HIGH EARLY STRENGTH)**	**CY**

At the following locations:

#3. S/S Hillside Ave., E/O 211 St. (M8799), Sht. 4
#6. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#19. S/S Hillside Ave., F/O Bldg. 213-44 (New Hydrant)
#22. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#35. S/W/C Hillside Ave., and 212 St. (M8808)
#48. S/S Hillside Ave., F/O Bldg. 212-08 (SB23008)
#51. S/S Hillside Ave., I/O 212 Pl. (SB14295 - T385), Sht. 4
#54. S/S Hillside Ave., I/O 212 Pl. (SB14295)
#57. E/S 212 Pl. (New SB), S/O Hillside Ave. , Sht. 4
#60. S/S Hillside Ave., E/O 212 Pl. (SB14294), Sht. 4
#63. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#76. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#89. W/S Hollis Ct. Blvd., F/O Bldg. 88-02 (New Hydrant)
#92. W/S Hollis Ct. Blvd., F/O Bldg. 88-20 (New Hydrant)
#95. W/S Hollis Ct. Blvd., F/O Bldg. 89-14 (New Hydrant)
#98. W/S Hollis Ct. Blvd., F/O Bldg. 89-38 (New Hydrant)
#101. W/S Hollis Ct. Blvd., F/O Bldg. 89-68 (New Hydrant)
#104. W/S 212 St., Opp. Bldg. 88-11 (New SB1)
#107. W/S 212 St., Opp. Bldg. 88-33 (New SB2)
#110. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#125. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9
#128. S/S Kew Gardens Rd., E/O 129 St. (New Hydrant)
#131. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#144. S/W/C Kew Gardens Rd., and 130 St. (New W.m., 3-way)
#147. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#160. W/S Kew Gardens Rd., F/O Bldg. 85-31 (New Hydrant)
#163. W/S Kew Gardens Rd., I/O 86 Rd. (SB28254), Sht. 8
#166. W/S Kew Gardens Rd., F/O Bldg. 85-02 (M637)
#169. W/S Kew Gardens Rd., I/O 131 St. (SB19601)
#172. W/S Kew Gardens Rd., I/O 87 Ave. (SB19602), Sht. 8
#175. W/S Kew Gardens Rd., I/O 87 Ave. (M638), Sht. 8
#178. W/S Kew Gardens Rd., Opp. Bldg. 131-31 (SB19603), Sht. 8
#181. W/S Kew Gardens Rd., Opp. Bldg. 131-37 (SB19603 - SB19604)

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

#184. W/S Kew Gardens Rd., Opp. Bldg. 134-15 (New Hydrant)
#187. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#200. W/S Kew Gardens Rd., I/O Hillside Ave. (M11384-m640)
#203. N/S Hillside Ave., I/O 130 St. (23911), Sht. 9
#206. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-23912)
#209. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270-m39815)
#212. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#225. W/S 135 St., F/O Bldg. 87-18 (New Hydrant), Sht. 7
#228. N/S 89 Ave. (New Hyd.), E/O Hollis Ct. Blvd. , Sht. 5
#231. N/S 35 Ave., F/O Bldg. 213-39 (New Hyd.), Sht. 10

Total Quantity for 4.04 H = 70

6.02 AAN **UNCLASSIFIED EXCAVATION** **CY**

At the following locations:

#10. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#26. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#39. S/W/C Hillside Ave., and 212 St. (M8808)
#67. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#80. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#114. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#135. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#151. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#191. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#216. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 6.02 AAN = 104

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

6.55 **SAWCUTTING EXISTING PAVEMENT** **LF**

At the following locations:

#7. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#23. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#36. S/W/C Hillside Ave., and 212 St. (M8808)
#64. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#77. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#111. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#132. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#148. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#188. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#213. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 6.55 = 506

6.91 **REFLECTIVE CRACKING MEMBRANE (18" WIDE)** **LF**

At the following locations:

#8. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#24. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#37. S/W/C Hillside Ave., and 212 St. (M8808)
#65. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#78. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#112. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#133. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#149. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#189. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#214. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 6.91 = 506

60.11R608 **FURNISHING AND DELIVERING 8" DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)** **LF**

At the following locations:

#233. As Required at Various Locations

Total Quantity for 60.11R608 = 40

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

60.11R612 **FURNISHING AND DELIVERING 12" DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)** **LF**

At the following locations:

#13. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#29. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#42. S/W/C Hillside Ave., and 212 St. (M8808)
#70. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#83. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#117. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#138. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#154. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#194. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#219. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#235. As Required at Various Locations,

Total Quantity for 60.11R612 = 215

60.12D08 **LAYING 8" DUCTILE IRON PIPE AND FITTINGS** **LF**

At the following locations:

#232. As Required at Various Locations

Total Quantity for 60.12D08 = 40

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

60.12D12 **LAYING 12" DUCTILE IRON PIPE AND FITTINGS** **LF**

At the following locations:

#12. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#28. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#41. S/W/C Hillside Ave., and 212 St. (M8808)
#69. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#82. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#116. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#137. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#153. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#193. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#218. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#236. As Required at Various Locations

Total Quantity for 60.12D12 = 315

60.13M0A24 **FURNISHING & DELIVERING DUCTILE IRON MECHANICAL JOINT FITTINGS 24 INCH DIA. AND SMALLER, INCL. WEDGE TYPE RETAINER GLANDS** **TONS**

At the following locations:

#11. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#27. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#40. S/W/C Hillside Ave., and 212 St. (M8808)
#68. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#81. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#115. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#136. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#152. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#192. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#217. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 60.13M0A24 = 6

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

65.21PS **FURNISHING AND PLACING POLYETHYLENE SLEEVE** **LF**

At the following locations:

#14. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#30. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#43. S/W/C Hillside Ave., and 212 St. (M8808)
#71. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#84. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#118. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#139. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#155. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#195. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#220. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 65.21PS = 119

65.31FF **FURNISHING, DELIVERING AND PLACING FILTER FABRIC** **SF**

At the following locations:

#15. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#31. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#44. S/W/C Hillside Ave., and 212 St. (M8808)
#72. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#85. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#119. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#140. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#156. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#196. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#221. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9
#238. As Required at Various Locations,

Total Quantity for 65.31FF = 1,845

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

65.71SG **FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR BROKEN STONE BEDDING** **CY**

At the following locations:

#16. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 4
#32. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#45. S/W/C Hillside Ave., and 212 St. (M8808)
#73. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#86. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#120. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#141. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#157. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#197. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#222. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 65.71SG = 7

70.81CB **CLEAN BACKFILL** **CY**

At the following locations:

#9. S/ S Hillside Ave., W/ O Hollis Ct. Blvd. (51191-m11071), Sht. 4
#25. S/S Hillside Ave., F/O Bldg. 213-46 (20454)
#38. S/W/C Hillside Ave., and 212 St. (M8808)
#66. S/S Hillside Ave., I/O 213 St. (M8809), Sht. 4
#79. W/S Hollis Ct. Blvd., I/O Hillside Ave. (TM7138), Sht. 4
#113. S/S HILLSIDE AVE., W/O HOLLIS CT. BLVD. (51191-M11071), SHT. 5
#122. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9
#134. S/W/C Kew Gardens Rd., and 130 St. (M635), Sht. 9
#150. S/S Kew Gardens Rd., F/O Bldg. 84-23. (M636), Sht. 8
#190. S/W/C Kew Gardens Rd., and Hillside Ave. (M11384), Sht. 8
#215. N/S Metropolitan Ave., F/O Bldg. 129-19 (M270), Sht. 9

Total Quantity for 70.81CB = 122

CON EDISON JOINT BIDDING SCOPE OF WORK
CITY BID ITEMS FOR INCLUSION IN
QED1059
REPLACEMENT OF DISTRIBUTION WATER MAINS
BOROUGH OF QUEENS

73.31AEO	**ADDITIONAL EARTH EXCAVATION INCLUDING TEST PIT (ALL DEPTHS)**	**CY**

At the following locations:

#121. S/S Kew Gardens Rd., Between 129 St. and 130 St., Sht. 9

Total Quantity for 73.31AEO = 19

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

JB ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY
JB 108.1	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .1)	EACH	11
JB 108.2	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .2)	EACH	2
JB 108.3	UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .3)	EACH	1
JB 300.1	SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH LESS THAN 5' DEEP	C.Y.	23
JB 330T1	SUPPORT AND PROTECTION OF COMMUNICATION UTILITY FACILITIES DURING EXCAVATION OF CITY TRENCH WHEN PARALLELING COMMUNICATION FACILITIES LIE COMPLETELY IN THE PROPOSED CITY TRENCH	L.F.	170
JB 330T2.1	COMMUNICATIONS FACILITY OPERATOR(S) REQUESTS THE TRENCH BE WIDENED	L.F.	30
JB 330T2.2	COMMUNICATION FACILITY OPERATOR(S) REQUESTS THE TRENCH / SHEETING BE MODIFIED	L.F.	30
JB 400	TEST PITS FOR UTILITY FACILITIES	C.Y.	50
JB 401	TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES	C.Y.	47
JB 402T.2A	EXISTING NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	198
JB 402T.V2A	EXISTING VACANT NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT	L.F.	57
JB 402T.3	ACM REMOVAL AND DISPOSAL OF VERIZON/ECS CONDUITS WITH ASBESTOS CONTAINING MATERIAL TRANSITE PIPES (ACM-TP) UP TO AND INCLUDING 4” DIAMETER	L.F.	57
JB 403T.2	FURNISH AND INSTALL STEEL PROTECTION PLATES FOR UTILITES FACILITES (3/8" THICK)	S.F.	50
JB 404	PIER & PLATE METHOD OF PROTECTION FOR DUCTILE IRON WATER MAINS AND OTHER SHALLOW FACILITIES	S.F.	50
JB 450.3	CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .3)	CREW/HR	100
JB 500	REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)	L.F.	56
JB 636 ME	MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (34" TO UNDER 41" WIDTH)	EACH	2
JB 700	SPECIAL MODIFICATION OF WORK METHODS TO ACCOMMODATE/PROTECT UNDERGROUND FACILITIES WITH LIMITED COVER	C.Y.	20

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

JB 803.2	LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS (LINE CUT ANY COMBINATION OF ASPHALT AND CONCRETE ROADWAY)	L.F.	100

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

JB 108.1

UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .1)

@ THE FOLLOWING LOCATIONS

	QTY(EACH)
SOUTH SIDE OF HILLSIDE AVENUE BTWN 212TH STREET & 212TH PLACE	1
WEST SIDE OF 212TH STREET BTWN HILLSIDE AVENUE & 89TH AVENUE	2
WEST SIDE OF 135TH STREET BTWN HILLSIDE AVENUE & 87TH AVENUE	2
NEC OF INTERSECTION OF METROPOLITAN AVENUE & 129TH STREET	3
EAST SIDE OF 129TH STREET BTWN METROPOLITAN AVENUE & KEW GARDENS ROAD	1
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	2
JB 108.1 TOTAL	**11**

JB 108.2

UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .2)

@ THE FOLLOWING LOCATIONS

	QTY(EACH)
SEC OF INTERSECTION OF 212TH STREET & 89TH AVENUE	1
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	1
JB 108.2 TOTAL	**2**

JB 108.3

UTILITIES CROSSING TRENCH FOR WATER MAIN UP TO AND INCLUDING 12" DIAMETER (TYPE .3)

@ THE FOLLOWING LOCATIONS

	QTY(EACH)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	1
JB 108.3 TOTAL	**1**

JB 300.1

SPECIAL CARE EXCAVATION AND BACKFILLING IN TRENCH LESS THAN 5' DEEP

@ THE FOLLOWING LOCATIONS

	QTY(C.Y.)
NEC INT OF METROPOLITAN AVENUE & 129TH STREET	3
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	20
JB 300.1 TOTAL	**23**

JB 330T1

SUPPORT AND PROTECTION OF COMMUNICATION UTILITY FACILITIES DURING EXCAVATION OF CITY TRENCH WHEN PARALLELING COMMUNICATION FACILITIES LIE COMPLETELY IN THE PROPOSED CITY TRENCH

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
EAST SIDE OF 129TH STREET BTWN METROPOLITAN AVENUE & KEW GARDENS ROAD	40
SEC INT OF HILLSIDE AVENUE & 212TH STREET	100
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	30
JB 330T1 TOTAL	**170**

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

JB 330T2.1

COMMUNICATIONS FACILITY OPERATOR(S) REQUESTS THE TRENCH BE WIDENED

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	30

JB 330T2.1 **TOTAL** **30**

JB 330T2.2

COMMUNICATION FACILITY OPERATOR(S) REQUESTS THE TRENCH / SHEETING BE MODIFIED

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	30

JB 330T2.2 **TOTAL** **30**

JB 400

TEST PITS FOR UTILITY FACILITIES

@ THE FOLLOWING LOCATIONS

	QTY(C.Y.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	50

JB 400 **TOTAL** **50**

JB 401

TRENCH EXCAVATION FOR ADJUSTMENT OF UTILITY FACILITIES

@ THE FOLLOWING LOCATIONS

	QTY(C.Y.)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	17
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	30

JB 401 **TOTAL** **47**

JB 402T.2A

EXISTING NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	148
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	50

JB 402T.2A **TOTAL** **198**

JB 402T.V2A

EXISTING VACANT NON-CONCRETE ENCASED TELECOMMUNICATION CONDUITS PLACED IN FINAL POSITION WITH CONCRETE ENCASEMENT

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	57

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE		20
JB 402T.V2A	**TOTAL**	**57**

JB 402T.3

ACM REMOVAL AND DISPOSAL OF VERIZON/ECS CONDUITS WITH ASBESTOS CONTAINING MATERIAL TRANSITE PIPES (ACM-TP) UP TO AND INCLUDING 4" DIAMETER

@ THE FOLLOWING LOCATIONS

		L.F.
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE		37
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE		20
JB 402T.3	**TOTAL**	**57**

JB 403T.2

FURNISH AND INSTALL STEEL PROTECTION PLATES FOR UTILITES FACILITES (3/8" THICK)

@ THE FOLLOWING LOCATIONS

		QTY(S.F.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE		50
JB 403T.2	**TOTAL**	**50**

JB 404

PIER & PLATE METHOD OF PROTECTION FOR DUCTILE IRON WATER MAINS AND OTHER SHALLOW FACILITIES

@ THE FOLLOWING LOCATIONS

		S.F.
SEC INT OF 212TH STREET & 89TH AVENUE		50
JB 404	**TOTAL**	**50**

JB 450.3

CONSTRUCTION FIELD SUPPORT - MEDIUM SIZE CREW (TYPE .3)

@ THE FOLLOWING LOCATIONS

		QTY(CREW/HR)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE		100
JB 450.3	**TOTAL**	**100**

JB 500

REMOVAL OF ABANDONED UTILITY CONDUITS (NON-CONCRETE ENCASED)

@ THE FOLLOWING LOCATIONS

		QTY(L.F.)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE		6
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE		50
JB 500	**TOTAL**	**56**

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Schedule JB: Scope of Work for Joint Bid Items

JB 636 ME

MODIFICATION OF WORK METHODS TO ACCOMMODATE UTILITY HARDWARE (34" TO UNDER 41" WIDTH)

@ THE FOLLOWING LOCATIONS

	QTY(EACH)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	2

JB 636 ME **TOTAL** **2**

JB 700

SPECIAL MODIFICATION OF WORK METHODS TO ACCOMMODATE/PROTECT UNDERGROUND FACILITIES WITH LIMITED COVER

@ THE FOLLOWING LOCATIONS

	QTY(C.Y.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	20

JB 700 **TOTAL** **20**

JB 803.2

LINE CUT BY PNEUMATIC TOOLS IN LIEU OF SAW CUT ASSOCIATED WITH ROADWAY REMOVAL OPERATIONS (LINE CUT ANY COMBINATION OF ASPHALT AND CONCRETE ROADWAY)

@ THE FOLLOWING LOCATIONS

	QTY(L.F.)
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	100

JB 803.2 **TOTAL** **100**

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Bid Item Accomodation Estimate

ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY
4.02 AB-R	ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK	QTY(SY)	15
4.02 CA	BINDER MIXTURE	QTY(TON)	3
4.04 H	CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS, FOR TRENCH RESTORATION (HIGH EARLY STRENGTH)	QTY(CY)	4
6.02 AAN	UNCLASSIFIED EXCAVATION	QTY(CY)	0.86
60.11R608	FURNISHING AND DELIVERING 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	QTY(LF)	5
60.12D08	LAYING 8-INCH DUCTILE IRON PIPE AND FITTINGS	QTY(LF)	17
60.13M0A24	FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24- INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	QTY(TON)	0.17
65.21PS	FURNISHING AND PLACING POLYETHYLENE SLEEVE	QTY(LF)	2.50
65.31FF	FURNISHING, DELIVERING AND PLACING FILTER FABRIC	QTY(SF)	40
65.71SG	FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR SCREENED BROKEN STONE BEDDING	QTY(CY)	0.09

Verizon **JAN 2023**

QED1059
DISTRIBUTION WATERMAIN WORK IN VARIOUS LOCATIONS, ETC.
Borough of Queens
Bid Item Accommodation Scope

4.02 AB-R
ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK
@ THE FOLLOWING LOCATIONS

	QTY(SY)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	12
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	3
4.02 AB-R TOTAL	**15**

4.02 CA
BINDER MIXTURE
@ THE FOLLOWING LOCATIONS

	QTY(TON)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	2
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	1
4.02 CA TOTAL	**3**

4.04 H
CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS, FOR TRENCH RESTORATION (HIGH EARLY STRENGTH)
@ THE FOLLOWING LOCATIONS

	QTY(CY)
SEC OF INTERSECTION OF 212TH STREET & HILLSIDE AVENUE	3
AS ENCOUNTERED & DIRECTED BY THE VERIZON FIELD REPRESENTATIVE	1
4.04 H TOTAL	**4**

6.02 AAN
UNCLASSIFIED EXCAVATION
@ THE FOLLOWING LOCATIONS

	QTY(CY)
SEC INT OF 212TH STREET & 89TH AVENUE	0.86
6.02 AAN TOTAL	**0.86**

60.11R608
FURNISHING AND DELIVERING 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)
@ THE FOLLOWING LOCATIONS

	QTY(LF)
SEC INT OF 212TH STREET & 89TH AVENUE	5
60.11R608 TOTAL	**5**

60.12D08
LAYING 8-INCH DUCTILE IRON PIPE AND FITTINGS
@ THE FOLLOWING LOCATIONS

	QTY(LF)
SEC INT OF 212TH STREET & 89TH AVENUE	17
60.12D08 TOTAL	**17**

60.13M0A24

FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24- INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS

@ THE FOLLOWING LOCATIONS

	QTY(TON)
SEC INT OF 212TH STREET & 89TH AVENUE	0.17

60.13M0A24	**TOTAL**	**0.17**

65.21PS

FURNISHING AND PLACING POLYETHYLENE SLEEVE

@ THE FOLLOWING LOCATIONS

	QTY(LF)
SEC INT OF 212TH STREET & 89TH AVENUE	2.50

65.21PS	**TOTAL**	**2.50**

65.31FF

FURNISHING, DELIVERING AND PLACING FILTER FABRIC

@ THE FOLLOWING LOCATIONS

	QTY(SF)
SEC INT OF 212TH STREET & 89TH AVENUE	40

65.31FF	**TOTAL**	**40**

65.71SG

FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR SCREENED BROKEN STONE BEDDING

@ THE FOLLOWING LOCATIONS

	QTY(CY)
SEC INT OF 212TH STREET & 9TH AVENUE	0.09

65.71SG	**TOTAL**	**0.09**

END OF JB-PAGES SECTION E
(NO FURTHER TEXT ON THIS PAGE)

SECTION F.
PRIVATE UTILITIES TEST PITS AND SKETCHES

verizon

SHEET NO. 1 OF 1

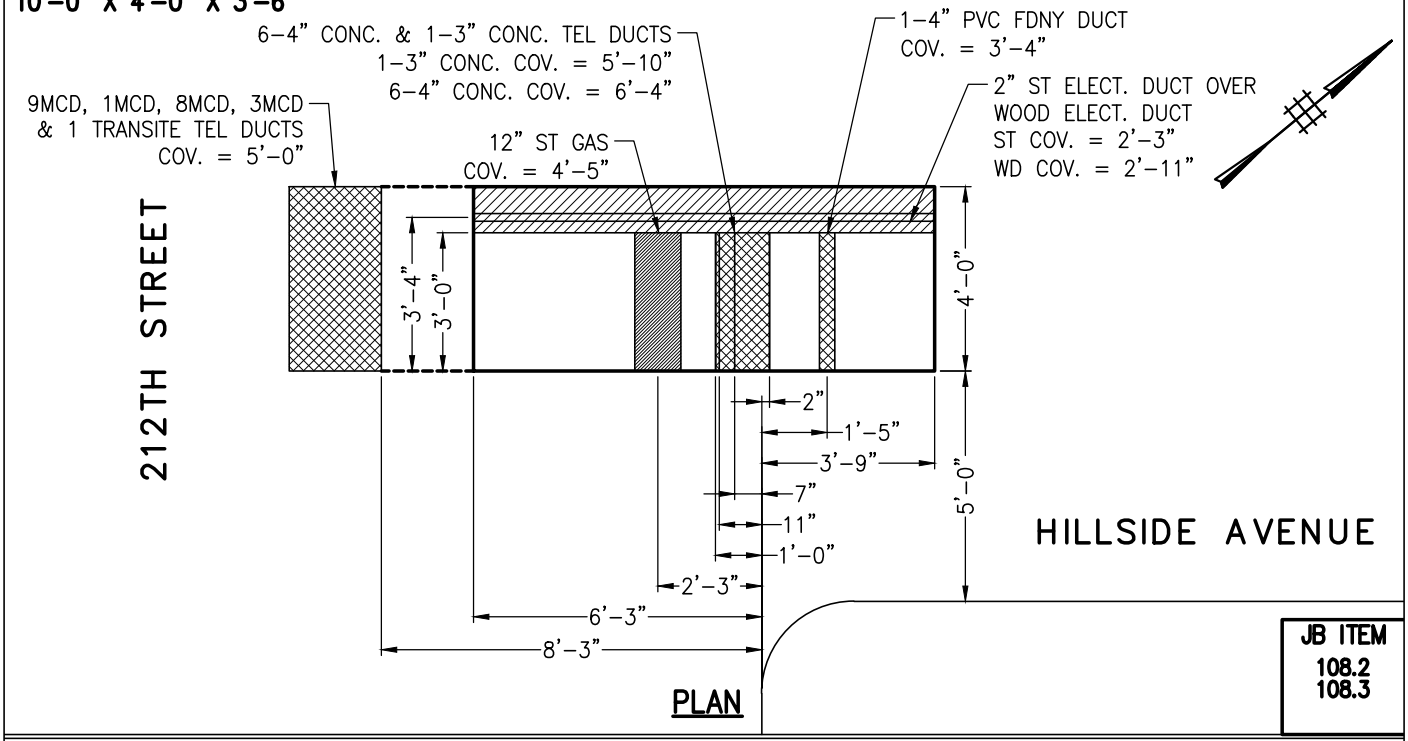
JOB: REPLACEMENT OF WATER MAINS PREPARED BY: HENRY READ DATE: 10/24/22

JOB NO: QED1059 CHECKED BY: ANDREW MATARAZZO DATE: 10/25/22

TEST PIT # 1 LOCATION: SOUTHEAST CORNER INTERSECTION OF 212TH STREET & HILLSIDE AVENUE, QUEENS

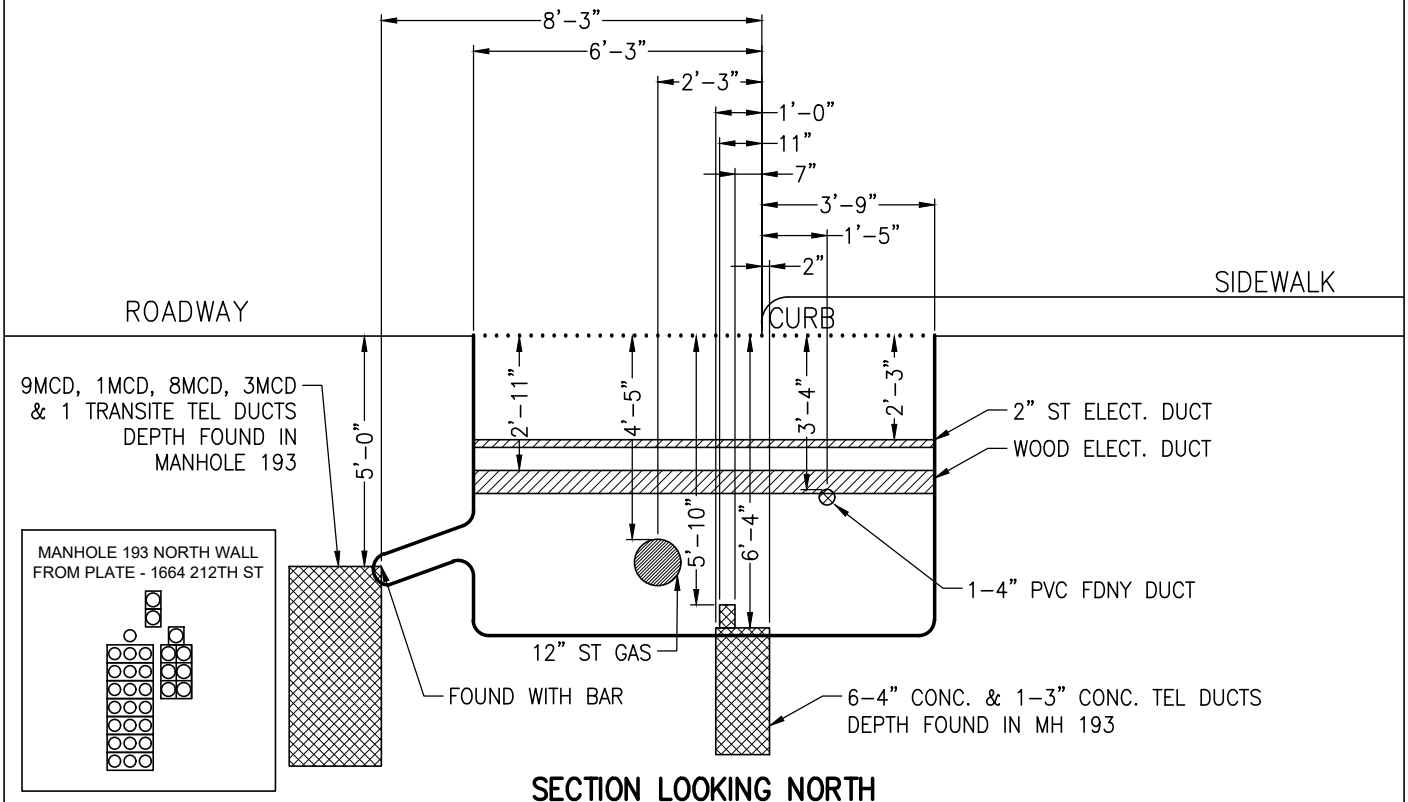
PURPOSE: LOCATE UTILITIES

TRENCH DIMENSIONS
10'-0" X 4'-0" X 3'-6"



PLAN

JB ITEM
108.2
108.3



SECTION LOOKING NORTH

verizon

SHEET NO. 1 OF 1

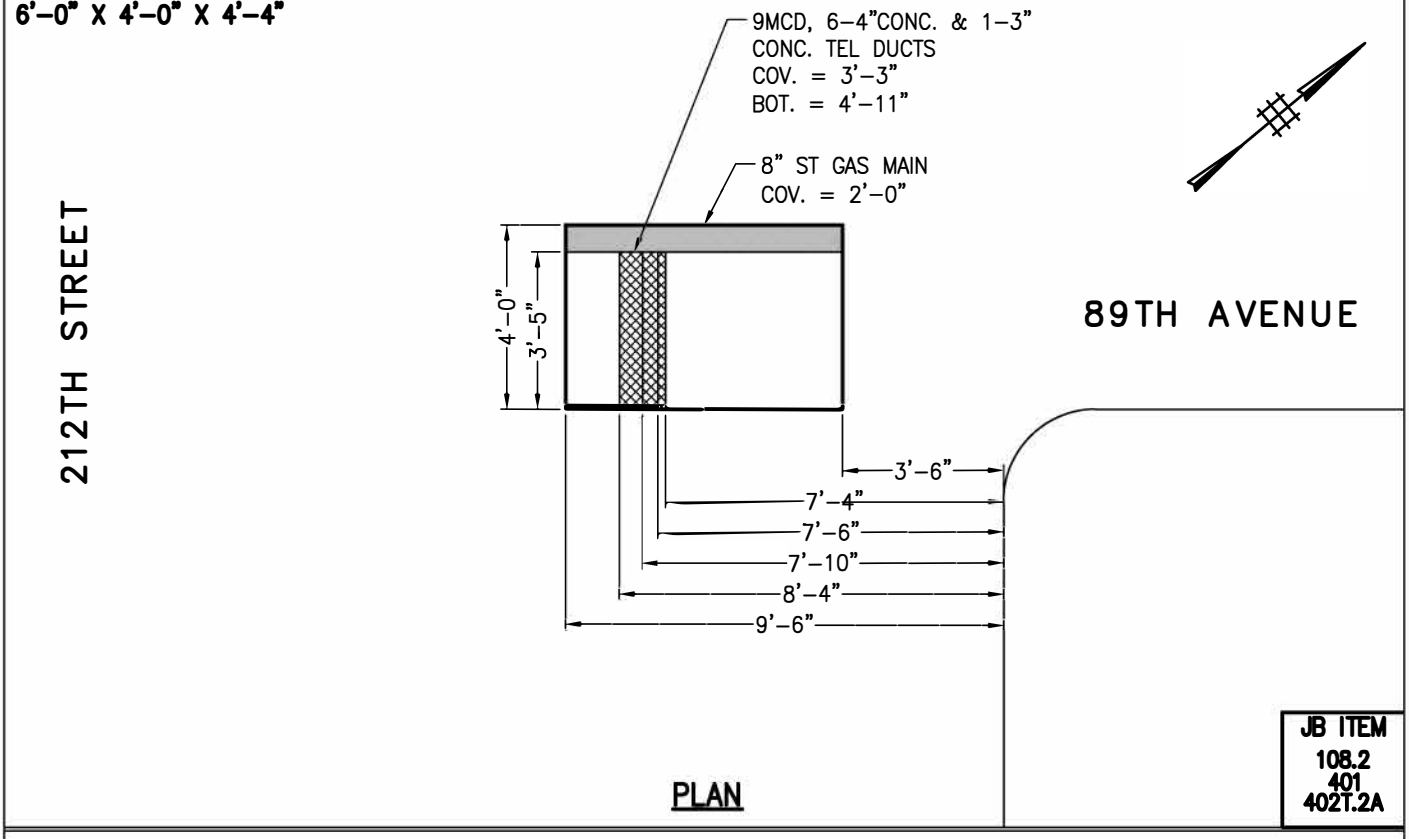
JOB: REPLACEMENT OF WATER MAINS PREPARED BY: HENRY READ DATE: 10/24/22

JOB NO: QED1059 CHECKED BY: ANDREW MATARAZZO DATE: 10/25/22

TEST PIT # 2 LOCATION: SOUTHEAST CORNER INTERSECTION OF 212TH STREET & 89TH AVENUE, QUEENS

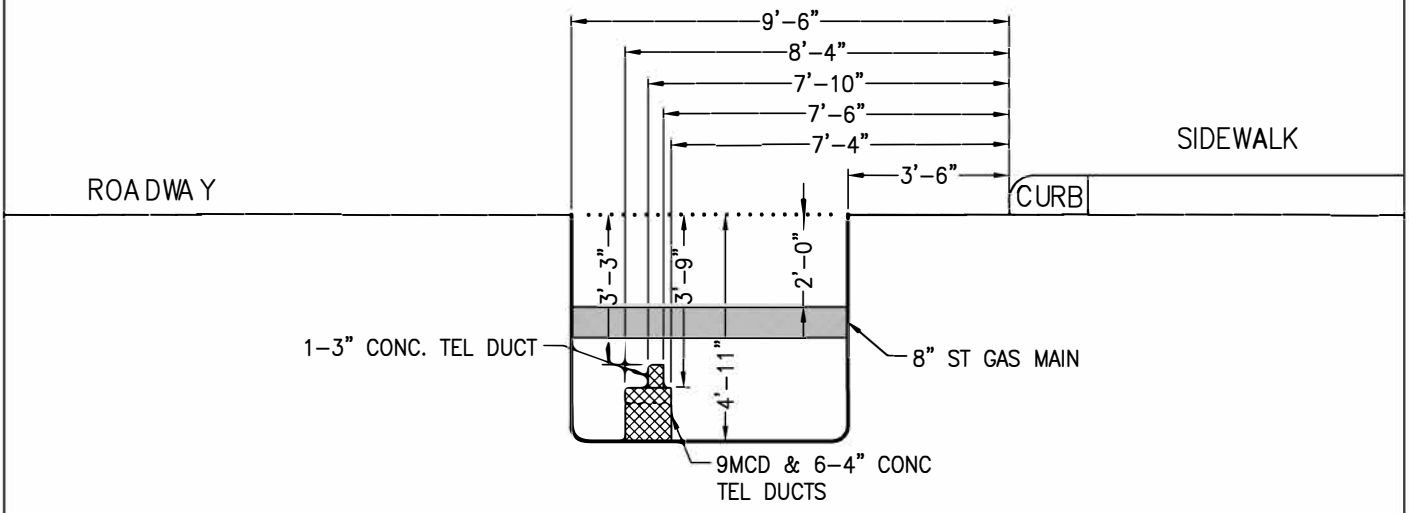
PURPOSE: LOCATE UTILITIES

TRENCH DIMENSIONS
6'–0" X 4'–0" X 4'–4"



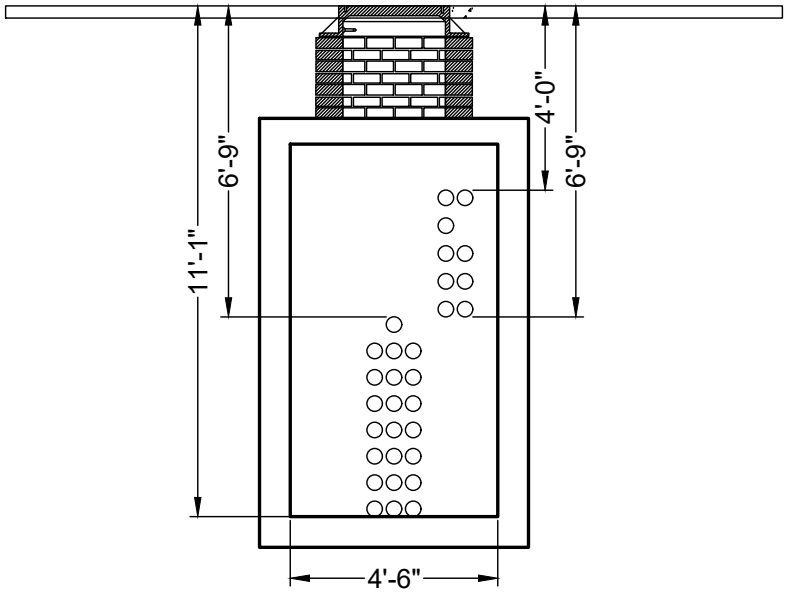
PLAN

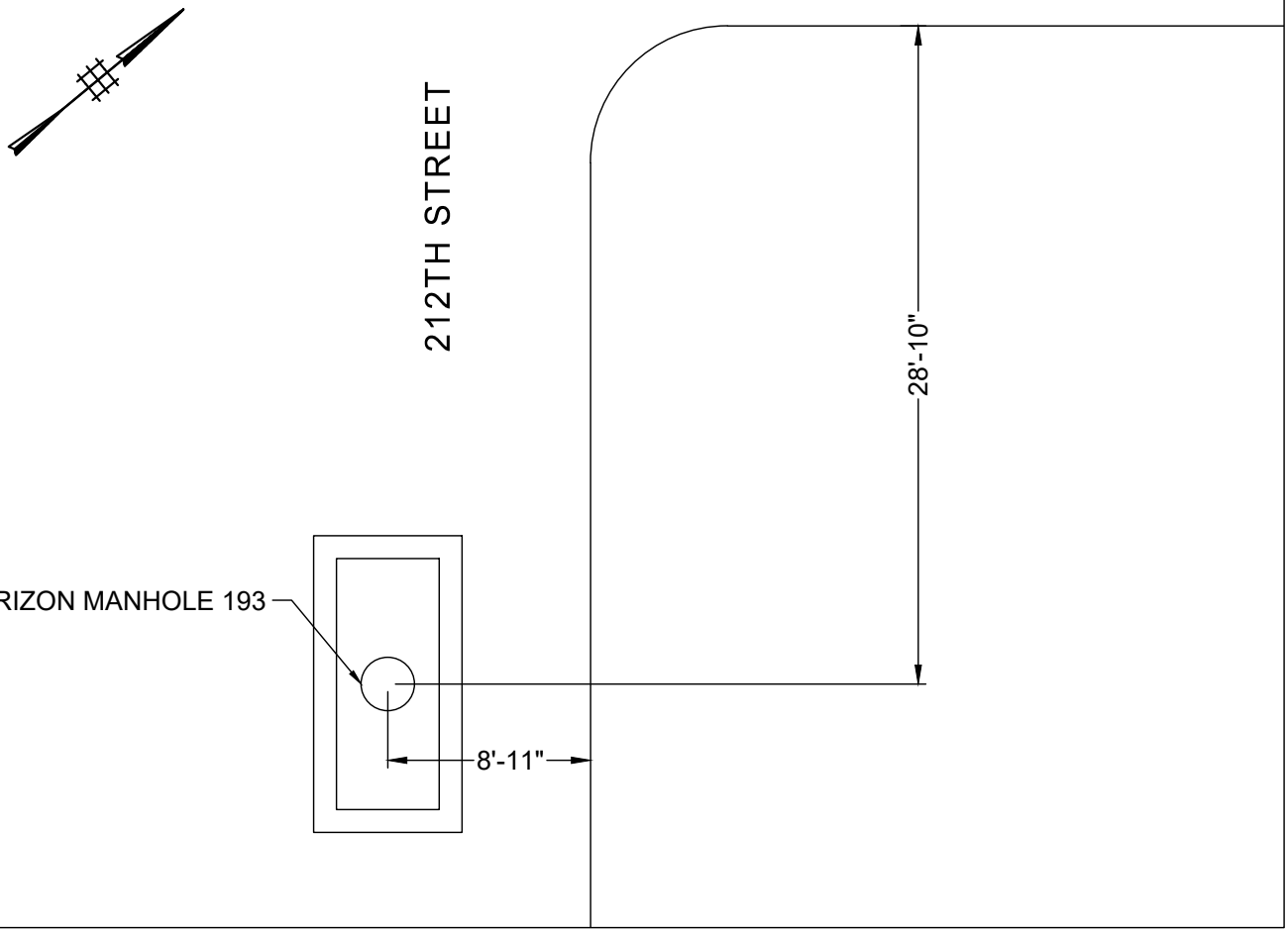
JB ITEM
108.2
401
402T.2A



SECTION LOOKING NORTH

MANHOLE 193 NORTH WALL
11'-0"x4'-6"x9'-6"





END OF JB-PAGES SECTION F
(NO FURTHER TEXT ON THIS PAGE)

SECTION G.
PRIVATE UTILITY DRAWING LIST
(SEE CONTRACT DRAWINGS)

UTILITY DRAWING LIST

CON EDISON		
DRAWING TITLE	**DRAWING NO.**	**NO. OF SHEETS**
GENERAL NOTES AND CONDITION FOR UTILITY WORK	JB-U1	1
CAPITAL PLANS. INSTALLATION OF NEW DUCTS AND SERVICE BOX	JB-U2 – U4	3
CONDUIT AND DUCT OCCUPANCY PLATES	JB-U5 – U15	11
LOW TENSION MAINS AND SERVICE PLATES	JB-U16 – U26	11
TOTAL		**26**

VERIZON		
DRAWING TITLE	**DRAWING NO.**	**NO. OF SHEETS**
VERIZON OVERHEAD MAINLINE PLANS	JB-U27 – U33	7
VERIZON CONDUIT UTILITY PLATES	JB-U34 – U39	6
TOTAL		**13**

Total number of contract drawings is 39, refer to contract drawings

END OF JB-PAGES SECTION G
(NO FURTHER TEXT ON THIS PAGE)

Department of Design and Construction

DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

VOLUME 3 OF 3

PROJECT ID: QED1059

REPLACEMENT OF DISTRIBUTION WATER MAINS IN VARIOUS LOCATIONS,ETC.

Together With All Work Incidental Thereto
BOROUGH OF QUEEN
CITY OF NEW YORK

_____

Contractor

Dated_____**, 20**_____
