DuPont Specialty Products USA, LLC
Experimental Station E322
200 Powder Mill Rd
Wilmington, DE 19803

February 16, 2022

Melissa Ferree
Engineer III
DNREC - Division of Waste and Hazardous Substances
Compliance and Permitting Section
89 Kings Highway
Dover, DE 19901

Dear Ms. Ferree:

DuPont Specialty Products USA, LLC (DuPont) is pleased to provide the attached Facility Waste Incinerator Closure Certification Report for the Experimental Station in Wilmington, Delaware. Please contact Mr. Bradley Berg at Bradley.A.Berg-1@dupont.com or 302-695-7810 with any questions.

Delaware State Permit for Hazardous Waste Storage Number HW04j22.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Vere Archibald
Site Manager
DuPont Experimental Station

AECOM

Facility Waste Incinerator Closure Certification Report

DE State Permit Number HW04j22
DuPont Experimental Station
200 Powder Mill Road
Wilmington, DE 19803

Prepared for:
DuPont Specialty Products USA, LLC

Submitted by:
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Project Number: 60633074
Date: February 2022

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1.0 Introduction

In 2020, the DuPont Experimental Station (site), located in Wilmington, Delaware (see Figure 1-1), elected to close the facility's hazardous waste incinerator (see Figure 1-2) and waste storage pads; Delaware Natural Resources and Environmental Control (DNREC) was notified in April 2020 of DuPont's intent to cease incinerator operations. Incinerator closure activities were conducted in accordance with 7 DE Admin Code 1302, Delaware's Regulation Governing Hazardous Waste (DRGHW) Subpart G Section 264.110 through 264.115, and the schedules and requirements specified in the Closure Plan (Permit Attachment II-6) included with the Site's Permit for Hazardous Waste Storage (State Permit Number HW04j22; DuPont, 2020).

On behalf of DuPont Specialty Products USA, LLC (DuPont), AECOM submits this report to document and certify that the facility incinerator was closed in accordance with the closure plan. A separate report was submitted to document and certify closure activities for the waste storage pads (AECOM, February 2021). The storage pad closure report was approved by DNREC on March 30, 2021 (see Appendix A).

This incinerator closure report presents the following information in the identified sections:

- Section 2 describes the pertinent background information associated with this project.
- Section 3 presents the project purpose and objectives.
- Section 4 describes incinerator closure activities performed and associated results.
- Section 5 discusses the evaluation of the results.
- Section 6 summarizes the conclusion and associated recommendations.
- Section 7 provides the owner and Delaware Professional Engineer (PE) certification in accordance with the Closure Plan and DRGHW Section 264.115.
- Section 8 lists the references cited in this report.

2.0 Background

This section presents the permit history associated with the Experimental Station Incinerator. In addition, the environmental history associated with the Experimental Station's Creek Road Area, which contains the facility incinerator, is summarized here.

2.1 Permit History of the Facility Waste Incinerator

The 150-acre [0.61 square kilometers (km^2)] campus-style Experimental Station, located in Wilmington, Delaware, serves as the primary research and development facility for DuPont. In 1980, the Experimental Station submitted to the United States Environmental Protection Agency (EPA) a Resource Conservation and Recovery Act (RCRA) Hazardous Waste Part A Permit Application; the subsequent RCRA Hazardous Waste Part B Permit application was submitted in 1983 for treatment of laboratory wastes. In 1985, the State of Delaware, Department of Natural Resources and Environmental Control (DNREC) issued a RCRA hazardous waste permit to DuPont for the Experimental Station.

This RCRA permitted Hazardous Waste Treatment facility, also known as the incinerator, operated from 1985 into 2020. The incinerator was located in the south/southeast section of the Experimental Station property between Creek Road and D Road (see Figure 2-1).

In April 2020, DuPont notified DNREC of its intent to cease operations. In July 2020, the DuPont Experimental Station "Permit for Hazardous Waste Storage" (State Permit Number HW04j22) was modified in preparation for closure; the permit modification was approved by DNREC on July 10, 2020. The closure activities to attain the incinerator and storage pad closure followed the "Closure Procedure" identified in "Attachment II-6 Closure Plan – Modification," which is included in the Site's Permit for Hazardous Waste Storage (DuPont, 2020).

The storage pad closure activities were initiated in late July 2020 and completed in November 2020. A storage pad closure report was submitted in February 2021. The storage pad closure report was approved by DNREC on March 30, 2021. The DNREC approval letter for the storage pad closure can be found in Appendix A.

The decommissioning and demolition activities and chronology for the incinerator are summarized in Figure 2-2. The decommissioning and demolition activities were initiated in October 2020. Hazardous demolition included the incinerator, associated air pollution control system, and waste chemical/solvent feed system. Non-hazardous waste demolition included building materials, structural steel, and concrete. All components of the incinerator, air pollution control system, and waste chemical/solvent feed system were removed by October 18, 2021. Non-hazardous demolition activities were completed on January 7, 2022.

2.2 Summary of Creek Road Environmental Investigation

As noted in Section 2.1, the facility incinerator is located adjacent to Creek Road. In the late 1980s through early 1990s, the Creek Road area underwent a RCRA Facility Investigation (RFI) due to the presence of soil and groundwater contamination in the area of the facility's Building E311 and the area of Creek Road and "C" Road.

Based on the Creek Road RFI, it was determined that volatile organic compounds (VOCs), semi-volatile compounds (SVOCs), and metals such as arsenic were present in

the soil associated with the Creek Road area. The primary source of the contaminants was determined to be the former burning area located near Building E311. The contaminants detected at the intersection of Creek Road and “C” Road was determined to be due to ash from the burning area that had been used as fill material.

3.0 Purpose and Objective

The purposes and objective of this report are as follows:

- Purpose: Review closure activities completed for the incinerator and the associated air pollution control and waste chemical/solvent feed container systems.
- Purpose: Present the results and conclusions for the incinerator areas soil samples.
- Objective: Obtain closure certification of the Experimental Station facility incinerator.

4.0 Closure Activities

In accordance with the modified Closure Plan (DuPont, 2020), the following activities were completed:

- On May 15, 2020, incinerator operation closure procedures were completed.
- On August 14, 2020, the last containers of waste were removed from the storage pads.
- From March 1, 2021 to March 8, 2021, the waste chemical/solvent feed container and associated feed lines and equipment were drained of residuals and disposed of off-site.
- From March 9, 2021 to June 1, 2021, refractory brick was removed and disposed of off-site.
- From October 5, 2020 to October 13,2021, all Incinerator and associated air pollution control systems were removed and disposed of in accordance with applicable regulations.
- On October 13, 2021, the Incinerator Area Soil Sampling Work Plan addendum was emailed to Melissa Ferree (DNREC); the work plan addendum was approved by DNREC on October 14, 2021.
- On October 22, 2021, incinerator area soil samples were collected and shipped to Eurofins Lancaster Laboratories and Test America Laboratories for analysis; soil samples were collected to characterize the shallow soils associated with the incinerator area.

In accordance with the Closure Plan (Section II-6.D), on December 14, 2021, the Site Environmental Manager inspected the work area and determined additional debris removal was required. On January 3, 2022, a contractor was mobilized and removed debris from work area. The area was reinspected on January 13, 2022 and determined to meet the Closure Plan Section II-6.D. In accordance with Section II-6.E of the Closure Plan, and DRGHW Section 264.115, certification of closure by DuPont and a Professional Engineer is provided in Section 7.

4.1 Facility Waste Incinerator Decommission and Demolition Details

Closure activities for the incinerator, associated air pollution control system, and waste chemical/solvent feed container system were completed in accordance with the procedures outlined Section II-6.A of the Closure Plan. A photographic log documenting closure activities is provided in Appendix B.

All components with exposure to the process stream were handled and disposed of as hazardous waste. All hazardous waste was sent to US Ecology's Bellville Michigan facility. A hazardous waste disposal log is provided in Appendix C. Non-hazardous waste, such as construction debris and scrap metal, were removed and disposed of in accordance with all local, state, and federal requirements.

4.1.1 Operation Closure Procedures

Operation closure procedures were completed prior to final operation of the incinerator, air pollution control system, and waste chemical/solvent feed system in May of 2020. Operation closure procedures were completed in accordance with Section II-6.A.1 and

are described below. Closure procedures were completed by incinerator staff prior to cessation of final operation to remove bulk hazardous waste from the system prior to demolition. The two waste streams targeted were remaining waste chemical/solvent in the container and feed lines as well as ash.

The incinerator system was operated to empty the remaining contents of the waste chemical/solvent feed container. The system continued operation, with feeds to both the main burner and after burner, using No. 2 fuel oil, in place of chemical/solvent feed, to flush the waste chemical/solvent feed container and associated feed lines.

Ash was removed from hoppers beneath the main combustion chamber, the spray dryer, and the baghouses. The resulting material was collected in roll off containers and disposed off-site in accordance with regulations.

4.1.2 Waste Chemical/Solvent Feed System

The waste chemical/solvent feed container and associated feed lines were inspected and disposed of in accordance with Section II-6.A.2 of the Closure Plan. Residuals resulting from the No 2 fuel oil flush were captured from waste chemical/solvent container drain plugs and low points on feed lines as required for off-site disposal.

4.1.3 Refractory Brick Removal

Refractory brick lining was removed from the incinerator, after burner, spray dryer, and cyclone from March 9, 2021 to June 1, 2021 in accordance with Section II-6.A.4. Negative air containment using high efficiency particulate air (HEPA) filtration air movers was established around personnel entry points and waste loading zones to retain waste within the cleanup area. Prior to refractory brick removal an overlaying ash layer was removed for off-site disposal using a high vac system. Refractory brick was removed using chipping guns and jack hammers. Waste brick was funneled to roll off containers for off-site disposal.

4.1.4 Incinerator, Air Pollution Control, and Associated Equipment Removal

Prior to removal of primary incinerator components, a hazardous material survey was conducted. Regulated materials, including mercury and oil containing equipment, were identified and collected for disposal in accordance with Section II-6.A.5. A radiological survey was completed in accordance with Nuclear Regulatory Commission (NRC) regulations for all process equipment and the surrounding area due to historical disposal of radioactive material. No readings were identified above background with the exception of a naturally occurring radiological component to the refractory brick. All levels were below acceptance criteria for the hazardous waste disposal facility.

All components of the incinerator and associated air pollution control system, including the neutralization agent silo were removed and disposed of in accordance with Section II-6.A.3 and Section II-6.A.6 of the Closure Plan.

A high vac system was used to remove residual soda ash from the neutralization agent silo. Residual soda ash was containerized and disposed of off-site. The empty neutralization agent silo was sized in place using heavy equipment and torches for recycling.

The remaining components including the incinerator, after burner, spray dryer, cyclone, absorber, quench/venturi, electro dynamic venturi (EDV), reheater, ID fan, and stack were generally mechanically disassembled and placed on flatbed trucks by crane for

off-site disposal. Larger components including portions of the incinerator, spray dryer, and absorber required sizing on-site prior to loading out for disposal.

4.1.5 Final Conditions and Inspection

Following completion of deconstruction the Site Environmental Manager inspected the area and determined that additional action was necessary in accordance with Section II-6.D. It was determined that debris existed in the work area that could further discharge solids to the Brandywine Creek or storm sewer. A contractor was mobilized on January 3, 2022 to remove remaining debris. The area was reinspected on January 13, 2022. It was determined that the area has been cleaned in accordance with Section II-6.A.7 of the Closure Plan.

4.1.6 Certification of Closure

In accordance with Section II-6.E of the Closure Plan, and DRGHW Section 264.115, certification of closure by DuPont and a Professional Engineer is provided in Section 7 of this report.

4.2 Site Environmental Inspections

DuPont and AECOM maintained an on-site presence during the complete duration of closure activities. Both DuPont and AECOM completed environmental inspections of the work area on a daily basis with an emphasis on identifying and preventing the migration of material outside of the work area to a storm sewer or the Brandywine River. Material migration was prevented by adhering to approved work plans and use of best management practices.

4.3 Incinerator Area Confirmation Soil Sampling

Confirmation soil sampling was performed in accordance with the following documents:

- Attachment II-6 Closure Plan – Modification (DuPont, 2020);
- Soil Sampling Work Plan for Closure of Waste Storage Pads A, B, G, 23, 24, 24-0, and the Facility Incinerator (AECOM, August 2020)
- Experimental Station – Thermal Waste Treatment Closure: Incinerator Area Soil Sampling Work Plan Addendum (AECOM, October 2021); this document is incinerator area specific and therefore has been included in Appendix D.

Soil sampling activities were initiated, and completed, on Friday, October 22, 2021. Six soil samples were collected from the six DNREC approved sample locations (see Figure 4--1). A summary of the sample collection methodology follows:

- Soil samples at each location were collected using a clean stainless-steel hand auger.
- Soil was collected from ground surface to a depth of 1 foot or refusal; which ever came first. The sample depth associated with each location are as follows:
  - Sample Location 1 (LOC-1): Collection Depth 0-9 inches (auger refusal)
  - Sample Location 2 (LOC-2): Collection Depth 0-9 inches (auger refusal)
  - Sample Location 3 (LOC-3): Collection Depth 0-9 inches (auger refusal)
  - Sample Location 4 (LOC-4): Collection Depth 0-1 foot

  - Sample Location 5 (LOC-5): Collection Depth 0-1 foot
  - Sample Location 6 (LOC-6): Collection Depth 0-1 foot
- The collected soil sample was transferred from the auger to a clean stainless steel bowl.
- Encore containers were filled with soil directly from the bowl; for all other laboratory containers clean stainless-steel spoons were used to transfer the soil sample from the bowl into the laboratory supplied containers.

Soil sample locations are identified in Figure 4-1. Soil sample lithologic descriptions can be found in Appendix E.

Except for the sample containers associated with the constituent furan (Cas No 110-00-9), the soil samples were placed in an iced cooler and transferred to a Eurofins Lancaster Laboratories courier for transport to Eurofins Lancaster Laboratories located in Lancaster PA. The soil sample containers associated with the constituent furan were placed in an iced cooler and shipped, via Federal Express, to Test America Laboratories in Savannah GA for analysis. The soil samples were analyzed for the target analyte list; the target analyte constituents can be found in Table 4-1.

Soil sample analytical results were screened against concentration-based closure performance standards (CPS). The CPS were defined as Environmental Protection Agency (EPA) Regional Screen Levels (RSL) for industrial soils. In the absence of a Regional Screening Level, the Method Detection Limit (MDL) was used. CPS for soil are listed in Table 4-1; the CPS in Table 4-1 have been updated to include the following:

- Applicable EPA RSL changes dated November 2021.
- Use of constituent specific criteria approved by DNREC (see Appendix A) and as identified in the work plan addendum (see Appendix D).

The incinerator area soil sampling analytical results are provided in Table 4-2. The Eurofins Lancaster Laboratories soil analytical report can be found in Appendix F. The furan analysis (samples sent to Test America Laboratories) was removed from the target analyte list; details regarding this removal are presented in Section 4.4.3.

4.4 Deviations from Work Plan and/or Closure Plan

This section documents deviations from both the Closure Plan and the approved work plans associated with the facility waste incinerator closure activities; both decommissioning/demolition and soil sampling.

4.4.1 Incinerator Closure Plan Deviations: Decommission and Demolition

As noted in Section 4.2 daily inspection of the work area were completed by DuPont and their representative, AECOM. Work plans were reviewed and approved prior to starting tasks. Adherence to these work plans and routine inspection allowed work to proceed in accordance with the Closure Plan.

4.4.2 Soil Sampling Deviations

Incinerator area soil sampling activities were performed in accordance with the documents identified in Section 4.3; no deviations were noted.

4.4.3 Target Analyte List Deviations

On November 17, 2021 DNREC approved removal of the constituent furan (110-00-9) from the Attachment II -6 Closure Plan – Modification target analyte list because commercial laboratories are not currently able to analyze for furan in soil. The DuPont letter requesting furan removal, and the associated DNREC approval, can be found in Appendix A.

4.4.4 Laboratory Analytical Results Deviations

The Analytical Data Quality Management (ADQM) Data Review (Appendix F), which includes the Data Verification Module (DVM) Narrative Report, is a summary of the samples collected, laboratory analyses performed, and associated quality control exceptions. The DVM is an automated internal review process used by AECOM to assist with the determination of laboratory data usability. The DVM report indicates that, for sample LOC-1, the non-detect results for pesticide constituents beta-BHC, delta-BHC, and endosulfan II were R qualified as unusable results during the data review process.

This qualifier was applied due to the LOC-1 matrix spike/matrix spike duplicate analysis having spike recovery values below 10% for the three identified constituents. The laboratory reported evidence of matrix interference in sample LOC-1, which was likely responsible for the low pesticide matrix spike recoveries.

The beta-BHC, delta-BHC, and endosulfan II results for all remaining incinerator area soil samples (LOC-2 through LOC-6) were either non-detect (most of the sample results), or the detected concentration was well below the Closure Performance Standard. No hazardous wastes were handled or stored in the LOC-1 area, so low or non-detect concentrations for this area would also be expected. Based on the low/non-detect concentrations in all remaining incinerator area soil samples and the absence of hazardous waste handling in the LOC-1 area, it can be concluded that, for beta-BHC, delta-BHC, and endosulfan II, the R qualifier associated with LOC-1 does not affect the data assessment.

The DVM Narrative Report also indicates that several analytical results were reported at estimated concentrations (J value) or estimated reporting limits (UJ value). However, these results, as well as all results not qualified in the DVM report, are acceptable for use as noted in the ADQM Data Review.

5.0 Evaluation of Results

5.1 Incinerator Closure: Decommissioning and Demolition

The decommissioning and demolition of the incinerator, associated air pollution control system, and the waste chemical/solvent feed system was completed in accordance with the closure procedures outlined in Section II-6.A of the Closure Plan as described in Section 4.1. All waste was contained during removal and taken off-site to an approved hazardous waste disposal facility. The decommission and demolition chronology associated with the incinerator components can be found in Figure 2.2. The resulting concrete pads and slabs have been swept free of debris and do not pose a risk of future discharge of material to the storm sewer or Brandywine River.

5.2 Site Environmental Inspections

Site environmental inspections of the work area were completed on a daily basis during work by both DuPont and their representative, AECOM as described in Section 4.2. The results of the environmental inspections determined that the work area did not discharge material to the storm sewer or Brandywine River during or following closure activities.

5.3 Soil Evaluation

Six surficial soil samples were collected from the area of the facility incinerator. Each soil sample was analyzed for the list of constituents identified in Table 4-1. Soil analytical results associated with the incinerator area were compared to the soil CPS values discussed in Section 4.3 and listed in Table 4-1; analytical results are listed in Table 4-2. Only one constituent, arsenic, was detected at concentrations above the CPS of 11 mg/kg; all other constituent concentrations were below CPS.

The sample locations containing an arsenic concentration above the CPS were as follows:

- Loc 1 at 37 mg/Kg
- Loc 3 at 44 mg/Kg
- Loc 6 at 82 mg/Kg

The following sample locations contained arsenic at concentrations below the CPS:

- Loc 2 at 4.3 mg/Kg
- Loc 4 at 3.0 mg/Kg
- Loc 5 and 5Dup at 6.4 and 8.3 mg/Kg respectively

Arsenic concentrations associated with the 3 soil samples that exceeded the arsenic CPS (11 mg/kg) ranged from 37 mg/kg to 82 mg/kg (see Table 4-2). Previous investigations associated with the Creek Road area concluded that the fill material used in the area was the source of the arsenic detected in soil samples. Previous investigations stated the following:

- The Creek Road Area, which contains the facility incinerator, was investigated as part of the 1990 RCRA Facility Investigation (RFI). One of the conclusions associated with the 1990 RFI was that some area fill material contained

contaminants such as arsenic; the highest arsenic soil concentration associated with the 1990 RFI was 18.4 mg/kg.

- The 2021 Facility Incinerator Waste Storage Pad Closure Report (AECOM February 2021) reached the same conclusion that higher arsenic concentrations in the incinerator area are associated with the fill material and not incinerator related activities.

To assess the risk associated with the arsenic exceedances detected within the incinerator area the U.S. Department of Energy (DOE) Risk Assessment Information System (RAIS) online risk calculator (https://rais.ornl.gov/) was applied to estimate potential risks associated with the arsenic soil concentration results. The results of the RAIS risk calculation are discussed in Section 5.4.

5.4 Risk Assessment Information System (RAIS) Risk Calculator

As noted in Section 5.3 the incinerator area soil results were compared to soil screening levels; arsenic concentrations associated with three of the six soil samples exceeded CPS. Therefore, a human health risk assessment (HHRA) was conducted to determine whether risk-based closure is possible for the site.

The Department on Natural Resources and Environmental Control, Remediation Section (DNREC-RS) recommends using the U.S. Department of Energy (DOE) Risk Assessment Information System (RAIS) on-line risk calculator available here https://rais.ornl.gov/ to estimate potential carcinogenic and noncarcinogenic risks (DNREC-RS, 2020 and DOE, 2021) during a HHRA.

EPA's ProUCL (Version 5.1) statistical software was used to derive a soil exposure point concentration (EPC) for arsenic that was inputted into the RAIS calculator to estimate the cancer risk and non-cancer hazards (EPA, 2016). A 95% upper confidence limit (UCL) of the mean concentration of 59.73 mg/kg was derived for arsenic. EPA (1989) risk assessment guidance recommends using the lower of the maximum detected concentration (i.e., 82 mg/kg) and the 95% UCL when estimating risk.

Two current and future worker scenarios are applicable to the site: outdoor worker and excavation worker. The outdoor worker is a full-time employee who performs maintenance activities (e.g., moderate digging and landscaping) for 8 hours a day for 25 years (EPA, 2014). An elevated soil ingestion rate (100 mg per day) is assumed. Soil-related exposure pathways include incidental ingestion, dermal contact, and inhalation of volatiles and fugitive dust (EPA, 2014 and DOE, 2021). Based on current and future land use and factoring in the very limited amount of soil exposed in the incinerator area, it is expected that the outdoor worker will not spend every day in the area and soil exposure will be limited. It is assumed that the outdoor worker will visit the former incinerator area once a week, which equals an exposure frequency (EF) of 50 days per year (assumes two weeks of vacation per year), to perform general maintenance or security checks.

The excavation worker scenario represents a short-term soil exposure, such as performing utility line maintenance and installation. The excavation worker's exposure is limited to an exposure frequency of 20 days out of 1 year (exposure duration). Because this receptor spends most of her/his time digging, the soil intake and contact rates are greater than the outdoor worker (EPA, 2014 and DOE, 2021). Soil-related exposure pathways include incidental ingestion, dermal contact, and inhalation of volatiles and fugitive dust (EPA, 2014 and DOE, 2021).

Inputs and results for the RAIS risk calculations are provided in Appendix G. The table below summarizes the cancer risk and non-cancer hazard results for the current and future outdoor worker and the excavation worker scenarios.

Receptor	Excess Lifetime Cancer Risk	Non-Cancer Hazard Index (HI)
Outdoor Worker	4E-06	0.02
Excavation Worker	2E-07	0.02

In accordance with 40 Code of Federal Regulations (CFR) 300.430, carcinogenic risk within the EPA risk range of 1E-06 to 1E-04 may be considered acceptable. Risk levels that are less than one excess cancer in one million people (1×10^{-6}) are generally considered minimal while cancer risks greater than one excess cancer in ten thousand people (1×10^{-4}) generally are considered significant (i.e., a cumulative excess lifetime cancer risk, ELCR, level of 1×10^{-4} is typically used as the remediation “trigger” for a site; EPA, 1991). For this risk evaluation, a target cumulative cancer risk level of 1×10^{-5} (1E-05) and a target non-carcinogenic hazard index (HI) of 1 were used in accordance with DNREC-RS HHRA guidance (DNREC, 2020).

As shown in table above, the cumulative ELCR and HI results for the outdoor worker and excavation worker are all below the DNREC-RS target ELCR level of 1×10^{-5} (1E-05) and a target non-carcinogenic HI of 1. Adverse health effects from exposure to soil are not likely for the outdoor worker and excavation worker.

6.0 Summary

Based on the evaluation of the results obtained and the activities performed that were presented in Sections 4.0 and 5.0, the following summarizes the certification of closure by component:

- Operation Closure Procedures: Certification for Closure has been met:
  - Operation closure procedures were completed in accordance with Section II-6.A.1; waste chemical/solvent feed container was emptied and flushed; ash was removed, the material collected was disposed of off-site.
- Waste Chemical/Solvent Feed System: Certification for Closure has been met:
  - Feed container and feed lines were inspected and removed in accordance with Section II-6.A.2 of the Closure Plan and disposed of off-site.
- Refractory Brick Removal- Certification for Closure has been met:
  - Refractory brick was removed in accordance with Section II-6.A.4 of the Closure Plan and disposed of off-site.
- Incinerator, Air Pollution Control, and Associated Equipment Removal: Certification for Closure has been met:
  - Regulated materials, including mercury and oil containing equipment, were identified and collected for disposal in accordance with Section II-6.A.5.
  - A radiological survey was completed in accordance with Nuclear Regulatory Commission (NRC) regulations for all process equipment and the surrounding area.
  - All remaining components of the incinerator and associated air pollution control system, including the neutralization agent silo were removed and disposed of in accordance with Sections II-6.A.3 and Section II-6.A.6 of the Closure Plan.
- Incinerator Area Soils: Certification for Closure has been met:
  - Of the constituents analyzed, only one constituent, arsenic, was detected at concentrations above the CPS; all other constituent concentrations were below CPS.
  - Arsenic concentrations detected in incinerator-area soils are related to historic fill material used. Based on the RAIS calculations, it was concluded that the concentrations are not a risk; results were below the DNREC cancer risk and non-cancer hazard threshold for the outdoor worker and the excavation worker.
- Final Conditions and Inspection: Certification for Closure has been met:
  - On January 13, 2022, it was determined that the area had been cleaned in accordance with Section II-6.A.7 of the Closure Plan.

7.0 Certification of Closure

In accordance with DRGHW Section 264.115, the underlying individuals certify the facility waste incinerator, associated air pollution control system, and associated waste chemical/solvent feed container system were closed in accordance with the approved closure plan (modified on July 12, 2020), the approved alternate closure performance standards request (dated January 12, 2021; furan removal was approved on November 17, 2021), the approved Incinerator Area Soil Sampling Work Plan Addendum (dated October 13, 2021), and the results/conclusions presented in this closure report.

Owner/Operator

Bradley A. Berg

2/15/2022

Bradley Berg
DuPont Environmental Specialist
Experimental Station

Date

Registered Professional Engineer

2/15/2022

Joseph M. McCarthy, PE
AECOM
Delaware Professional Engineer Registration Number 22587

Date

8.0 References

AECOM. October 2021. Experimental Station – Thermal Waste Treatment Closure: Incinerator Area Soil Sampling Work Plan Addendum (updated October 14, 2021). Letter to Melissa Ferree (DNREC) from Nicole DiMondi (DuPont)

AECOM. February 2021. Facility Incinerator Waste Storage Pads A, B, C, D, E, F, G, 23, 24, and 24-0 Closure Report. DE State Permit Number HW04j22. DuPont Experimental Station. 200 Powder Mill Road. Wilmington DE 19803.

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Tables

Table 4-1
Soil Sample Laboratory Analytes and Associated Closure Performance Standards
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

Parameter Name	CAS #	Closure Performance Standards (CPS)[1]
1,1,1,2-Tetrachloroethane	630-20-6	8.8 MG/KG
1,1,1-Trichloroethane	71-55-6	36000 MG/KG
1,1,2,2-Tetrachloroethane	79-34-5	2.7 MG/KG
1,1,2-Trichloroethane	79-00-5	5 MG/KG
1,1,2-Trichlorotrifluoroethane	76-13-1	28000 MG/KG
1,1-Dichloroethane	75-34-3	16 MG/KG
1,1-Dichloroethene	75-35-4	1000 MG/KG
1,2,4,5-Tetrachlorobenzene	95-94-3	35 MG/KG
1,2,4-Trichlorobenzene	120-82-1	110 MG/KG
1,2-Dibromo-3-Chloropropane	96-12-8	0.06 MG/KG
1,2-Dibromoethane (EDB)	106-93-4	0.16 MG/KG
1,2-Dichlorobenzene	95-50-1	9300 MG/KG
1,2-Dichloroethane	107-06-2	2 MG/KG
1,2-Dichloropropane	78-87-5	11 MG/KG
1,3-Dichlorobenzene	541-73-1	MDL
1,4-Dichlorobenzene	106-46-7	11 MG/KG
1,4-Dioxane	123-91-1	24 MG/KG
2,4,5-Trichlorophenol	95-95-4	82000 MG/KG
2,4,6-Trichlorophenol	88-06-2	210 MG/KG
2,4-Dichlorophenol	120-83-2	2500 MG/KG
2,4-Dichlorophenoxyacetic Acid	94-75-7	9600 MG/KG
2,4-Dimethylphenol	105-67-9	16000 MG/KG
2,4-Dinitrophenol	51-28-5	1600 MG/KG
2,4-Dinitrotoluene	121-14-2	7.4 MG/KG
2,6-Dichlorophenol	87-65-0	MDL
2,6-Dinitrotoluene	606-20-2	1.5 MG/KG
2-Acetylaminofluorene	53-96-3	0.6(**) MG/KG
2-Chloronaphthalene	91-58-7	60000 MG/KG
2-Chlorophenol	95-57-8	5800 MG/KG
2-Methylphenol (O-Cresol)	95-48-7	41000 MG/KG
3-Methylcholanthrene	56-49-5	0.1(**) MG/KG
4,4'-DDD	72-54-8	9.6 MG/KG
4,4'-DDE	72-55-9	9.3 MG/KG
4,4'-DDT	50-29-3	8.5 MG/KG
Chlorobenzenamine)	101-14-4	23 MG/KG
4-Bromophenyl Phenyl Ether	101-55-3	MDL
4-Chloro-3-Methylphenol	59-50-7	82000 MG/KG
4-Chloroaniline	106-47-8	11 MG/KG
4-Methylphenol (P-Cresol)	106-44-5	16000 MG/KG
4-Nitroaniline	100-01-6	110 MG/KG
4-Nitrophenol	100-02-7	MDL
5-Nitro-Ortho-Toluidine	99-55-8	260 MG/KG
Acetone	67-64-1	1100000 MG/KG
Acetophenone	98-86-2	120000.00 MG/KG
Acrylonitrile	107-13-1	1.1 MG/KG
Alpha Chlordane	5103-71-9	7.7(*) MG/KG
Alpha-BHC	319-84-6	0.36 MG/KG
Amenable Cyanide	n.a.	150(*) MG/KG
Aniline	62-53-3	400 MG/KG
Anthracene	120-12-7	230000 MG/KG
Arsenic	7440-38-2	11(**) MG/KG
Barium	7440-39-3	220000.00 MG/KG
Benzene	71-43-2	5.1 MG/KG
Benzo(A)Anthracene	56-55-3	21 MG/KG
Benzo[A]Pyrene	50-32-8	2.1 MG/KG
beta-BHC	319-85-7	1.3 MG/KG
bis(2-Chloroisopropyl)ether/ bis(2-Chloro-1-Methylethyl)ether***	39638-32-9	MDL
Bis(2-Chloroethoxy)Methane	111-91-1	2500 MG/KG
Bis(2-Chloroethyl)Ether	111-44-4	1 MG/KG
Bis(2-Ethylhexyl)Phthalate	117-81-7	160 MG/KG
Bromoform	75-25-2	86 MG/KG
Butyl Benzyl Phthalate	85-68-7	1200 MG/KG
Cadmium	7440-43-9	100 MG/KG
Calcium	7440-70-2	2500000(^) MG/KG
Carbaryl	63-25-2	82000.00 MG/KG
Carbofuran	1563-66-2	4100.00 MG/KG
Carbon Disulfide	75-15-0	3500 MG/KG
Carbon Tetrachloride	56-23-5	2.9 MG/KG

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Parameter Name	CAS #	Closure Performance Standards (CPS)[1]
Chlordane	57-74-9	7.7(*) MG/KG
Chlorobenzene	108-90-7	1300 MG/KG
Chloroform	67-66-3	1.4 MG/KG
Chromium	7440-47-3	214(**) MG/KG
Chrysene	218-01-9	2100 MG/KG
cis-1,3-Dichloropropene	10061-01-5	MDL
Cyanide	57-12-5	150 MG/KG
delta-BHC	319-86-8	1.3(*) MG/KG
Dibenz(A,H)Anthracene	53-70-3	2.1 MG/KG
Dichlorodifluoromethane	75-71-8	370 MG/KG
Diethyl Ether	60-29-7	230000 MG/KG
Diethyl Phthalate	84-66-2	660000 MG/KG
Dimethyl Phthalate	131-11-3	660000(*) MG/KG
Di-N-Butyl Phthalate	84-74-2	82000 MG/KG
Endosulfan I	959-98-8	7000(*) MG/KG
Endosulfan II	33213-65-9	7000(*) MG/KG
Endosulfan Sulfate	1031-07-8	4900 MG/KG
Endrin	72-20-8	250 MG/KG
Ethyl Acetate	141-78-6	2600 MG/KG
Ethyl Chloride	75-00-3	23000 MG/KG
Ethyl Methacrylate	97-63-2	7600 MG/KG
Ethylbenzene	100-41-4	25 MG/KG
Fluoranthene	206-44-0	30000 MG/KG
Gamma Chlordane	5103-74-2	7.7(*) MG/KG
Heptachlor	76-44-8	0.63 MG/KG
Heptachlor Epoxide	1024-57-3	0.33 MG/KG
Hexachlorobenzene	118-74-1	0.96 MG/KG
Hexachlorobutadiene	87-68-3	5.3 MG/KG
Hexachlorocyclopentadiene	77-47-4	7.5 MG/KG
Hexachloroethane	67-72-1	8 MG/KG
Hexachloropropylene	1888-71-7	MDL
Indeno (1,2,3-CD) Pyrene	193-39-5	21 MG/KG
Iodomethane	74-88-4	MDL
Isobutyl Alcohol	78-83-1	350000 MG/KG
Isosafrole	120-58-1	MDL
Lead	7439-92-1	800 MG/KG
Lindane	58-89-9	2.5 MG/KG
Mercury	7439-97-6	46 MG/KG
Methacrylonitrile	126-98-7	100 MG/KG
Methanol	67-56-1	1200000 MG/KG
Methapyrilene	91-80-5	MDL
Methiocarb	2032-65-7	MDL
Methomyl	16752-77-5	21000 MG/KG
Methoxychlor	72-43-5	4100 MG/KG
Methyl Bromide	74-83-9	30 MG/KG
Methyl Chloride	74-87-3	460 MG/KG
Methyl Ethyl Ketone	78-93-3	190000 MG/KG
Methyl Isobutyl Ketone	108-10-1	140000 MG/KG
Methyl Methacrylate	80-62-6	19000 MG/KG
Methylene Bromide	74-95-3	99 MG/KG
Methylene Chloride	75-09-2	1000 MG/KG
Naphthalene	91-20-3	17 MG/KG
N-Butanol	71-36-3	120000.00 MG/KG
N-Dioctyl Phthalate	117-84-0	8200 MG/KG
Nickel	7440-02-0	22000 MG/KG
Nitrobenzene	98-95-3	22 MG/KG
N-Nitrosodiethylamine	55-18-5	0.015(**) MG/KG
N-Nitroso-Di-N-Butylamine	924-16-3	0.46(**) MG/KG
N-Nitrosodi-N-Propylamine	621-64-7	0.33 MG/KG
N-Nitrosopiperidine	100-75-4	0.24 MG/KG
N-Nitrosopyrrolidine	930-55-2	1.1 MG/KG
Oxamyl	23135-22-0	21000 MG/KG
Pentachlorobenzene	608-93-5	930 MG/KG
Pentachloroethane	76-01-7	36 MG/KG
Pentachloronitrobenzene	82-68-8	13 MG/KG
Pentachlorophenol	87-86-5	4 MG/KG
Phenacetin	62-44-2	1000 MG/KG
Phenanthrene	85-01-8	230000(*) MG/KG

Table 4-1
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DuPont Experimental Station
Wilmington Delaware

Parameter Name	CAS #	Closure Performance Standards (CPS)[1]
Phenol	108-95-2	250000 MG/KG
Pronamide	23950-58-5	62000 MG/KG
Pyrene	129-00-0	23000 MG/KG
Pyridine	110-86-1	1200 MG/KG
Safrole	94-59-7	10 MG/KG
Selenium	7782-49-2	5800 MG/KG
Silver	7440-22-4	5800 MG/KG
Silvex	93-72-1	6600 MG/KG
Sum Endosulfan I + Endosulfan II		7000(*) MG/KG
Tetrachloroethene	127-18-4	100 MG/KG
Toluene	108-88-3	47000 MG/KG
Toxaphene	8001-35-2	2.1 MG/KG
trans-1,2-Dichloroethene	156-60-5	23000 MG/KG
trans-1,3-Dichloropropene	10061-02-6	MDL
Trichloroethene	79-01-6	6 MG/KG
Trichlorofluoromethane	75-69-4	350000 MG/KG
Vinyl Chloride	75-01-4	1.7 MG/KG
Xylenes	1330-20-7	2500 MG/KG
Dioxins / Furan(2)		
Hexachlorodibenzo-p-dioxin, Mixture	34465-46-8	0.00047 MG/KG
TCDD, 2,3,7,8-	1746-01-6	0.000022 MG/KG
Dibenzofuran	132-64-9	1000 MG/KG
Furan^^(removed from program)	110-00-9	1000 MG/KG
Tetrahydrofuran	109-99-9	94000 MG/KG

1 - CPS = EPA Industrial Risk Screening Level (RSL: November 2020 Industrial Soil Regional Screening Levels (RSLs) target cancer risk of 1E-06 and target hazard quotient of 1) . Where RSL values are not available the Method Detection Limit (MDL) will be used.

2 - Dioxin and Furan analysis are associated with the Incinerator Area soils only.

*Per DNREC approval in letter dated January 14, 2021, the below identified Surrogate Constituent Industrial RSLs have been applied as the CPS for the original constituent. Cyanide RSL was approved as a surrogate for amenable cyanide in the DNREC comment letter dated 2-9-2021

Original Constituent	CAS#	Surrogate Constituent	CAS#	Surrogate Industrial RSL (mg/kg) (a)
Dimethyl phthalate	131-11-3	Diethyl phthalate	84-66-2	660,000
Phenanthrene	85-01-8	Anthracene	120-12-7	230,000
Alpha Chlordane	5103-71-9	Chlordane (technical)	12789-03-6	7.7
Chlordane (analytical)	57-74-9	Chlordane (technical)	12789-03-6	7.7
Amenable Cyanide	NA	Cyanide	57-12-5	150
delta-BHC	319-86-8	beta-BHC	319-85-7	1.3
Endosulfan I	959-98-8	Endosulfan(b)	115-29-7	7,000
Endosulfan II	33213-65-9	Endosulfan(b)	115-29-7	7,000
Gamma Chlordane	5103-74-2	Chlordane (technical)	12789-03-6	7.7

(a) November 2020 Industrial Soil Regional Screening Levels (RSLs) that are protective of a target cancer risk of 1E-06 and target hazard quotient of 1.

(b) Surrogate constituent Endosulfan RSL to be compared against the sum of Endosulfan I + Endosulfan II analytical results per DNREC approval in letter dated January 14, 2021.

** Per DNREC Approval in letter dated January 14, 2021: The Delaware Hazardous Substance Cleanup Act criteria for Chromium (214 mg/kg) and Arsenic (11 mg/kg) is used in place of the RLS CPS for Chromium and Arsenic.

***Bis(2-Chloro-1-Methylethyl) Ether and bis (2-Chloroisopropyl)ether co-elute and cannot be reported separetely via the 8270 GC/MS analysis

^ Per DNREC Approval in letter dated January 14, 2021, a Recommended Daily Allowance (RDA) based value will be used as the Calcium CPS

^^ Furan analysis removed from the parameter list. Commercial laboratories currently do not analyze for Furan. DNREC approved removel of this constuent on 11-17-2021.

Table 4-2
Incinerator Area Soil Sample Analytical Results
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

				Location ID	TWT-LOC-1	TWT-LOC-2	TWT-LOC-3	TWT-LOC-4	TWT-LOC-5	TWT-LOC-5	TWT-LOC-6
				Field Sample ID	EXP-TWT-LOC-1	EXP-TWT-LOC-2	EXP-TWT-LOC-3	EXP-TWT-LOC-4	EXP-TWT-LOC-5-D	EXP-TWT-LOC-5	EXP-TWT-LOC-6
				Date Sampled	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021
				Sample Purpose	FS	FS	FS	FS	DUP	FS	FS
				Start Depth - End Depth	0 - 0.75	0 - 0.75	0 - 0.75	0 - 1	0 - 1	0 - 1	0 - 1
Parameter Name	**Analytical Method**	**Filtered**	**Report Units**	**EPA_SL_2021_11_IndSoil**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**
1,1,1,2-Tetrachloroethane	8260C	N	MG/KG	8.8 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,1,1-Trichloroethane	8260C	N	MG/KG	36000 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
1,1,2,2-Tetrachloroethane	8260C	N	MG/KG	2.7 MG/KG	<0.00044	<0.00042	<0.00035	<0.00042	<0.00037	<0.00036	<0.00046
1,1,2-Trichloroethane	8260C	N	MG/KG	5 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,1,2-Trichlorotrifluoroethane	8260C	N	MG/KG	28000 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
1,1-Dichloroethane	8260C	N	MG/KG	16 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,1-Dichloroethene	8260C	N	MG/KG	1000 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,2-Dibromo-3-Chloropropane	8260C	N	MG/KG	0.064 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,2-Dibromoethane (EDB)	8011	N	MG/KG	0.16 MG/KG	<0.00024	<0.00022	<0.00023	<0.00025 UJ	<0.00025	<0.00025	<0.00023
1,2-Dibromoethane (EDB)	8260C	N	MG/KG	0.16 MG/KG	<0.00044	<0.00042	<0.00035	<0.00042	<0.00037	<0.00036	<0.00046
1,2-Dichlorobenzene	8270D	N	MG/KG	9300 MG/KG	**0.041 J**	**0.039 J**	<0.019	<0.02	<0.02	<0.02	<0.019
1,2-Dichloroethane	8260C	N	MG/KG	2 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
1,2-Dichloropropane	8260C	N	MG/KG	11 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
1,3-Dichlorobenzene	8270D	N	MG/KG	MDL	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
1,4-Dichlorobenzene	8270D	N	MG/KG	11 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
Acetone	8260C	N	MG/KG	1100000 MG/KG	<0.0065	<0.0063	<0.0053	**0.0080 J**	<0.0055	<0.0053	<0.0069
Acrylonitrile	8260C	N	MG/KG	1.1 MG/KG	<0.00087	<0.00083	<0.00070	<0.00085	<0.00074	<0.00071	<0.00091
Benzene	8260C	N	MG/KG	5.1 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Bromoform	8260C	N	MG/KG	86 MG/KG	<0.0054	<0.0052	<0.0044	<0.0053	<0.0046	<0.0044	<0.0057
Carbon Disulfide	8260C	N	MG/KG	3500 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
Carbon Tetrachloride	8260C	N	MG/KG	2.9 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Chlorobenzene	8260C	N	MG/KG	1300 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Chloroform	8260C	N	MG/KG	1.4 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	**0.0012 J**
cis-1,3-Dichloropropene	8260C	N	MG/KG	MDL	<0.00044	<0.00042	<0.00035	<0.00042	<0.00037	<0.00036	<0.00046
Dichlorodifluoromethane	8260C	N	MG/KG	370 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
Diethyl Ether	8260C	N	MG/KG	230000 MG/KG	<0.0011	<0.0010	<0.00088	<0.0011	<0.00092	<0.00089	<0.0011
Ethyl Acetate	8260C	N	MG/KG	2600 MG/KG	<0.0011	<0.0010	<0.00088	<0.0011	<0.00092	<0.00089	<0.0011
Ethyl Chloride	8260C	N	MG/KG	23000 MG/KG	<0.0011	<0.0010	<0.00088	<0.0011	<0.00092	<0.00089	<0.0011
Ethyl Methacrylate	8260C	N	MG/KG	7600 MG/KG	<0.0011	<0.0010	<0.00088	<0.0011	<0.00092	<0.00089	<0.0011
Ethylbenzene	8260C	N	MG/KG	25 MG/KG	<0.00044	<0.00042	<0.00035	<0.00042	<0.00037	<0.00036	<0.00046
Iodomethane	8260C	N	MG/KG	MDL	<0.00044	<0.00042	<0.00035	<0.00042	<0.00037	<0.00036	<0.00046
Isobutyl Alcohol	8015B	N	MG/KG	350000 MG/KG	<0.2	<0.19	<0.2	<0.2	<0.21	<0.2	<0.19
Methacrylonitrile	8260C	N	MG/KG	100 MG/KG	<0.0087	<0.0083	<0.0070	<0.0085	<0.0074	<0.0071	<0.0091
Methanol	8015B	N	MG/KG	1200000 MG/KG	<0.24	<0.22	<0.23	**0.42 J**	<0.24	<0.24	<0.23
Methyl Bromide	8260C	N	MG/KG	30 MG/KG	<0.00076	<0.00073	<0.00062	<0.00074	<0.00064	<0.00062	<0.00080
Methyl Chloride	8260C	N	MG/KG	460 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
Methyl Ethyl Ketone	8260C	N	MG/KG	190000 MG/KG	<0.0022	<0.0021	<0.0018	<0.0021	<0.0018	<0.0018	<0.0023
Methyl Isobutyl Ketone	8260C	N	MG/KG	140000 MG/KG	<0.0011	<0.0010	<0.00088	<0.0011	<0.00092	<0.00089	<0.0011
Methyl Methacrylate	8260C	N	MG/KG	19000 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Methylene Bromide	8260C	N	MG/KG	99 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Methylene Chloride	8260C	N	MG/KG	1000 MG/KG	<0.0022	<0.0021	<0.0018	<0.0021	<0.0018	<0.0018	<0.0023
N-Butanol	8015B	N	MG/KG	120000 MG/KG	<0.24	<0.22	<0.23	<0.24	<0.24	<0.24	<0.23
Pentachloroethane	8260C	N	MG/KG	36 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Tetrachloroethene	8260C	N	MG/KG	100 MG/KG	<0.00054	<0.00052	**0.00073 J**	<0.00053	<0.00046	<0.00044	**0.0016 J**
Tetrahydrofuran	8260C	N	MG/KG	95000 MG/KG	<0.0011	<0.0010	<0.00088	**0.0012 J**	<0.00092	<0.00089	<0.0011
Toluene	8260C	N	MG/KG	47000 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
trans-1,2-Dichloroethene	8260C	N	MG/KG	300 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
trans-1,3-Dichloropropene	8260C	N	MG/KG	MDL	<0.00054	<0.00052	<0.00044	<0.00053	<0.00046	<0.00044	<0.00057
Trichloroethene	8260C	N	MG/KG	6 MG/KG	<0.00054	<0.00052	<0.00044	<0.00053	**0.00074 J**	**0.0020 J**	<0.00057
Trichlorofluoromethane	8260C	N	MG/KG	350000 MG/KG	<0.00076	<0.00073	<0.00062	<0.00074	<0.00064	<0.00062	<0.00080

Table 4-2
Incinerator Area Soil Sample Analytical Results
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

				Location ID	TWT-LOC-1	TWT-LOC-2	TWT-LOC-3	TWT-LOC-4	TWT-LOC-5	TWT-LOC-5	TWT-LOC-6
				Field Sample ID	EXP-TWT-LOC-1	EXP-TWT-LOC-2	EXP-TWT-LOC-3	EXP-TWT-LOC-4	EXP-TWT-LOC-5-D	EXP-TWT-LOC-5	EXP-TWT-LOC-6
				Date Sampled	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021
				Sample Purpose	FS	FS	FS	FS	DUP	FS	FS
				Start Depth - End Depth	0 - 0.75	0 - 0.75	0 - 0.75	0 - 1	0 - 1	0 - 1	0 - 1
Parameter Name	**Analytical Method**	**Filtered**	**Report Units**	**EPA_SL_2021_11_IndSoil**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**
Vinyl Chloride	8260C	N	MG/KG	1.7 MG/KG	<0.00065	<0.00063	<0.00053	<0.00064	<0.00055	<0.00053	<0.00069
Xylenes	8260C	N	MG/KG	2500 MG/KG	<0.0015	<0.0015	<0.0012	<0.0015	<0.0013	<0.0012	<0.0016
1,2,4,5-Tetrachlorobenzene	8270D	N	MG/KG	35 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
1,2,4-Trichlorobenzene	8260C	N	MG/KG	110 MG/KG	<0.0054	<0.0052	<0.0044	<0.0053	<0.0046	<0.0044	<0.0057
1,2,4-Trichlorobenzene	8270D	N	MG/KG	110 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
1,4-Dioxane	8260C	N	MG/KG	24 MG/KG	<0.04	<0.039	<0.033	<0.039	<0.034	<0.033	<0.042
1,4-Dioxane	8270D SIM	N	MG/KG	24 MG/KG	<0.016	<0.0015	<0.0015	<0.0016	<0.0016	<0.0016	<0.0015
2,4,5-Trichlorophenol	8270D	N	MG/KG	82000 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
2,4,6-Trichlorophenol	8270D	N	MG/KG	210 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
2,4-Dichlorophenol	8270D	N	MG/KG	2500 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
2,4-Dimethylphenol	8270D	N	MG/KG	16000 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
2,4-Dinitrophenol	8270D	N	MG/KG	1600 MG/KG	<0.2	<0.18	<0.19	<0.2	<0.2	<0.2	<0.19
2,4-Dinitrotoluene	8270D	N	MG/KG	7.4 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
2,6-Dichlorophenol	8270D	N	MG/KG	MDL	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
2,6-Dinitrotoluene	8270D	N	MG/KG	1.5 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
2-Acetylaminofluorene	8270D	N	MG/KG	0.6 MG/KG	<0.12	<0.11	<0.11	<0.12	<0.12	<0.12	<0.11
2-Chloronaphthalene	8270D	N	MG/KG	60000 MG/KG	<0.016	<0.015	<0.015	<0.016	<0.016	<0.016	<0.015
2-Chlorophenol	8270D	N	MG/KG	5800 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
2-Methylphenol (o-Cresol)	8270D	N	MG/KG	41000 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
3-Methylcholanthrene	8270D	N	MG/KG	0.1 MG/KG	<0.06	<0.055	<0.057	<0.059	<0.06	<0.059	<0.056
4,4'-Methylenebis-(2-Chlorobenzenamine)	8270D	N	MG/KG	23 MG/KG	<0.2	<0.18	<0.19	<0.2	<0.2	<0.2	<0.19
4-Bromophenyl Phenyl Ether	8270D	N	MG/KG	MDL	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
4-Chloro-3-Methylphenol	8270D	N	MG/KG	82000 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
4-Chloroaniline	8270D	N	MG/KG	11 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
4-Methylphenol (p-Cresol)	8270D	N	MG/KG	16000 MG/KG	**0.044 J**	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
4-Nitroaniline	8270D	N	MG/KG	110 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
4-Nitrophenol	8270D	N	MG/KG	MDL	<0.2	<0.18	<0.19	<0.2	<0.2	<0.2	<0.19
5-Nitro-Ortho-Toluidine	8270D	N	MG/KG	260 MG/KG	<0.2	<0.18	<0.19	<0.2	<0.2	<0.2	<0.19
Acetophenone	8270D	N	MG/KG	120000 MG/KG	<0.02	**0.022 J**	<0.019	<0.02	**0.03 J**	<0.02	<0.019
Aniline	8270D	N	MG/KG	400 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
Anthracene	8270D	N	MG/KG	230000 MG/KG	**0.028**	**0.012 J**	**0.067**	<0.0040	**0.098**	**0.059**	**0.039**
Benzo(A)Anthracene	8270D	N	MG/KG	21 MG/KG	**0.14**	**0.047**	**0.62**	**0.0069 J**	**0.33 J**	**0.17 J**	**0.16**
Benzo(A)Pyrene	8270D	N	MG/KG	2.1 MG/KG	**0.16**	**0.032**	**0.73**	**0.0072 J**	**0.35**	**0.25**	**0.19**
Bis(2-Chloro-1-Methylethyl) Ether[(1)]	8270D	N	MG/KG	47000 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
Bis(2-Chloroethoxy)Methane	8270D	N	MG/KG	2500 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
Bis(2-Chloroethyl)Ether	8270D	N	MG/KG	1 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
Bis(2-Ethylhexyl)Phthalate	8270D	N	MG/KG	160 MG/KG	**0.083 J**	**0.19**	**0.19**	<0.079	<0.08	<0.078	**0.2**
Butyl Benzyl Phthalate	8270D	N	MG/KG	1200 MG/KG	<0.079	<0.074	**1.1**	<0.079	<0.08	<0.078	<0.075
Chrysene	8270D	N	MG/KG	2100 MG/KG	**0.18**	**0.067**	**0.67**	**0.0077 J**	**0.35 J**	**0.18 J**	**0.2**
Dibenz(A,H)Anthracene	8270D	N	MG/KG	2.1 MG/KG	**0.034**	<0.0074	**0.13**	<0.0079	**0.061**	**0.061**	<0.0075
Dibenzofuran	8270D	N	MG/KG	1200 MG/KG	<0.02	**0.025 J**	<0.019	<0.02	<0.02	<0.02	<0.019
Diethyl Phthalate	8270D	N	MG/KG	660000 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Dimethyl Phthalate*	8270D	N	MG/KG	660000 MG/KG	<0.079	<0.074	**0.13 J**	<0.079	<0.08	<0.078	<0.075
Di-N-Butyl Phthalate	8270D	N	MG/KG	82000 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Fluoranthene	8270D	N	MG/KG	30000 MG/KG	**0.28**	**0.12**	**0.86**	**0.0085 J**	**0.86**	**0.52**	**0.31**
Hexachlorobenzene	8270D	N	MG/KG	0.96 MG/KG	<0.0079	<0.0074	<0.0076	<0.0079	<0.0080	<0.0078	<0.0075
Hexachlorobutadiene	8270D	N	MG/KG	5.3 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
Hexachlorocyclopentadiene	8270D	N	MG/KG	7.5 MG/KG	<0.2	<0.18	<0.19	<0.2	<0.2	<0.2	<0.19
Hexachloroethane	8270D	N	MG/KG	8 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
Hexachloropropylene	8270D	N	MG/KG	MDL	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075

Table 4-2
Incinerator Area Soil Sample Analytical Results
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

				Location ID	**TWT-LOC-1**	**TWT-LOC-2**	**TWT-LOC-3**	**TWT-LOC-4**	**TWT-LOC-5**	**TWT-LOC-5**	**TWT-LOC-6**
				Field Sample ID	**EXP-TWT-LOC-1**	**EXP-TWT-LOC-2**	**EXP-TWT-LOC-3**	**EXP-TWT-LOC-4**	**EXP-TWT-LOC-5-D**	**EXP-TWT-LOC-5**	**EXP-TWT-LOC-6**
				Date Sampled	**10/22/2021**	**10/22/2021**	**10/22/2021**	**10/22/2021**	**10/22/2021**	**10/22/2021**	**10/22/2021**
				Sample Purpose	**FS**	**FS**	**FS**	**FS**	**DUP**	**FS**	**FS**
				Start Depth - End Depth	**0 - 0.75**	**0 - 0.75**	**0 - 0.75**	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**
Parameter Name	**Analytical Method**	**Filtered**	**Report Units**	**EPA_SL_2021_11_IndSoil**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**
Indeno(1,2,3-CD)Pyrene	8270D	N	MG/KG	21 MG/KG	**0.1**	**0.034**	**0.4**	<0.0047	**0.25**	**0.18**	**0.14**
Isosafrole	8270D	N	MG/KG	MDL	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Methapyrilene	8270D	N	MG/KG	MDL	<2	<1.8	<1.9	<2	<2	<2	<1.9
Naphthalene	8270D	N	MG/KG	8.6 MG/KG	**0.0087 J**	**0.033**	**0.0085 J**	<0.0079	**0.028**	**0.024**	**0.05**
N-Dioctyl Phthalate	8270D	N	MG/KG	8200 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Nitrobenzene	8270D	N	MG/KG	22 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
N-Nitrosodiethylamine**	8270D	N	MG/KG	0.015 MG/KG**	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
N-Nitroso-Di-N-Butylamine	8270D	N	MG/KG	0.46 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
N-Nitrosodi-N-Propylamine	8270D	N	MG/KG	0.33 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
N-Nitrosopiperidine	8270D	N	MG/KG	0.24 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
N-Nitrosopyrrolidine	8270D	N	MG/KG	1.1 MG/KG	<0.04	<0.037	<0.038	<0.04	<0.04	<0.039	<0.037
Pentachlorobenzene	8270D	N	MG/KG	930 MG/KG	<0.024	<0.022	<0.023	<0.024	<0.024	<0.024	<0.022
Pentachloronitrobenzene	8270D	N	MG/KG	13 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Pentachlorophenol	8270D	N	MG/KG	4 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Phenacetin	8270D	N	MG/KG	1000 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Phenanthrene*	8270D	N	MG/KG	230000 MG/KG	**0.15**	**0.099**	**0.3**	**0.0048 J**	**0.41**	**0.28**	**0.17**
Phenol	8270D	N	MG/KG	250000 MG/KG	<0.02	<0.018	<0.019	<0.02	<0.02	<0.02	<0.019
Pyrene	8270D	N	MG/KG	23000 MG/KG	**0.25**	**0.095**	**0.84**	**0.0097 J**	**1.1**	**0.75**	**0.38**
Pyridine	8270D	N	MG/KG	1200 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Safrole	8270D	N	MG/KG	10 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
4,4'-DDD	8081B	N	MG/KG	9.6 MG/KG	<0.0020	<0.0072	<0.0075	<0.0020	<0.0079	<0.0039	**0.0069 J**
4,4'-DDE	8081B	N	MG/KG	9.3 MG/KG	**0.0035 J**	<0.0072	**0.012 J**	<0.0020	**0.067**	**0.081**	**0.018 J**
4,4'-DDT	8081B	N	MG/KG	8.5 MG/KG	<0.0047	**0.037**	**0.19**	<0.0047	**0.04 J**	**0.056**	**0.04**
Alpha Chlordane	8081B	N	MG/KG	500 MG/KG	<0.0010	<0.0037	<0.0038	<0.0010	<0.0041	<0.0020	<0.0019
Alpha-BHC	8081B	N	MG/KG	0.36 MG/KG	<0.0010	<0.0037	<0.0038	<0.0010	<0.0041	<0.0020	<0.0019
beta-BHC	8081B	N	MG/KG	1.3 MG/KG	<0.0026 R	<0.0096	<0.01	<0.0026	<0.011	<0.0051	<0.0049
Carbaryl	8318	N	MG/KG	82000 MG/KG	<0.06	<0.056	<0.057	<0.06	<0.06	<0.059	<0.056
Carbofuran	8318	N	MG/KG	4100 MG/KG	<0.06	<0.056	<0.057	<0.06	<0.06	<0.059	<0.056
Chlordane*	8081B	N	MG/KG	7.7 MG/KG	<0.024	<0.088	**0.22 J**	<0.024	<0.096	<0.047	<0.045
delta-BHC*	8081B	N	MG/KG	1.3 MG/KG	<0.0027 R	<0.0099	<0.01	<0.0027	<0.011	<0.0053	<0.0051
Endosulfan	8081B	N	MG/KG	7000 MG/KG	<0.0013	<0.0048	**0.041**	<0.0013	<0.0053	<0.0026	<0.0025
Endosulfan I*	8081B	N	MG/KG	7000 MG/KG	<0.0013 UJ	<0.0048	<0.0050	<0.0013	<0.0053	<0.0026	<0.0025
Endosulfan II*	8081B	N	MG/KG	7000 MG/KG	<0.0066 R	<0.024	**0.041 J**	<0.0065	<0.026	<0.013	<0.012
Endosulfan Sulfate	8081B	N	MG/KG	4900 MG/KG	<0.0020	<0.0072	<0.0075	<0.0020	<0.0079	<0.0039	<0.0037
Endrin	8081B	N	MG/KG	250 MG/KG	<0.0041	<0.015	<0.015	<0.0040	<0.016	<0.0079	<0.0076
Gamma Chlordane	8081B	N	MG/KG	500 MG/KG	<0.0015	<0.0055	**0.014 J**	<0.0015	<0.0060	<0.0029	<0.0028
Heptachlor	8081B	N	MG/KG	0.63 MG/KG	<0.0019	<0.0068	<0.0070	<0.0018	<0.0075	<0.0036	<0.0035
Heptachlor Epoxide	8081B	N	MG/KG	0.33 MG/KG	<0.0010	<0.0037	<0.0038	<0.0010	<0.0041	<0.0020	<0.0019
Lindane	8081B	N	MG/KG	2.5 MG/KG	<0.0013 UJ	<0.0046	<0.0048	<0.0012	<0.0050	<0.0025	<0.0024
Methomyl	8318	N	MG/KG	21000 MG/KG	<0.06	<0.056	<0.057	<0.06	<0.06	<0.059	<0.056
Methoxychlor	8081B	N	MG/KG	4100 MG/KG	<0.011	<0.039	<0.041	<0.011	<0.043	<0.021	<0.02
Toxaphene	8081B	N	MG/KG	2.1 MG/KG	<0.084	<0.31	<0.32	<0.083	<0.34	<0.16	<0.16
2,4-Dichlorophenoxyacetic Acid	8151A	N	MG/KG	9600 MG/KG	<0.014	<0.013 UJ	<0.014	<0.014	<0.014 UJ	<0.014	<0.013 UJ
Methiocarb	8318	N	MG/KG	MDL	<0.06	<0.056	<0.057	<0.06	<0.06	<0.059	<0.056

Table 4-2
Incinerator Area Soil Sample Analytical Results
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

				Location ID	TWT-LOC-1	TWT-LOC-2	TWT-LOC-3	TWT-LOC-4	TWT-LOC-5	TWT-LOC-5	TWT-LOC-6
				Field Sample ID	EXP-TWT-LOC-1	EXP-TWT-LOC-2	EXP-TWT-LOC-3	EXP-TWT-LOC-4	EXP-TWT-LOC-5-D	EXP-TWT-LOC-5	EXP-TWT-LOC-6
				Date Sampled	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021
				Sample Purpose	FS	FS	FS	FS	DUP	FS	FS
				Start Depth - End Depth	0 - 0.75	0 - 0.75	0 - 0.75	0 - 1	0 - 1	0 - 1	0 - 1
Parameter Name	**Analytical Method**	**Filtered**	**Report Units**	**EPA_SL_2021_11_IndSoil**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**	**Report Result**
Oxamyl	8318	N	MG/KG	21000 MG/KG	<0.06	<0.056	<0.057	<0.06	<0.06	<0.059	<0.056
Pronamide	8270D	N	MG/KG	62000 MG/KG	<0.079	<0.074	<0.076	<0.079	<0.08	<0.078	<0.075
Silvex	8151A	N	MG/KG	6600 MG/KG	<0.00089	**0.0018 J**	<0.00085	<0.00089	<0.00089 UJ	<0.00088	<0.00084 UJ
2,3,7,8-TCDD	8290A	N	MG/KG	0.000022 MG/KG	**0.0000072**	**0.0000031**	**0.000002**	<0.000000049	**0.0000025 J**	<0.000000035	**0.00000092 J**
Total HXCDD	8290A	N	MG/KG	0.00047 MG/KG	**0.00018**	**0.00011**	**0.00014**	**0.0000059**	**0.00014**	**0.000096**	**0.000047**
Arsenic***	6020A	N	MG/KG	11 MG/KG	**37**	**4.3**	**44**	**3.0**	**8.3**	**6.4**	**82**
Barium	6020A	N	MG/KG	220000 MG/KG	**110**	**140**	**180**	**24**	**110**	**87**	**110**
Cadmium	6020A	N	MG/KG	100 MG/KG	**0.78**	**0.60**	**5.4**	**0.30**	**0.92**	**1.1**	**2.1**
Calcium^	6020A	N	MG/KG	2500000 MG/KG	**36000**	**1900**	**5200**	**15000**	**1900**	**1200**	**44000**
Chromium***	6020A	N	MG/KG	214 MG/KG	**42**	**44**	**210**	**19**	**45**	**32**	**49**
Lead	6020A	N	MG/KG	800 MG/KG	**32**	**19**	**210**	**17**	**140 J**	**77 J**	**170**
Mercury	7471A	N	MG/KG	46 MG/KG	**0.38**	**0.64**	**5.0**	**0.064 J**	**6.6 J**	**2.5 J**	**7.0**
Nickel	6020A	N	MG/KG	22000 MG/KG	**25**	**25**	**290**	**8.8**	**26**	**22**	**40**
Selenium	6020A	N	MG/KG	5800 MG/KG	**0.57**	**1.1**	**0.90**	**0.17 J**	**0.41 J**	**0.37**	**0.38 J**
Silver	6020A	N	MG/KG	5800 MG/KG	**1.1**	**0.89**	**8.9**	**0.15**	**0.81**	**0.58**	**0.98**
Amenable Cyanide^^	9012A	N	MG/KG	150 MG/KG	**0.25 J**	<0.20	<0.21	<0.22	<0.22	<0.21	**0.25 J**
Cyanide	9012A	N	MG/KG	150 MG/KG	**0.25 J**	<0.2	<0.19	<0.22	<0.21	<0.17	**0.25 J**

EPA_SL_2021_11_IndSoil = November 2020 Industrial Soil Regional Screening Levels (RSLs) that are protective of a target cancer risk of 1E-06 and target hazard quotient of 1.

##	Yellow shading indicates detected result exceeds the criteria
##	Gray shading indicates non-detect exceeds the criteria

total HXCDD = "Hexachlorodibenzo-p-dioxin, Mixture" from EPA RSL Table.
Bolded value = Detected value
< = Non-detect value
MG/KG = Milligrams per kilogram
J = Report result is an estimate
UJ = Not detected. Reporting limit may not be accurate or precise
R = Unusable result. Analyte may or may not be present in the sample.
(1) Bis(2-Chloro-1-Methylethyl) Ether and bis (2-Chloroisopropyl)ether co-elute and cannot be reported separetely via the 8270 GC/MS analysis
*Per DNREC approval in letter dated January 14, 2021, the below identified Surrogate Constituent Industrial RSLs have been applied as the CPS for the original constituent.

Original Constituent	CAS#	Surrogate Constituent	CAS#	Surrogate Industrial RSL (mg/kg) [(a)]
Dimethyl phthalate	131-11-3	Diethyl phthalate	84-66-2	660,000
Phenanthrene	85-01-8	Anthracene	120-12-7	230,000
Alpha Chlordane^^^	5103-71-9	~~Chlordane (technical)~~	~~12789-03-6~~	~~7.7~~
Chlordane (analytical)	57-74-9	Chlordane (technical)	12789-03-6	7.7
delta-BHC	319-86-8	beta-BHC	319-85-7	1.3
Endosulfan I	959-98-8	Endosulfan[(b)]	115-29-7	7,000
Endosulfan II	33213-65-9	Endosulfan[(b)]	115-29-7	7,000
Gamma Chlordane^^^	5103-74-2	~~Chlordane (technical)~~	~~12789-03-6~~	~~7.7~~

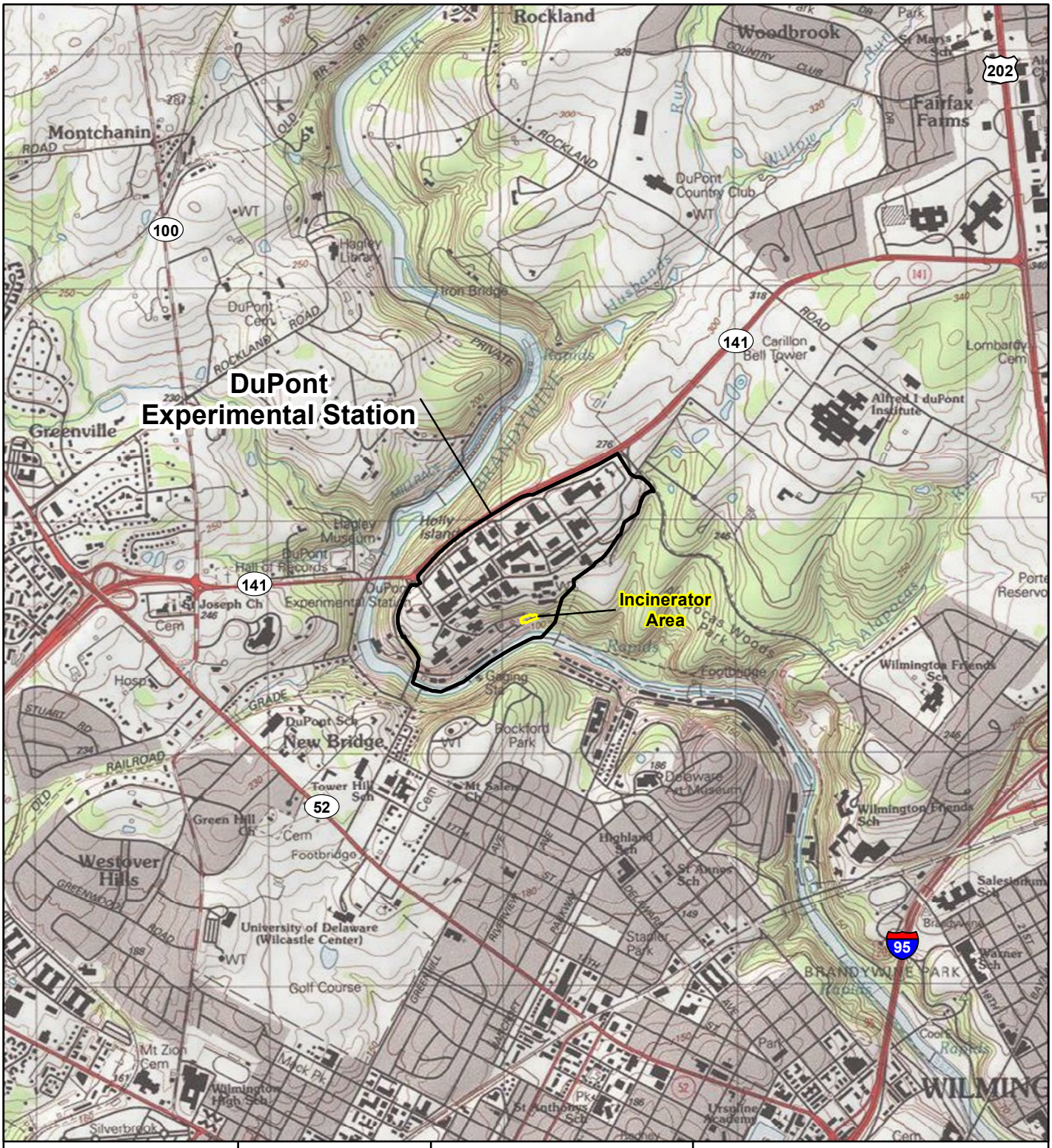
(a) November 2020 Industrial Soil Regional Screening Levels (RSLs) that are protective of a target cancer risk of 1E-06 and target hazard quotient of 1.
(b) Surrogate constituent Endosulfan RSL to be compared against the sum of Endosulfan I + Endosulfan II analytical results per DNREC approval in letter dated January 14, 2021.

**Per DNREC Approval in letter dated January 14, 2021: If analytical results are all non-detect, but some or all method detection limits are above CPS, since all results are non-detect there is no evidence to indicate the constituent is present therefore the constituent is not a concern.

*** Per DNREC Approval in letter dated January 14, 2021: The Delaware Hazardous Substance Cleanup Act criteria for Chromium (214 mg/kg) and Arsenic (11 mg/kg) is used in place of the RLS CPS for Chromium and Arsenic (criteria based on Screening Level Table Guidance last updated November 2021).

^ Per DNREC Approval in letter dated January 14, 2021, a Recommended Daily Allowance (RDA) based value will be used as the Calcium CPS
^^ Per the DNREC comment letter dated February 9, 2021, DNREC approved the use of the cyanide RSL for soil as a surrogate for amenable cyanide in soil.
^^^ RSL for Alpha Chlordane added to EPA RSL Summary Table in May 2021.

Figures



LEGEND

Property Boundary

USA Topo Maps Source: USGS 1:24K Topographic Map; Copyright:© 2013 National Geographic Society, i-cubed

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Feet
1 inch = 2,000 feet

MAP FORMATTED FOR "A" (8.5" X 11") SIZE SHEET.
TEXT SCALE NOT VALID FOR DIFFERENT PAGE SIZE.

SITE LOCATION MAP

Facility Waste Incinerator Closure Certification Report
Delaware State Permit Number HW04j22
DuPont Experimental Station
Wilmington, DE

TASK NUMBER: PHS403	PROJECT NUMBER: 60633074
DESIGNED BY: C. DUFFY	DATE: 1/18/2022
DRAWN BY: C. DUFFY	FIGURE NUMBER: 1-1
DATA QUALITY CHECK BY: P. CHEN	

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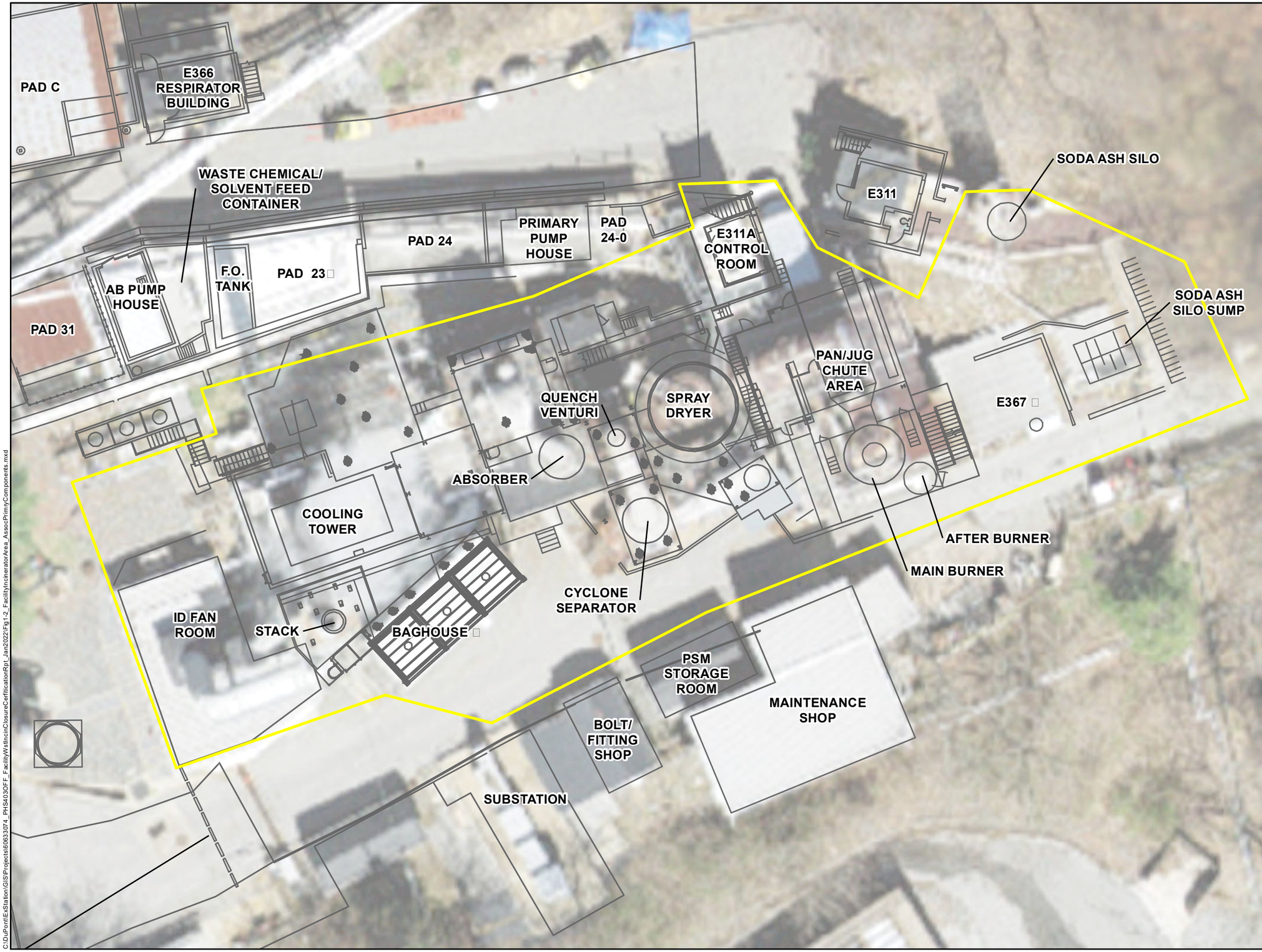

LEGEND

- Basemap Featuress
- Incinerator Area: 2021 Demolition and Removal
- Property Boundary

Notes:

Map Projection: Delaware State Plane Feet NAD 83
Aerial Source: Surdex Corp 2017

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Feet
1 inch = 20 feet

MAP FORMATTED FOR "B" (11" X 17") SIZE SHEET.
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FACILITY INCINERATOR AREA AND ASSOCIATED PRIMARY COMPONENTS

Facility Waste Incinerator Closure Certification Report
Delaware State Permit Number HW04j22
DuPont Experimental Station
Wilmington, DE

TASK NUMBER: PHS403	PROJECT NUMBER: 60633074
DESIGNED BY: P. CHEN	DATE: 2/14/2022
DRAWN BY: C. DUFFY	FIGURE NUMBER: 1-2
DATA QUALITY CHECK BY: P. CHEN	

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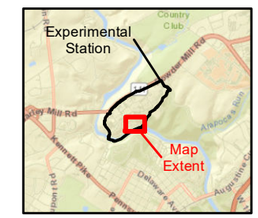
LEGEND

- Basemap Featuress
- Tie Line (Approximate)
- CRCA Boundary (Approximate)
- Incinerator Area: 2021 Demolition and Removal
- Property Boundary

Notes:
Map Projection: Delaware State Plane Feet NAD 83
2020 Metro Aerial Source: Maxar



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BOUNDARY OF CREEK ROAD CONTAMINATION AREA (CRCA) AND FACILITY INCINERATOR AREA

Facility Waste Incinerator Closure Certification Report
Delaware State Permit Number HW04j22
DuPont Experimental Station
Wilmington, DE

TASK NUMBER: PHS403	PROJECT NUMBER: 60633074
DESIGNED BY: P. CHEN	DATE: 2/14/2022
DRAWN BY: C. DUFFY	FIGURE NUMBER: 2-1
DATA QUALITY CHECK BY: P. CHEN	

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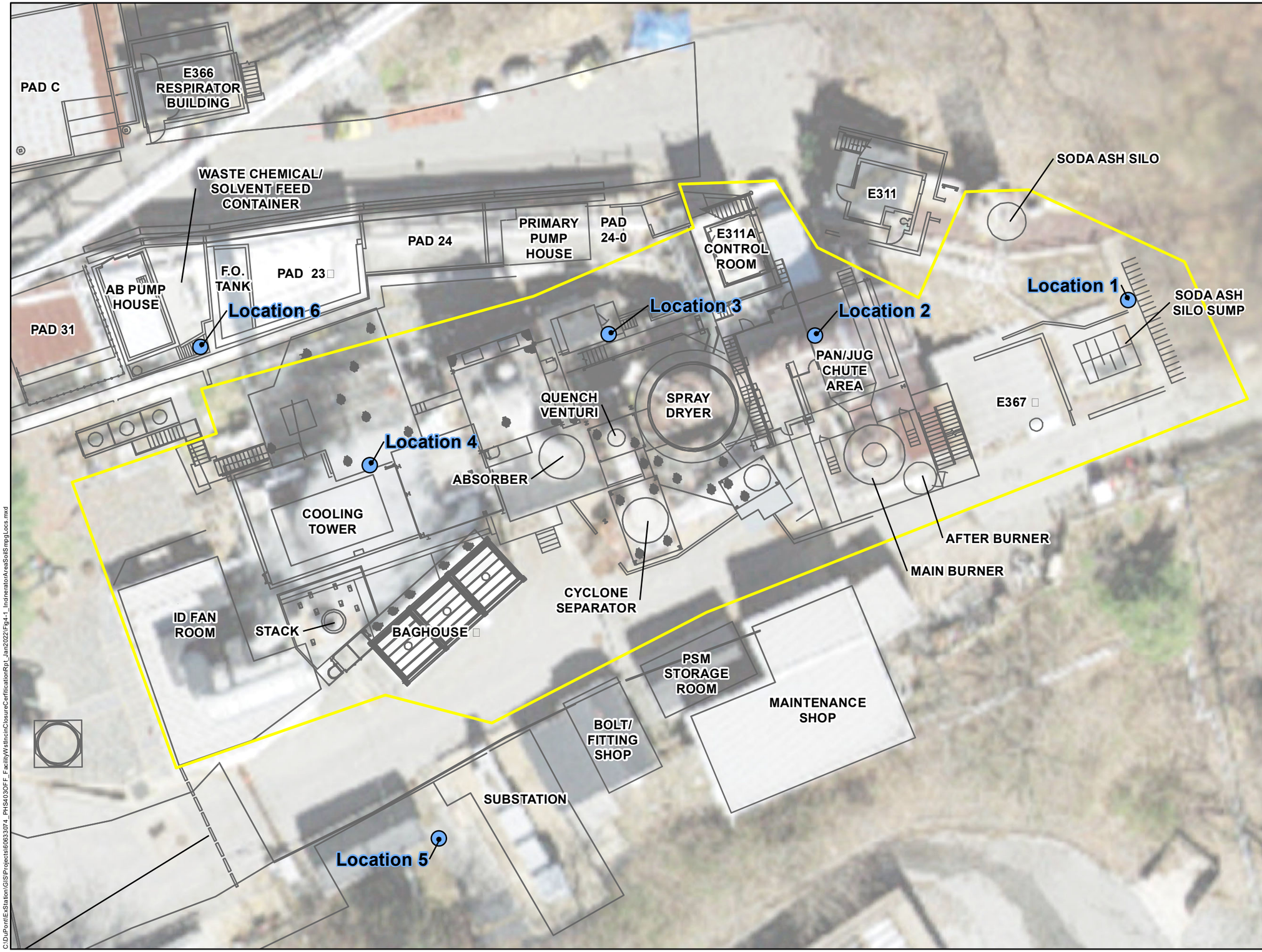
Figure 2-2
Summary of Incinerator Decommission and Demolition Chronology
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington Delaware

Incinerator Component	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21
Stack														
Baghouse														
Waste Chemical/Solvent Feed System														
Refractory Brick														
Mercury & Oil Equipment Drain/Collection														
Reheater														
ID Fan														
EDV														
Absorber														
Cyclone														
Quench/Venturi														
Spray Dryer														
Afterburner														
Main Hearth														
Neutralization Agent Silo														

Notes

Work Duration for Component Removal

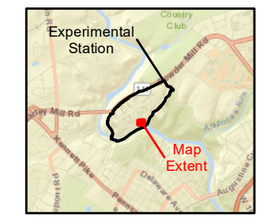


LEGEND

- Soil Sample Location
- Basemap Featuress
- Incinerator Area: 2021 Demolition and Removal
- Property Boundary

Notes:
Location 6 = Sample collected adjacent to waste chemical/solvent feed container.

Map Projection: Delaware State Plane Feet NAD 83
Aerial Source: Surdex Corp 2017



N W E S

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Feet
1 inch = 20 feet

MAP FORMATTED FOR "B" (11" X 17") SIZE SHEET.
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Newark, DE 19713

INCINERATOR AREA SOIL SAMPLING LOCATIONS

Facility Waste Incinerator Closure Certification Report
Delaware State Permit Number HW04j22
DuPont Experimental Station
Wilmington, DE

TASK NUMBER: PHS403	PROJECT NUMBER: 60633074
DESIGNED BY: P. CHEN	DATE: 2/14/2022
DRAWN BY: C. DUFFY	FIGURE NUMBER: 4-1
DATA QUALITY CHECK BY: P. CHEN	

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Appendices

Appendix A

Regulatory Agency Communications

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
89 KINGS HIGHWAY
DOVER, DE 19901

COMPLIANCE & PERMITTING

PHONE: (302) 739-9403
FAX: (302) 739-5060

March 30, 2021

Ms. Mary Glowacki
Environmental Compliance Manager
DuPont Experimental Station
P.O. Box 80249
Wilmington, DE 19880-0249

Subject: Approval of Storage Pad Closure
Reference: DED003930807; File Code: 15

Dear Ms. Glowacki:

The Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Waste and Hazardous Substances (DWHS), Compliance and Permitting Section (CAPS) is in receipt of DuPont's closure report dated February 24, 2021 related to the closure of on-site hazardous waste storage pads. In the report, DuPont provided certification of closure for Pads A, B, C, D, E, F, G, 23, 24, and 24-0 in accordance with 7 DE Admin. Code 1302, *Delaware's Regulations Governing Hazardous Waste* (DRGHW) §264.115. The CAPS consulted with the Division's Remediation Section to review the closure report conclusions.

The CAPS concurs with DuPont's conclusion that risk-based clean-closure of Pads A, B, C, D, E, F, G, 23, 24, and 24-0 has been achieved as described in the closure plan approved by the CAPS on July 10, 2020 and the alternative closure performance standards approved by the CAPS on February 9, 2021. As such, the requirements of Permit HW04k22 no longer apply to Pads A, B, C D, E, F, G, 23, 24, and 24-0. However, the permit will remain in effect until all closure activities described in the closure plan are complete.

Should you have any questions, please do not hesitate to contact Melissa A. Ferree of the CAPS at (302) 739-9403.

Sincerely,

Jason W. Sunde
Environmental Program Administrator
Compliance and Permitting Section

JWS:MAF:cr
MAF2104.doc

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
89 KINGS HIGHWAY
DOVER, DE 19901

COMPLIANCE & PERMITTING

PHONE (302) 739-9403
FAX: (302) 739-5060

October 14, 2021

Ms. Nicole DiMondi
EHS Manager
DuPont Experimental Station
P.O. Box 80249
Wilmington, DE 19880-0249

Subject: Approval – Incinerator Area Soil Sampling Work Plan Addendum
Reference: DED003930807; File Code: 15

Dear Ms. DiMondi:

The Delaware Department of Natural Resources and Environmental Control (DNREC), Compliance and Permitting Section (CAPS) is in receipt of your letter dated October 13, 2021 that included an addendum to the Incinerator Area Soil Sampling Work Plan. The CAPS approves the addendum to the work plan and DuPont may continue with closure activities as described in the work plan.

If you have any questions, please feel free to contact Melissa A. Ferree at 302.739.9403.

Sincerely,

Jason W. Sunde
Environmental Program Administrator
Compliance and Permitting Section

cc: Brad Berg, DuPont Specialty Products (electronic copy only)

JWS:MAF:cr
MAF2110.doc

DuPont Specialty Products USA, LLC
Experimental Station
200 Powder Mill Rd
Wilmington, DE 19803
302.774.1000

November 10, 2021

Ms. Melissa Ferree
Engineer III
Solid and Hazardous Waste Management Section
Delaware Department of Natural Resources and Environmental Control (DNREC)
89 Kings Highway
Dover, Delaware 19901

Subject: Experimental Station Thermal Waste Treatment Closure: Incinerator Area Soil Sampling – Request to Remove Furans from Soil Analytical Parameter List

Dear Ms. Ferree:

The Experimental Station's Permit for Hazardous Waste Storage (State Permit Number HW04j22; DuPont, 2020[1]) includes, as Attachment II-6, the Closure Plan that presents the closure activities and requirements to complete closure of the facility's Thermal Waste Treatment System. The closure plan identifies the sampling procedures, target analytes, and closure performance standards to attain treatment system closure. The closure plan target analyte list identifies the constituent Furan (110-00-9) as a target analyte for the incinerator area soil samples.

DuPont has determined that Furan analysis in both soil and water samples is no longer commercially available. In an effort to identify a laboratory capable of analyzing soil samples for the constituent Furan, the following laboratory networks were contacted:

- Eurofins/TestAmerica Laboratories
- GEL Laboratories
- Alpha Analytical
- Pace Analytical
- ALS Global

The above laboratories responded that they are not currently set up for the analysis of Furan in soil or water samples and therefore cannot perform the analysis. Based on the multiple laboratory networks contacted, it was concluded that commercial laboratories are unable to perform Furan analysis. This conclusion was supported by DNREC in a November 8, 2021 email communication between DNREC (Melissa Ferree) and DuPont (Bradley Berg).

[1] DuPont. July 2020. Permit for Hazardous Waste Storage. State Permit No. HW04j22. EPA Identification Number: DE003930807. DuPont Specialty Products USA, LLC, DuPont Experimental Station, Rt. 141 & Henry Clay, Wilmington, DE 19880.

Based on the above information, DuPont believes they have exhausted the available avenues to identify a commercial laboratory that can currently perform the analysis for Furan. DuPont requests DNREC-approval to modify the closure plan by removing Furan from the target analyte list.

If you have any questions, please contact Bradley Berg (DuPont EH&S Specialist) via email at Bradley.A.Berg-1@dupont.com.

Sincerely,

Nicole DiMondi

Nicole DiMondi
EHS Manager
O&E/Facilities Service
DuPont Experimental Station
Nicole.L.DiMondi@dupont.com

cc:
Rick Drazich (DuPont)
Tyson Campbell (DuPont)
Bradley Berg (DuPont)
Terrill Stammler (AECOM)

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
COMPLIANCE & PERMITTING
89 KINGS HIGHWAY
DOVER, DE 19901
PHONE: (302) 739-9403
FAX: (302) 739-5060

November 17, 2021

Ms. Nicole DiMondi
EHS Manager
DuPont Experimental Station
P.O. Box 80249
Wilmington, DE 19880-0249

Subject: Approval – Modification of Closure Plan to Remove Furan
Reference: DED003930807; File Code: 15

Dear Ms. DiMondi:

The Delaware Department of Natural Resources and Environmental Control (DNREC), Compliance and Permitting Section (CAPS) is in receipt of your letter dated November 10, 2021 requesting a modification to the approved closure plan to remove furan (CAS #110-00-9) from the list of compounds requiring analysis. DuPont states in its letter that it has contacted five (5) national laboratory networks and has identified that this analysis is no longer commercially available. The CAPS has independently confirmed this conclusion. As such, the CAPS approves the request to modify the closure plan to remove furan from the list of required analytes.

If you have any questions, please feel free to contact Melissa A. Ferree at 302.739.9403.

Sincerely,

Jason W. Sunde
Environmental Program Administrator
Compliance and Permitting Section

cc: Bradley Berg, DuPont Specialty Products (electronic copy only)

JWS:MAF:cr
MAF2112.doc

Appendix B

Closure Activity Photographic Log

AECOM

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Newark, DE 19713
(302) 781-5900

APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 11/14/20**

SITE PHOTOGRAPH

Title: Stack Demolition Date: 11/14/20 Direction: East Description: Stack section was mechanically separated at flange from man basket.	
Title: Stack Demolition Date: 11/14/20 Direction: East Description: Stack section lowered to the ground using crane and reoriented for placement on flatbed trailer using secondary tailing crane.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 12/18/20**

SITE PHOTOGRAPH

Title: Stack Disposal

Date: 12/18/20

Direction: NA

Description: Stack section staged on flatbed trailers for off-site disposal. The open ends are sealed with plastic and steel fabricated blanks.

Title: Baghouse Demolition

Date: 12/8/20

Direction: East

Description: Baghouse cell lowered with primary crane and reoriented for placement on flatbed trailer with secondary tailing crane.

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 12/8/20**

SITE PHOTOGRAPH

Title: Stack Demolition Date: NA Direction: North Description: Demolition of three baghouse cells resulting in an empty steel superstructure.	
Title: Stack Demolition Date: 12/8/21 Direction: South Description: Baghouse cells staged on lowboy trailers for off-site disposal.	

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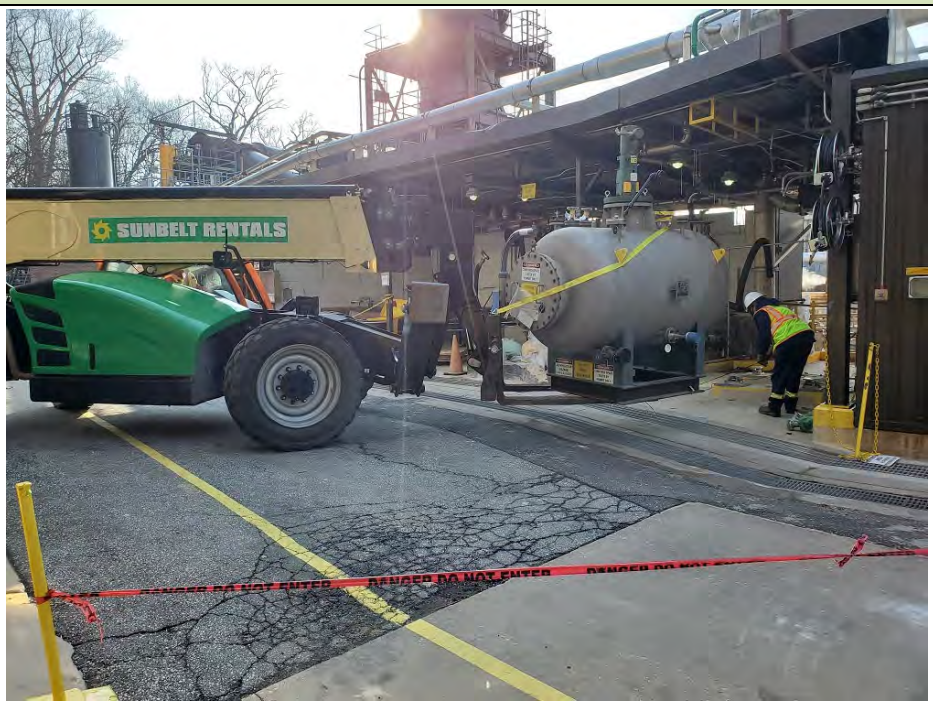
(302) 781-5900

APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 3/4/21**

SITE PHOTOGRAPH

Title: Waste Chemical/Solvent Feed Container Removal Date: 3/4/21 Direction: East Description: Removing waste chemical/solvent feed container with telehandler following draining and containerization of residuals.	
Title: Waste Chemical/Solvent Feed Container Removal Date: 3/5/21 Direction: South Description: Placing waste chemical/solvent feed container in roll off for recycling.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 4/8/21**

SITE PHOTOGRAPH

Title: Refractory Brick Removal

Date: 4/8/21

Direction: South

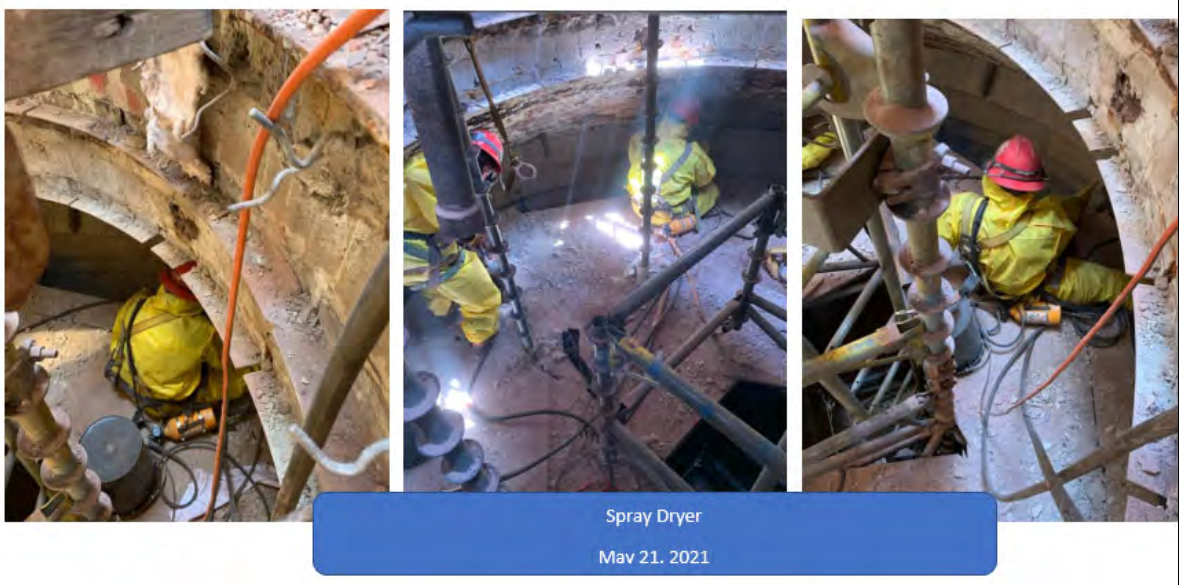
Description: Removing refractory brick lining from the Afterburner.

Title: Refractory Brick Removal

Date: 5/21/21

Direction: NA

Description: Removing refractory brick lining from Spray Dryer.



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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 8/27/21**

SITE PHOTOGRAPH

Title: Reheater Removal Date: 8/27/21 Direction: South Description: Stack section lowered to the ground using crane and reoriented for placement on flatbed trailer using secondary tailing crane.	
Title: ID Fan Removal Date: 9/27/21 Direction: East Description: ID Fan being loaded onto flatbed trailer for off-site disposal	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 8/26/21**

SITE PHOTOGRAPH

Title: EDV Removal Date: 8/26/21 Direction: West Description: Removing small component from EDV by crane for placement into a hazardous roll off for off-site disposal.	
Title: EDV Removal Date: 8/27/21 Direction: East Description: Section of the EDV that was loaded onto a flatbed for off-site disposal. The majority of the EDV components were separated mechanically and placed in roll off containers for off-site disposal.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 9/13/21**

SITE PHOTOGRAPH

Title: Absorber Removal Date: 9/13/21 Direction: East Description: Absorber was lowered to the ground by crane and sized in a containment area for placement in roll offs for disposal.	
Title: Absorber Removal Date: 9/13/21 Direction: East Description: Sizing absorber inside containment area for placement in hazardous roll offs for off-site disposal.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 8/24/21**

SITE PHOTOGRAPH

Title: Cyclone Removal Date: 8/24/21 Direction: North Description: The Cyclone was wrapped in negative air containment to allow for out of scope refractory brick removal. The unit was processed with torches inside of the containment and loaded into roll off containers for off-site disposal.	
Title: Cyclone Removal Date: 9/21/21 Direction: North Description: Removing the lower cone of the cyclone with crane.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 9/21/21**

SITE PHOTOGRAPH

Title: Cyclone Removal Date: 9/21/21 Direction: southeast Description: Sizing lower cone with hydraulic sheer for disposal in hazardous roll off container.	
Title: Spray Dryer Removal Date: 10/7/21 Direction: North Description: Spray Dryer was disassembled using a crane and sized for load out in roll of containers.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 10/6/21**

SITE PHOTOGRAPH

Title: Spray Dryer Removal Date: 10/8/21 Direction: North Description: Sizing remaining portion of spray dryer for load out into roll offs for off-site disposal.	
Title: After Burner Removal Date: 10/7/21 Direction: North Description: Afterburner was mechanically disassembled and placed on flatbeds for off-site disposal.	

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 10/7/21**

SITE PHOTOGRAPH

Title: After Burner Removal Date: 10/7/21 Direction: East Description: Loading after burner horizontal onto flatbed truck for off-site disposal.	
Title: After Burner Removal Date: 10/7/21 Direction: South Description: Securing after burner horizontal to lowboy trailer with chains.	

AECOM

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APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 10/6/21**

SITE PHOTOGRAPH

Title: Main Hearth Removal Date: 10/6/21 Direction: North Description: Preparing containment to size main hearth to meet DOT regulations for off-site disposal.	
Title: Main Hearth Removal Date: 10/7/21 Direction: South Description: Containment was installed at the separation point between the top of the main hearth and the combustion chamber.	

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4051 Ogletown Rd, Suite 300
Newark, DE 19713
(302) 781-5900

APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 10/4/21**

SITE PHOTOGRAPH

Title: Main Hearth Removal Date: 10/4/21 Direction: South Description: The top of the Main Hearth was removed by crane and placed on flatbed for off-site disposal.	
Title: Main Hearth Removal Date: 10/14/21 Direction: West Description: The combustion chamber and lower ring of the Main Hearth were sized under negative air containment and placed on flatbeds for off-site disposal. The trailers were tarped due to regular shape of pieces.	

AECOM

4051 Ogletown Rd, Suite 300
Newark, DE 19713
(302) 781-5900

APPENDIX A - PHOTOLOG

PROJECT: DuPont Experimental Station – Facility Incinerator Closure Certification Report	**DATE: 11/10/21**

SITE PHOTOGRAPH

Title: Neutralization Agent Silo Removal Date: 11/10/21 Direction: South Description: High vac system was used to collect and containerize residual soda ash.	
Title: Neutralization Agent Silo Removal Date: 11/23/21 Direction: East Description: Silo shell was sized with heavy equipment and torches for off-site recycling. The silo was removed down to the concrete pad.	

Appendix C

Hazardous Waste Disposal Log

Appendix C
Hazardous Waste Disposal Log
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington, Delaware

Facility Name	Service Date	Generator Name	Transporter Name	Manifest/BOL	Description	Bill Unit Desc	Quantity	Weight (lbs)
US Ecology Michigan – Treatment	12/18/2020	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491210FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	544	14560.00
US Ecology Michigan – Treatment	01/07/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491212FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	2200	23280.00
US Ecology Michigan – Treatment	01/06/2021	DUPONT EXPERIMENTAL STATION	FREEHOLD CARTAGE, INC.	015491211FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	10	4460.00
US Ecology Michigan – Treatment	01/14/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491213FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	2200	22800.00
US Ecology Michigan – Treatment	01/21/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491214FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	2200	12060.00
US Ecology Michigan – Treatment	01/29/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491216FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	544	12040.00
US Ecology Michigan – Treatment	01/29/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491215FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	544	13340.00
US Ecology Michigan – Treatment	02/05/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491218FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	82.03	2580.00
US Ecology Michigan – Treatment	02/05/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491217FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	322.26	3540.00
US Ecology Michigan – Treatment	03/05/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491219FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	718	10200.00
US Ecology Michigan – Treatment	03/05/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491220FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	433	9240.00
US Ecology Michigan – Treatment	03/12/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491222FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	354	12380.00
US Ecology Michigan – Treatment	03/12/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491221FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	491	10760.00
US Ecology Michigan – Treatment	03/26/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491223FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	838	12080.00
US Ecology Michigan – Treatment	04/16/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015491224FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	250	21620.00
US Ecology Michigan – Treatment	04/19/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247138FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	18420.00
US Ecology Michigan – Treatment	04/21/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247137FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	14900.00
US Ecology Michigan – Treatment	04/23/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247099FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	500	22240.00

Appendix C
Hazardous Waste Disposal Log
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington, Delaware

Facility Name	Service Date	Generator Name	Transporter Name	Manifest/BOL	Description	Bill Unit Desc	Quantity	Weight (lbs)
US Ecology Michigan – Treatment	05/03/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247100FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	21880.00
US Ecology Michigan – Treatment	05/05/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247101FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	23	26700.00
US Ecology Michigan – Treatment	05/10/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247102FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	26500.00
US Ecology Michigan – Treatment	05/12/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247103FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	22180.00
US Ecology Michigan – Treatment	05/17/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247105FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	25	23800.00
US Ecology Michigan – Treatment	05/19/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247106FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	22160.00
US Ecology Michigan – Treatment	05/24/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247104FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	8560.00
US Ecology Michigan – Treatment	05/26/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247107FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	24300.00
US Ecology Michigan – Treatment	06/01/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247108FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	18980.00
US Ecology Michigan – Treatment	06/03/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247109FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	23660.00
US Ecology Michigan – Treatment	06/07/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247110FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	26560.00
US Ecology Michigan – Treatment	06/08/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247113FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	18600.00
US Ecology Michigan – Treatment	06/10/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247111FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	17820.00
US Ecology Michigan – Treatment	06/14/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247114FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	20980.00
US Ecology Michigan – Treatment	06/14/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247115FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	6300.00
US Ecology Michigan – Treatment	06/16/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247116FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	24680.00
US Ecology Michigan – Treatment	06/16/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247112FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	25760.00
US Ecology Michigan – Treatment	06/21/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247118FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	10	22800.00

Appendix C
Hazardous Waste Disposal Log
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DuPont Experimental Station
Wilmington, Delaware

Facility Name	Service Date	Generator Name	Transporter Name	Manifest/BOL	Description	Bill Unit Desc	Quantity	Weight (lbs)
US Ecology Michigan – Treatment	06/21/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247117FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	27560.00
US Ecology Michigan – Treatment	06/23/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247119FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	24360.00
US Ecology Michigan – Treatment	06/23/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015246669FLE	Incinerator Spray Dryer Ash	Cubic Yard	20	29740.00
US Ecology Michigan – Treatment	08/27/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247120FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	579	15580.00
US Ecology Michigan – Treatment	08/27/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	015247121FLE	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	752	5670.00
US Ecology Michigan – Treatment	09/02/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029121JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	1030	17700.00
US Ecology Michigan – Treatment	09/01/2021	DUPONT EXPERIMENTAL STATION	US Ecology Transportation Solutions, Inc	023029123JJK	Incinerator Spray Dryer Ash & Potable Water	55 Gallon Drum	6	3000.00
US Ecology Michigan – Treatment	09/15/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029120JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	1693	13960.00
US Ecology Michigan – Treatment	09/20/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029116JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	10020.00
US Ecology Michigan – Treatment	09/22/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029118JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	22040.00
US Ecology Michigan – Treatment	09/27/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029115JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	30	7260.00
US Ecology Michigan – Treatment	09/29/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029117JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	4960.00
US Ecology Michigan – Treatment	09/30/2021	DUPONT EXPERIMENTAL STATION	Miller Transporation	023029112JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	1717	26720.00
US Ecology Michigan – Treatment	09/23/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029114JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	708	9960.00
US Ecology Michigan – Treatment	09/21/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029119JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	1160	19080.00
US Ecology Michigan – Treatment	10/04/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029113JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	30	4980.00
US Ecology Michigan – Treatment	10/06/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029108JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	8920.00
US Ecology Michigan – Treatment	10/05/2021	DUPONT EXPERIMENTAL STATION	FREEHOLD CARTAGE, INC.	023029110JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	30	11020.00

Appendix C
Hazardous Waste Disposal Log
Facility Waste Incinerator Closure Certification Report
DuPont Experimental Station
Wilmington, Delaware

Facility Name	Service Date	Generator Name	Transporter Name	Manifest/BOL	Description	Bill Unit Desc	Quantity	Weight (lbs)
US Ecology Michigan – Treatment	10/07/2021	DUPONT EXPERIMENTAL STATION	FREEHOLD CARTAGE, INC.	023029106JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	16360.00
US Ecology Michigan – Treatment	10/07/2021	DUPONT EXPERIMENTAL STATION	FREEHOLD CARTAGE, INC.	023029107JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	8960.00
US Ecology Michigan – Treatment	10/05/2021	DUPONT EXPERIMENTAL STATION	Miller Transporation	023029111JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	780	8660.00
US Ecology Michigan – Treatment	10/20/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	021589474JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	2243	13680.00
US Ecology Michigan – Treatment	10/19/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	022413602JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Foot	200	22760.00
US Ecology Michigan – Treatment	10/25/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023030000JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	6560.00
US Ecology Michigan – Treatment	10/27/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029999JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	30	5400.00
US Ecology Michigan – Treatment	11/01/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029998JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	13190.00
US Ecology Michigan – Treatment	11/03/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029997JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	18080.00
US Ecology Michigan – Treatment	11/08/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029995JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	25	15080.00
US Ecology Michigan – Treatment	11/03/2021	DUPONT EXPERIMENTAL STATION	FREEHOLD CARTAGE, INC.	023029996JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	30	18160.00
US Ecology Michigan – Treatment	11/10/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029994JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	15	12520.00
US Ecology Michigan – Treatment	11/15/2021	DUPONT EXPERIMENTAL STATION	SJ TRANSPORTATION COMPANY, INC.	023029018JJK	BAGHOUSE, STACKS, DUCT WORK, SEALED PIPING. BRICK	Cubic Yard	20	17980.00

Appendix D

Soil Sampling Work Plan Addendum

DuPont Specialty Products USA, LLC
Experimental Station
200 Powder Mill Rd
Wilmington, DE 19803
302.774.1000

October 13, 2021

Ms. Melissa Ferree
Engineer III
Solid and Hazardous Waste Management Section
Delaware Department of Natural Resources and Environmental Control (DNREC)
89 Kings Highway
Dover, Delaware 19901

Subject: Experimental Station – Thermal Waste Treatment Closure: Incinerator Area Soil Sampling Work Plan Addendum (updated October 14, 2021)

Dear Ms. Ferree:

In the July 2020 document "*Soil Sampling Work Plan for Closure of Waste Storage Pads A, B, G, 23, 24, 24-0, and the Facility Incinerator*" (AECOM, 2020), it was noted that six soil samples would be collected from the incinerator area from six "to-be-identified" sample locations. Table 1 of the work plan noted that "Soil sample locations within the incinerator area will be identified after completion of incinerator demolition and removal."

This work plan addendum is being submitted to present the following information for DNREC approval:

- Present the proposed locations of incinerator area soil samples.
- Identify alternative closure performance standards, previously approved by DNREC for the closure of the waste storage pads that will be used as part of the incinerator closure.
- State that Risk Assessment Information System (RAIS) Risk Calculator, previously identified by DNREC for the closure of the waste storage pads, will be used, if needed, as part of the incinerator closure.

DuPont requests DNREC approval of the proposed sample locations and the use of alternative closure performance standards (CPS) and the RAIS calculator.

Incinerator Area Soil Sample Locations

Attachment II-6 Closure Plan – Modification, Section II-6.C of the document "Permit for Hazardous Waste Storage, State Permit Number: HW04j22, EPA Identification Number DED003930807, DuPont Specialty Products USA, LLC, DuPont Experimental Station" stated the following:

- II-6.C7 Soil Samples will be collected at five locations within the incinerator area where surface soils are exposed. An additional sample will be collected on the back side of the pad where the waste chemical/solvent feed container is located. Exact location will be determined when the structure is removed to expose surface soil.

The Soil Sampling Work Plan (AECOM, 2020) stated the following:

- The surficial soil samples will be collected from 0 to 1 foot below ground surface (bgs) or down to refusal if refusal is encountered prior to the identified 1-foot depth.

The five soil sample locations within the incinerator area (Locations 1 through 5) and the soil sample associated with the waste chemical/solvent feed container (Location 6) are identified in Figure 1 (see blue locations). Per the Melissa Ferree (DNREC) request, emailed to Rick Drazich (DuPont) on October 5, 2021, one of the five incinerator area sample locations (Location 5) has been moved to a location south of the "stack"; this location is outside of the incinerator area boundary (see Figure 1).

If it is determined that refusal is encountered within the first 3 inches of sampling, two alternate sample locations have been identified for Locations 1 through 4 (alternate locations are colored green in Figure 1).

Photographs of each location can be found in Attachment 1.

Alternative Closure Performance Standards (CPS)

On January 12, 2021, in a letter from Mary Glowacki (DuPont) to Melissa Ferree (DNREC), DuPont requested the use of alternative CPS to assess the Thermal Waste Treatment (TWT) Storage Pad Closure soil samples analytical results.

On January 14, 2021 and February 9, 2021, in letters from Jason Sunde (DNREC) to Mary Glowacki (DuPont), DNREC concurred that the alternative CPS proposed by DuPont were appropriate and approved the use of the alternative CPS. Both the letter form DuPont and the letters from DNREC can be found in Attachment 2.

Without objection from DNREC, DuPont requests that the same alternative CPS identified in Attachment 2 be applied to the up-coming TWT Incinerator Area soil sampling event.

RAIS Risk Calculator

On February 9, 2021, in a letter from Jason Sunde (DNREC) to Mary Glowacki (DuPont), DNREC stated the following:

- "The hazardous waste closure process relies on a risk-based clean closure standard. As such, CAPS (Compliance and Permitting Section) will require DuPont to determine the human health risk … by using the Risk Assessment Information System (RAIS) Risk Calculator…."

As needed, DuPont intends to apply the RAIS Risk Calculator, previously identified by DNREC for the closure of the TWT waste storage pads as part of the assessment of the incinerator closure soil samples.

DNREC approval is requested for the following items:

- Approval of incinerator area soil sample locations and use of alternate locations.
- Approval of the use of alternative CPS previously approved by DNREC.
- Approval of the application of the RAIS Risk Calculator to incinerator area soil results as needed.

If you have any questions, please contact Rick Drazich (DuPont Environmental Consultant) via email at Rick.B.Drazich@dupont.com.

Sincerely,

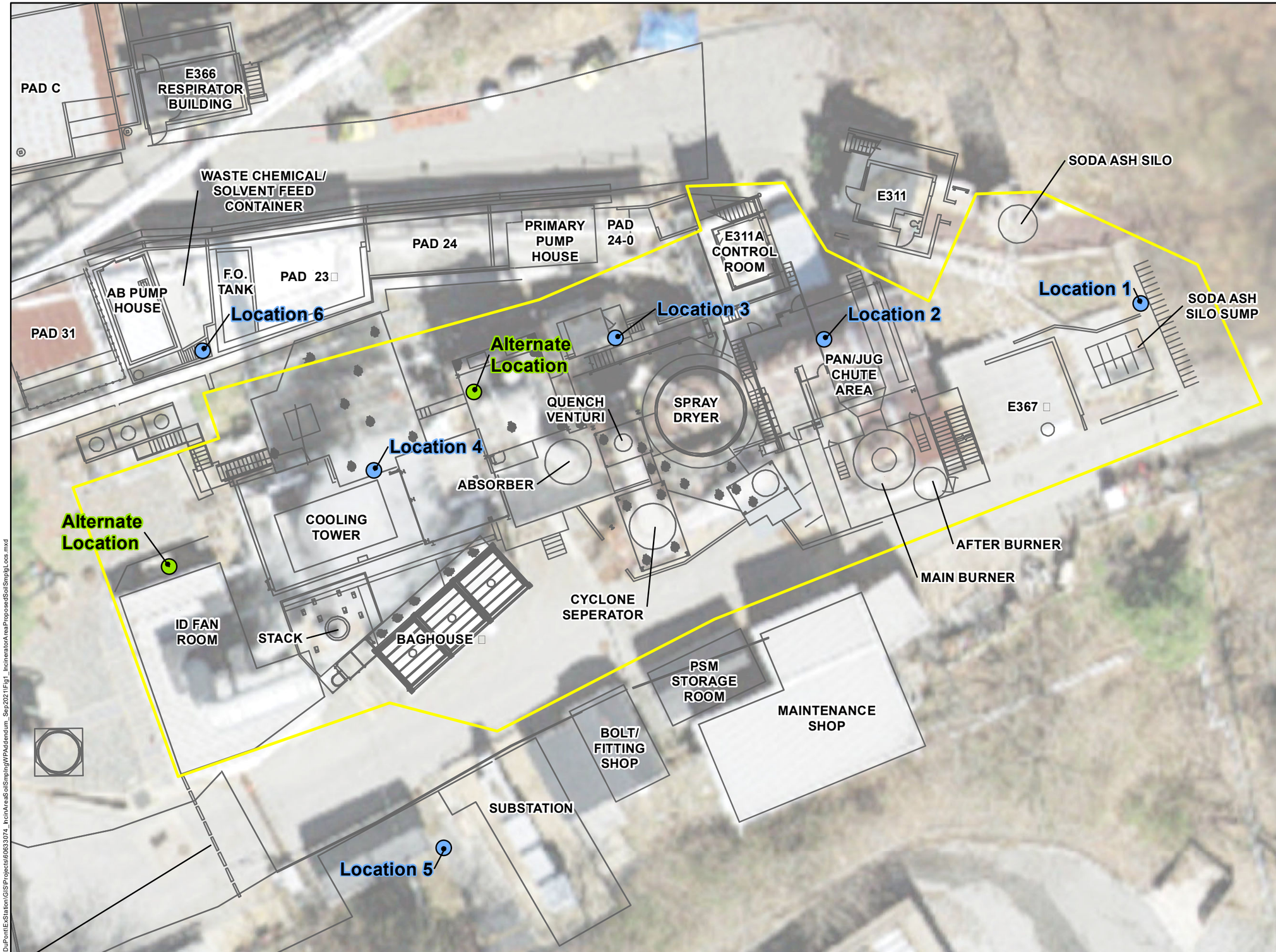
Nicole DiMondi

Nicole DiMondi
EHS Manager
O&E/Facilities Service
DuPont Experimental Station
Nicole.L.DiMondi@dupont.com

cc:
Rick Drazich (DuPont)
Tyson Campbell (DuPont)
Terrill Stammler (AECOM)

Figure 1 – Incinerator Area Proposed Soil Sampling Locations
Attachment 1 – Photographs of Proposed Locations
Attachment 2 – Communications

Figures



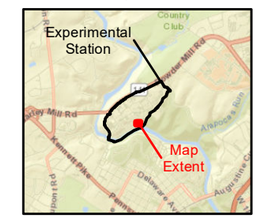
LEGEND

- Proposed Soil Sample Location
- Proposed Alternate Soil Sample Location
- Basemap Featuress
- Incinerator Area: 2021 Demolition and Removal
- Property Boundary

Notes:
Alternate Locations are potential backups for Locations 1 through 5 if issues such as access are identified.

Location 6 = Sample collected adjacent to waste chemical/solvent feed container.

Map Projection: Delaware State Plane Feet NAD 83
Aerial Source: Surdex Corp 2017



N
W E
S

0 20 40
Feet
1 inch = 20 feet

MAP FORMATTED FOR "B" (11" X 17") SIZE SHEET.
TEXT SCALE NOT VALID FOR DIFFERENT PAGE SIZE.

AECOM

AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, DE 19713

INCINERATOR AREA PROPOSED SOIL SAMPLING LOCATIONS

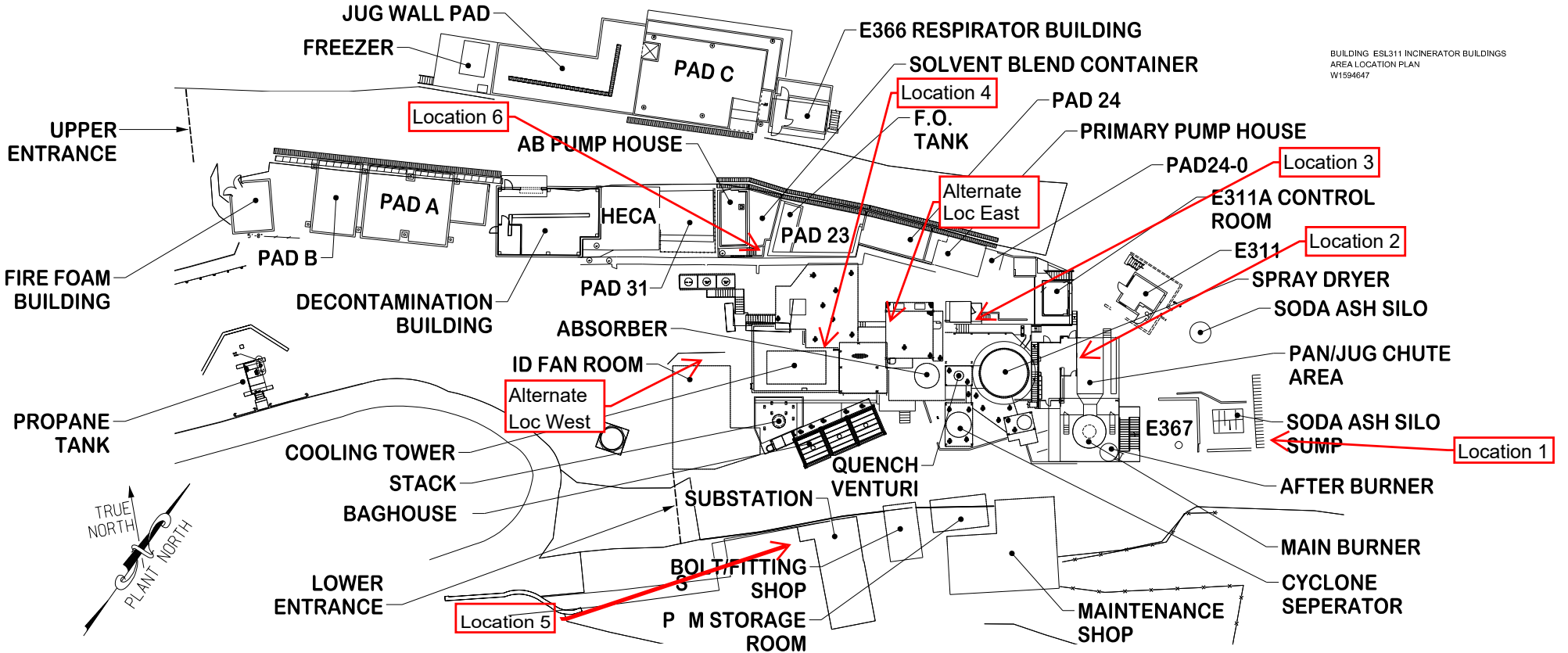
Incinerator Area Soil Sampling
Work Plan Addendum
DuPont Experimental Station
Wilmington, DE

TASK NUMBER: PHS305	PROJECT NUMBER: 60633074
DESIGNED BY: P. CHEN	DATE: 10/8/2021
DRAWN BY: C. DUFFY	FIGURE NUMBER: 1
DATA QUALITY CHECK BY: P. CHEN	

C:\DuPont\E-Station\GIS\Projects\60633074_IncinAreaSoilSmplngWPAddendum_Sep2021\Fig1_IncineratorAreaProposedSoilSmplgLocs.mxd

Attachment 1

Photographs of Proposed Locations


BUILDING ESL311 INCINERATOR BUILDINGS
AREA LOCATION PLAN
W1594647
JUG WALL PAD
FREEZER
PAD C
E366 RESPIRATOR BUILDING
SOLVENT BLEND CONTAINER
Location 4
PAD 24
F.O. TANK
PRIMARY PUMP HOUSE
UPPER ENTRANCE
Location 6
AB PUMP HOUSE
PAD24-0
Location 3
Alternate Loc East
E311A CONTROL ROOM
PAD A
HECA
PAD 23
E311
Location 2
PAD B
FIRE FOAM BUILDING
PAD 31
SPRAY DRYER
DECONTAMINATION BUILDING
SODA ASH SILO
ABSORBER
PAN/JUG CHUTE AREA
ID FAN ROOM
Alternate Loc West
PROPANE TANK
E367
SODA ASH SILO SUMP
Location 1
COOLING TOWER
QUENCH VENTURI
STACK
AFTER BURNER
SUBSTATION
BAGHOUSE
MAIN BURNER
TRUE NORTH
PLANT NORTH
BOLT/FITTING S SHOP
CYCLONE SEPERATOR
LOWER ENTRANCE
Location 5
P M STORAGE ROOM
MAINTENANCE SHOP

Location 1

Location 2

Location 3

Location 4
ELECTRIC TRACED

Location 5
HIGH VOLTAGE
HIGH VOLTAGE
HIGH
SAFWAY

Location 6

Alternate Location West

Alternate Location East

Attachment 2

Communications

DuPont Specialty Products USA, LLC
Experimental Station
200 Powder Mill Rd
Wilmington, DE 19803
302.774.1000

January 12, 2021

Ms. Melissa Ferree
Engineer III
Solid and Hazardous Waste Management Section
Delaware Department of Natural Resources and Environmental Control (DNREC)
89 Kings Highway
Dover, Delaware 19901

Subject: Request Use of Alternate Closure Performance Standard (CPS) Values for Certain Constituents, Incinerator Area Storage Pads, DuPont Experimental Station, Wilmington, Delaware

Dear Melissa:

Please find attached the alternative Closure Performance Standard (CPS), which includes comments received by DuPont on January 7, 2021 from DNREC in regard to the December 11, 2020 submission.

Thank you for participating in the November 4, 2020 DuPont-DNREC meeting regarding the status of the incinerator area storage pad activities. During this meeting, the storage pad rinsate and soil laboratory results were discussed. Based on the results, DuPont recommended the use of alternate CPS values for certain constituents. DNREC noted that any requests to use an alternate criteria must be submitted in writing. This notification letter is being submitted to meet this requirement.

Rinsate and Soil CPS Values

Per the Closure Plan located in the DuPont document “Permit for Hazardous Waste Storage” for DuPont Specialty Products USA, LLC, DuPont Experimental Station (effective 7-10-2020), the following CPS values were selected:

- CPS for rinsate:
  - The Maximum Contaminant Level (MCL) was used for rinsate.
  - If an MCL value was not available for a constituent, the U.S. Environmental Protection Agency (EPA) Risk-based Screening Level (RSL)-tap water was used.
  - If neither MCL nor RSL-tap water was available for a constituent, the laboratory Method Detection Limit (MDL) was used.
- CPS for soils:
  - The EPA Industrial Soil RSL was used.
  - If an RSL value was not available for a constituent, the laboratory MDL was used.

For the purposes of this letter, CPS associated with MCL, RSL-tap water, and Industrial Soil RSL values will be referred to as RSL-CPS; CPS associated with laboratory MDL values will be referred to as MDL-CPS.

In general, based on a review of the data, it was determined that alternate CPS are applicable for certain constituents for any of the following reasons:

- The alternate CPS is more representative;
- An alternate risk based CPS value has been identified that better represents potential risk concerns; and/or
- Identified RSLs are not attainable by standard agency-approved laboratory methodology.

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The following sections present a constituent-by-constituent discussion of each alternate CPS recommendation. Where appropriate, constituents with a similar request have been grouped together.

Requested Use of Alternate Criteria for Rinsate CPS

Based on a review of the rinsate analytical results, DuPont requests an alternate CPS for 28 constituents. The identified 28 constituents as well as proposed alternate CPS are summarized in Table 1 (attached) and discussed in detail below.

2 Constituents: Identified CPS = MDL; Replace with Surrogate Constituent Risk Values

The laboratory MDL is the lower detection limit for a constituent of interest. The MDL has been defined as: "The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero". Using the MDL as a closure performance standard (i.e., MDL-CPS) is very conservative because 1) the MDL is the non-quantifiable lower detection limit, and 2) the MDL is not a risk-based value.

Two constituents, endosulfan1 and amenable cyanide, had at least one detection (estimated value) above the assigned MDL-CPS (see attached Table 1); EPA RSL/MCL values are not available for endosulfan1 and amenable cyanide. For these two constituents, DuPont requests the use of surrogate constituent risk values.

Surrogate constituents are chemically and toxicologically similar to the constituent of interest. Due to the similarities, the surrogate constituent's risk value can be applied when a risk value is not available for a constituent of interest. A document reference supporting use of surrogates (identified in the document as Proxy Chemicals) can be found here:
https://www.deq.virginia.gov/Portals/0/DEQ/Land/RemediationPrograms/VURAM/VURAMUG3.1.pdf?ver=2020-06-11-102551-837

The two surrogates and their associated RSL-tap water or MCL values are identified below and in Table 1 (attached). DuPont requests that, because laboratory MDL are not risk-based values and surrogates are chemically and toxicologically similar, the identified surrogate RSL values be used in place of the MDL-CPS.

Original Constituent	CAS#	Surrogate Constituent	CAS#	MCL/RSL (µg/L) [a, b]
Endosulfan I	959-98-8	Endosulfan [c]	115-29-7	100 (RSL)
Amendable Cyanide	NA	Cyanide	57-12-5	200 (MCL)

NA = Not Available
µg/L = micrograms per liter
(a) November 2020 Tap Water Regional Screening Levels (RSLs) that are protective of a target cancer risk of 1E-06 and target hazard quotient of 1.
(b) Maximum Contaminant Levels (MCLs) are from National Primary Drinking Water Regulations. EPA 816-F-09-004. https://www.epa.gov/dwstandardsregulations/2018-drinking-water-standards-and-advisory-tables
(c) Surrogate constituent Endosulfan to be compared against the sum of Endosulfan I + Endosulfan II analytical results per email from Melissa A. Ferree (DNREC) to Mary L. Glowacki (DuPont) dated January 7, 2021.

25 Constituents: Identified CPS = RSL; All results non-detect; MDL slightly above RSL

The analytical results associated with the following 25 constituents were all non-detect for all rinsate samples.

1,1,2,2-Tetrachloroethane	4-Chloroaniline	N-Nitrosodiethylamine
1,2-Dibromo-3-Chloropropane	Acrylonitrile	N-Nitroso-Di-N-Butylamine
1,2-Dibromoethane (EDB)	Benzo(A)Anthracene	N-Nitrosodi-N-Propylamine
1,4-Dioxane	Bis(2-Chloroethyl)Ether	N-Nitrosopiperidine

2,4-Dinitrotoluene	Dibenz(A,H)Anthracene	N-Nitrosopyrrolidine
2,6-Dinitrotoluene	Hexachlorobutadiene	Pentachloronitrobenzene
2-Acetylaminofluorene	Hexachloroethane	Safrole
3-Methylcholanthrene	Methacrylonitrile	
4,4'-Methylenebis-(2-Chlorobenzenamine)	Nitrobenzene	

However, the analytical methods for the 25 constituents did not have an MDL that could attain the low RSL-CPS value (see attached Table 1). The laboratory methods associated with the 25 constituents were identified in the approved Closure Plan. The methods applied were standard EPA -accepted methods. Attaining a lower MDL would require using a modified, non-standard, and/or constituent-specific analytical method that may not meet agency approval. Three national laboratories were contacted (Eurofins Lancaster Laboratories, TestAmerica Laboratory, and Alpha Labs) regarding potential laboratory analytical methods that could attain an MDL value as low as the identified RSL value. The laboratories indicated that for at least 17 of the 25 constituents, they did not have an analytical method that could attain an MDL value as low as the identified RSL.

The rinsate results associated with the 25 constituents were all non-detect. The non-detect MDL values attained were equal to the equipment blank values indicating that the laboratory MDLs were not impacted by interference. Based on the absence of detections, there is no evidence to indicate that these constituents are present. DuPont requests that, for the 25 identified constituents, when the RSL-CPS value cannot be reached using the closure plan-identified and agency-accepted laboratory methodology, the MDL be used as the CPS.

Calcium: Identified CPS= MDL; Request MDL-CPS be replaced with Recommended Daily Allowance based value

Calcium does not have an EPA RSL/MCL value; hence, use of the MDL-CPS was identified. As noted previously, the MDL is not a risk-based value and using the MDL as a CPS is very conservative. Calcium is also both naturally occurring and a component of cement used in the construction of storage pads.

Calcium was detected in all storage pad rinsate samples (Table 1; attached). The calcium detection is likely associated with calcium released from the cement pad during pad cleaning. In addition, calcium was also detected within the equipment blank (collected from an unused plastic bottle that had previously contained deionized water), indicating that calcium appears to be ubiquitous within the environment.

Calcium is an essential nutrient. The Food and Nutrition Board at the Institute of Medicine of the National Academies (formerly National Academy of Sciences) identified a recommended daily allowance for calcium of 500 milligrams per day (mg/day)[1]. An associated RDA value of 250,000 micrograms per liter (µg/L) was derived from the 500 mg/day RDA-value; 500 mg/day divided by a drinking water ingestion rate of 2 liters/day and converted into µg/L (IOM, 1999[2]).

$$250{,}000\frac{\mu g}{L} = \frac{\text{RDA of } 500\,\frac{\text{mg}}{\text{day}} \times Conversion\ 1000\ \frac{\mu g}{mg}}{\text{Drinking Water Ingestion Rate of } 2\,\frac{\text{L}}{\text{day}}}$$

DuPont requests that the RDA-based value of 250,000 µg/L be used as the calcium CPS in place of the calcium MDL.

[1] Ross et al. DRI Dietary Reference Intakes Calcium Vitamin D. Committee to Review Dietary Reference Intakes for Vitamin D and Calcium. Food and Nutrition Board. Institute of Medicine of the National Academies. The National Academies Press.
[2] IOM. 1999. Institute of Medicine (IOM). Food and Nutrition Board, 1999. Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride. National Academy Press.

Requested Use of Alternate Criteria for Soil CPS

Based on a review of the soil analytical results DuPont requests an alternate CPS for 15 constituents. The identified 15 constituents as well as proposed alternate CPS are summarized in Table 2 (attached) and discussed in detail below.

8 Constituents: Identified CPS = MDL; Replace with Surrogate Constituent Risk Values

The following eight constituents do not have an EPA RSL; hence, use of the MDL-CPS was assigned.

Dimethyl phthalate
Phenanthrene
Alpha Chlordane
Chlordane (analytical)
delta-BHC
Endosulfan I
Endosulfan II
Gamma Chlordane

The above constituents had at least one detection above the MDL-CPS (see attached Table 2).

DuPont requests the use of surrogate constituent risk values in place of the conservative MDL-CPS. Surrogate constituents are chemically and toxicologically similar to the constituent of interest. Due to the similarities, the surrogate constituent's risk value can be applied when a risk value is not available for a constituent of interest. The eight surrogates and their associated Industrial Soil RSL values are identified below and in Table 2 (attached).

Original Constituent	CAS#	Surrogate Constituent	CAS#	Surrogate Industrial RSL (mg/kg) [(a)]
Dimethyl phthalate	131-11-3	Diethyl phthalate	84-66-2	660,000
Phenanthrene	85-01-8	Anthracene	120-12-7	230,000
Alpha Chlordane	5103-71-9	Chlordane (technical)	12789-03-6	7.7
Chlordane (analytical)	57-74-9	Chlordane (technical)	12789-03-6	7.7
delta-BHC	319-86-8	beta-BHC	319-85-7	1.3
Endosulfan I	959-98-8	Endosulfan[(b)]	115-29-7	7,000
Endosulfan II	33213-65-9	Endosulfan[(b)]	115-29-7	7,000
Gamma Chlordane	5103-74-2	Chlordane (technical)	12789-03-6	7.7

mg/kg = micrograms per kilogram

(a) November 2020 Industrial Soil Regional Screening Levels (RSLs) that are protective of a target cancer risk of 1E-06 and target hazard quotient of 1.

(b) Surrogate constituent Endosulfan to be compared against the sum of Endosulfan I + Endosulfan II analytical results per email from Melissa A. Ferree (DNREC) to Mary L. Glowacki (DuPont) dated January 7, 2021

DuPont requests that, because laboratory MDL are not risk-based values and surrogates are chemically and toxicologically similar, the eight identified surrogate RSL values be used as the CPS in place of the MDL-CPS.

3 Constituents: Identified CPS = RSL; All results non-detect; some MDL values were elevated

For the following three constituents, the EPA industrial RSL had been identified as the constituents CPS.

- 2-Acetylaminofluorene
- 3-Methylcholanthrene
- N-Nitroso-Di-N-Butylamine

The results for these constituents were non-detect in all soil samples (Table 2; attached). However, at least one non-detect was slightly above the RSL-CPS.

The laboratory method applied was identified in the approved Closure Plan. The laboratory method used was able to attain an MDL at or below the RSL. However, due to variations in the sample matrix or interference from other constituents, the non-detect MDL for at least one sample-result was slightly higher than the RSL-CPS.

Because the soil results were all non-detect for the three identified constituents, there is no evidence to indicate that these constituents are present. Therefore, DuPont requests the conclusion that the non-detects for the three constituents are not a concern.

N-Nitrosodiethylamine: Identified CPS = RSL; All results non-detect; MDL slightly above the RSL

The RSL-CPS for N-Nitrosodiethylamine = 0.015 milligrams per kilogram (mg/kg); the associated laboratory MDL = 0.2 mg/kg. The laboratory method applied was identified in the approved Closure Plan and is an agency-accepted method for N-Nitrosodiethylamine analysis. Discussions with several national environmental laboratories concluded that the EPA-approved laboratory methods currently in routine use are unable to achieve an MDL down to the identified RSL value.

All soil results were non-detect for N-Nitrosodiethylamine (Table 2; attached). DuPont requests that, since the RSL-CPS value cannot be reached using closure plan-identified and agency-accepted laboratory methodology, the MDL for N-Nitrosodiethylamine should be used as the CPS.

Chromium: Requests that the identified MDL-CPS be replaced with Delaware Hazardous Substance Cleanup Act (HSCA) value

Chromium does not have an EPA RSL soil value; hence, the MDL-CPS was identified. As noted previously, the MDL is not a risk-based value and using the MDL as a CPS is very conservative. However, the Delaware HSCA does have a risk-based value for total chromium. In addition, the HSCA chromium value has been identified as a background threshold value and is a value that was calculated based on Delaware background studies. DuPont concludes that the Delaware HSCA value is more representative of Delaware soils and therefore requests that the Delaware HSCA value for total chromium be used in place of the laboratory MDL.

Calcium: Request MDL-CPS be replaced with Recommended Daily Allowance (RDA) based value

Calcium does not have an EPA RSL soil value; hence, use of the MDL-CPS was identified. As noted previously, the MDL is not a risk-based value and using the MDL as a CPS is very conservative. Calcium is also both naturally occurring and a component of cement used in construction.

Calcium was detected in all storage pad soil samples (Table 2; attached). The calcium detected is likely either naturally occurring or associated with construction fill material.

As noted previously, the MDL is not a risk-based value and using the MDL as a CPS is very conservative; especially for a compound that is an essential nutrient. The Food and Nutrition Board at the Institute of Medicine of the National Academies (formerly National Academy of Sciences) identified a recommended daily allowance for calcium of 500 mg/day. Converting the RDA value from mg/day to mg/kg results in an RDA based value of 2,500,000 mg/kg. The RDA based value was calculated as follows:

$$2{,}500{,}000\,\frac{mg}{kg} = \frac{\text{RDA of } 500\,\frac{\text{mg}}{\text{day}}}{\text{Soil Ingestion Rate of } 200\,\frac{mg}{day} \times Conversion\ 10^{-6}\,\frac{kg}{mg}}$$

DuPont requests that the above Food and Nutrition Board RDA based calcium value of 2,500,000 mg/kg be used in place of the MDL-CPS.

Arsenic: Identified CPS = RSL; Delaware HSCA Value Recommended

The EPA RSL industrial soil value for arsenic is based on standard assumptions regarding exposure and risk assessment. The State of Delaware prepared arsenic specific background studies for Delaware and found that native Delaware soils were naturally high in arsenic. Arsenic background study concentrations ranged from 3.3 to 18 parts per million (ppm); the Delaware background arsenic concentrations exceed the EPA industrial soil RSL of 3 ppm.

Using the data collected from the background study, the State of Delaware identified an arsenic background threshold value of 11 ppm for the Delaware HSCA program.

Based on the studies performed by the State of Delaware and the higher natural background arsenic concentrations present, DuPont requests that the identified Delaware HSCA arsenic background threshold value of 11 ppm be applied to storage pad soil sample results.

Summary

In summary, regarding the Incinerator Storage Pad Closure soil and rinsate sample analytical results, DuPont requests the following:

- Soil and Rinsate:
  - Where the CPS = MDL and a surrogate constituent risk-based value is available, the surrogate risk value will be used.
  - Where the CPS = RSL and all results are non-detect but some non-detects are above RSL, the constituent non-detects above RSL are not a concern.
  - Where the CPS = RSL and all results are non-detect but the MDL is slightly above RSL, the MDL will be used as CPS.
  - Chromium and arsenic MDL-CPS be replaced with the Delaware HSCA background threshold values.
  - Calcium MDL-CPS will be replaced with the identified RDA based value.

A response regarding the above requests is appreciated. You may contact me via email at Mary.Glowacki-1@dupont.com.

Sincerely,

Mary Glowacki
Environmental Compliance Manager
DuPont Experimental Station

Table 1
Incinerator Area Storage Pad Rinsate Results, Closure Plan identified CPS, Request to Use Alternate Criteria

Location ID						EB	PAD A	PAD B	PAD B	PAD C	TB	Request to Use Alternate Criteria			
Field Sample ID						EQUIPMENT_BLANK-091020	PAD-A-091020	PAD-B-091020-D	PAD-B-091020	PAD-C-091020	TRIP_BLANK-091020				
Date Sampled						09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020	09/10/2020				
Sample Purpose						EB	FS	DUP	FS	FS	TB				
Start Depth - End Depth															
Parameter Name	Analytical Method	Filtered	Report Units	Source CPS Value	CPS_RINSATE	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Surrogate Constituent	CAS#	Surrogate Tap Water/MCL (ug/L)	Support for Change
Endosulfan I	8081B	N	UG/L	MDL	MDL	<0.0045	<0.0043	<0.0043	<0.0044	**0.052 J**		Endosulfan	115-29-7	100	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk value be used as the CPS in-place of the MDL-CPS. Surrogate constituent Endosulfan to be compared against the sum of Endosulfan I + Endosulfan II analytical results per email from Melissa A. Ferree (DNREC) to Mary L. Glowacki (DuPont) dated January 7, 2021
Amenable Cyanide	9012A	N	UG/L	MDL	MDL	<5.0 UJ	**6.6 J**	**6.7 J**	**5.7 J**	**11 J**		Cyanide	57-12-5	200	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk value be used as the CPS in-place of the MDL-CPS.
1,1,2,2-Tetrachloroethane	8260C	N	UG/L	RSL	0.076 UG/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
1,2-Dibromo-3-Chloropropane	8260C	N	UG/L	RSL	0.2 UG/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
1,2-Dibromoethane (EDB)	8260C	N	UG/L	RSL	0.05 UG/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Acrylonitrile	8260C	N	UG/L	RSL	0.052 UG/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Methacrylonitrile	8260C	N	UG/L	RSL	1.9 UG/L	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
1,4-Dioxane	8260C	N	UG/L	RSL	0.46 UG/L	<29	<29	<29	<29	<29	<29	na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
2,4-Dinitrotoluene	8270D	N	UG/L	RSL	0.24 UG/L	<1.0	<1.0	<1.0	<1.0	<1.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
2,6-Dinitrotoluene	8270D	N	UG/L	RSL	0.049 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
2-Acetylaminofluorene	8270D	N	UG/L	RSL	0.016 UG/L	<10	<10	<10	<10	<10		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
3-Methylcholanthrene	8270D	N	UG/L	RSL	0.0011 UG/L	<4.0	<4.0	<4.0	<4.0	<4.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
4,4'-Methylenebis-(2-Chlorobenzenamine)	8270D	N	UG/L	RSL	0.16 UG/L	<72	<72	<72	<72	<72		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
4-Chloroaniline	8270D	N	UG/L	RSL	0.37 UG/L	<4.0	<4.0	<4.0	<4.0	<4.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Benzo(A)Anthracene	8270D	N	UG/L	RSL	0.03 UG/L	<0.10	<0.10	<0.10	<0.10	<0.10		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Bis(2-Chloroethyl)Ether	8270D	N	UG/L	RSL	0.014 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Dibenz(A,H)Anthracene	8270D	N	UG/L	RSL	0.025 UG/L	<0.10	<0.10	<0.10	<0.10	<0.10		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Hexachlorobutadiene	8270D	N	UG/L	RSL	0.14 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Hexachloroethane	8270D	N	UG/L	RSL	0.33 UG/L	<1.0	<1.0	<1.0	<1.0	<1.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Nitrobenzene	8270D	N	UG/L	RSL	0.14 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
N-Nitrosodiethylamine	8270D	N	UG/L	RSL	0.00017 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
N-Nitroso-Di-N-Butylamine	8270D	N	UG/L	RSL	0.0027 UG/L	<12	<12	<12	<12	<12		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
N-Nitrosodi-N-Propylamine	8270D	N	UG/L	RSL	0.011 UG/L	<0.71	<0.71	<0.71	<0.71	<0.71		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
N-Nitrosopiperidine	8270D	N	UG/L	RSL	0.0082 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
N-Nitrosopyrrolidine	8270D	N	UG/L	RSL	0.037 UG/L	<0.51	<0.50	<0.51	<0.51	<0.51		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Pentachloronitrobenzene	8270D	N	UG/L	RSL	0.12 UG/L	<2.0	<2.0	<2.0	<2.0	<2.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Safrole	8270D	N	UG/L	RSL	0.096 UG/L	<2.0	<2.0	<2.0	<2.0	<2.0		na	na	na	All results were non-detect and multiple laboratories could not attain many of the RSL criteria. DuPont recommends that when the RSL-CPS value cannot be reached using standard, agency-accepted, laboratory methodology, that the sample MDL be used as the CPS.
Calcium	6020A	N	UG/L	MDL	MDL	**160 J**	**34000**	**35000 J**	**34000 J**	**35000**		Calcium	7740-70-2	RDA Based Value = 250,000	Calcium does not have an EPA MCL or Tapwater value; the MDL was selected as the CPS. However, calcium occurs naturally and is an essential nutriant. Based on the recommended daily alllowance (RDA), DuPont requests that an RDA based value be used as the Calcium CPS in place of the laboratory MDL.

Notes:

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Groups similar alternate criteria recommendations

Bolded value = Detected value

< = Non-detect value

UG/L = Micrograms per liter

J = Report result is an estimate

UJ = Not detected. Reporting limit may not be accurate or precise

Table 2
Incinerator Area Storage Pad Soil Results, Closure Plan identified CPS, Request to Use Alternate Criteria

Location ID						PAD-23-24-S	PAD-23-24-SUMPS	PAD-23-24-SUMPS	PAD-23-S-CTR	PAD-23-SW	PAD-24-0-S-CTR	PAD-24-0-SE	PAD-24-24-0-S	PAD-24-S-CTR	PAD-A-S-CTR	PAD-A-SE	PAD-A-SUMP	PAD-AB-S
Field Sample ID						PAD-23-24-S-0-0.5	PAD-23-24-SUMPS-0-0.5-D	PAD-23-24-SUMPS-0-0.5	PAD-23-S-CTR-0-0.5	PAD-23-SW-0-0.5	PAD-24-0-S-CTR-0-0.5	PAD-24-0-SE-0-0.5	PAD-24-24-0-S-0-0.5	PAD-24-S-CTR-0-0.5	PAD-A-S-CTR-0-0.5	PAD-A-SE-0-0.5	PAD-A-SUMP-2-3	PAD-AB-S-0-0.5
Date Sampled						08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/28/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020
Sample Purpose						FS	DUP	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Start Depth - End Depth						0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	2 - 3	0 - 0.5
Parameter Name	Analytical Method	Filtered	Report Units	Source of CPS value	Closure Plan CPS_SOIL	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result
Dimethyl Phthalate	8270D	N	MG/KG	MDL	MDL	<0.078	<0.074	<0.074	<0.081	<0.4	**0.42**	<0.88	**0.13 J**	<0.077	<0.074	<0.078	<0.08	<0.08
Phenanthrene	8270D	N	MG/KG	MDL	MDL	**0.069**	**0.025**	**0.043**	**0.022**	**0.14**	**0.061**	**0.16 J**	**0.024**	**0.098**	**0.31**	**0.34**	**0.033**	**0.12**
Alpha Chlordane	8081B	N	MG/KG	MDL	MDL	**0.0046 J**	**0.00020 J**	**0.00025 J**	**0.00046 J**	**0.00040 J**	<0.035	<0.037	**0.0013 J**	**0.0046 J**	**0.0032 J**	<0.0040	<0.00021	<0.0022
Chlordane (analytical)	8081B	N	MG/KG	MDL	MDL	<0.0047	<0.0044	<0.0045	<0.0049	<0.0049	<0.024	<0.026	<0.0047	<0.023	<0.0044	<0.093	<0.0048	<0.0048
delta-BHC	8081B	N	MG/KG	MDL	MDL	<0.00052	<0.00050	<0.00050	<0.00055	**0.0018**	<0.0026	<0.0030	<0.00053	<0.0026	<0.00050	<0.01	<0.00054	<0.00054
Endosulfan I	8081B	N	MG/KG	MDL	MDL	**0.0031 J**	<0.00024	<0.00024	<0.00027	**0.00037 J**	**0.0041 J**	**0.0044 J**	**0.0039 J**	**0.0043 J**	<0.00024	<0.0051	<0.00027	<0.00026
Endosulfan II	8081B	N	MG/KG	MDL	MDL	**0.015 J**	<0.0012	<0.0012	<0.0013	<0.0013	**0.012 J**	<0.025	<0.0065	**0.017**	**0.0012 J**	<0.026	<0.0013	<0.0013
Gamma Chlordane	8081B	N	MG/KG	MDL	MDL	**0.014 J**	<0.00028	**0.00034 J**	<0.00030	**0.00052 J**	<0.0015	<0.0016	**0.0079 J**	**0.014**	**0.00053 J**	<0.0058	<0.00030	**0.0015 J**
2-Acetylaminofluorene	8270D	N	MG/KG	RSL	0.6 MG/KG	<0.12	<0.11	<0.11	<0.12	<0.61	<0.12	<1.3	<0.12	<0.12	<0.11	<0.12	<0.12	<0.12
3-Methylcholanthrene	8270D	N	MG/KG	RSL	0.1 MG/KG	<0.031 UJ	<0.03 UJ	<0.03	<0.032 UJ	<0.16 UJ	<0.031	<0.35	<0.031	<0.031	<0.029 UJ	<0.031 UJ	<0.032 UJ	<0.032 UJ
N-Nitroso-Di-N-Butylamine	8270D	N	MG/KG	RSL	0.46 MG/KG	<0.078	<0.074	<0.074	<0.081	<0.4	<0.079	<0.88	<0.079	<0.077	<0.074	<0.078	<0.08	<0.08
N-Nitrosodiethylamine	8270D	N	MG/KG	RSL	0.015 MG/KG	<0.023	<0.022	<0.022	<0.024	<0.12	<0.024	<0.26	<0.024	<0.023	<0.022	<0.023	<0.024	<0.024
Chromium	6020A	N	MG/KG	MDL	MDL	**89**	**26**	**23 J**	**50 J**	**52 J**	**63 J**	**76**	**50**	**73 J**	**63**	**58**	**94**	**81**
Calcium	6020A	N	MG/KG	MDL	MDL	**3800**	**1300**	**940**	**1100**	**6100**	**5500**	**5900**	**4100**	**4300**	**1800 J**	**1500 J**	**2200 J**	**1500 J**
Arsenic	6020A	N	MG/KG	RSL	3 MG/KG	**13**	**4.7**	**4.8 J**	**41 J**	**8.2 J**	**17 J**	**28**	**25**	**20 J**	**7.2 J**	**5.5 J**	**5.2 J**	**9.5 J**

Notes:

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MG/KG = Milligrams per kilogram
J = Report result is an estimate
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R = Sample result rejected

Table 2
Incinerator Area Storage Pad Soil Results, Closure Plan identified CPS, Request to Use Alternate Criteria

Location ID						PAD-B-NW	PAD-B-S-CTR	PAD-B-SUMP	PAD-B-SW	PAD-B-W-CTR	PAD-G-E-CTR	PAD-G-E-NE	PAD-G-E-SE	PAD-G-S-CTR	PAD-G-S-SE	PAD-G-S-SW	PAD-G-S-SW
Field Sample ID						PAD-B-NW-0-0.5	PAD-B-S-CTR-0-0.5	PAD-B-SUMP-1.5-2	PAD-B-SW-0-0.5	PAD-B-W-CTR-0-0.5	PAD-G-E-CTR-0-0.5	PAD-G-E-NE-0-0.5	PAD-G-E-SE-0-0.5	PAD-G-S-CTR-0-0.5	PAD-G-S-SE-0-0.5	PAD-G-S-SW-0-0.5-D	PAD-G-S-SW-0-0.5
Date Sampled						08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020	08/27/2020
Sample Purpose						FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	DUP	FS
Start Depth - End Depth						0 - 0.5	0 - 0.5	1.5 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Parameter Name	Analytical Method	Filtered	Report Units	Source of CPS value	Closure Plan CPS_SOIL	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result	Report Result
Dimethyl Phthalate	8270D	N	MG/KG	MDL	MDL	<0.073	<0.076	<0.081	<0.08	<0.077	<0.73	<0.35	<0.79	<0.77	<0.74	<0.38	<0.078 UJ
Phenanthrene	8270D	N	MG/KG	MDL	MDL	**0.023**	**0.06**	**16**	**0.24**	**0.079**	**0.22**	**0.035 J**	**0.17 J**	**0.32**	**0.16 J**	**0.059 J**	**0.026**
Alpha Chlordane	8081B	N	MG/KG	MDL	MDL	<0.00019	<0.00019	**0.01**	**0.00054 J**	**0.0013**	**0.0018 J**	**0.00079 J**	**0.0012**	<0.00097	<0.00094	**0.0096 J**	**0.0034 J**
Chlordane (analytical)	8081B	N	MG/KG	MDL	MDL	<0.0044	<0.0046	**0.19**	<0.0048	<0.0046	<0.022	**0.0088 J**	<0.0047	<0.023	<0.022	**0.062**	**0.025**
delta-BHC	8081B	N	MG/KG	MDL	MDL	<0.00049	<0.00051	<0.00054	<0.00054	<0.00052	<0.0024	<0.00048	<0.00053	<0.0026	<0.0025	<0.00052	<0.00053 UJ
Endosulfan I	8081B	N	MG/KG	MDL	MDL	<0.00024	<0.00025	<0.00038	<0.00027	**0.00048 J**	<0.0012	<0.00023	<0.00026	<0.0013	<0.0012	**0.00059 J**	<0.00026 UJ
Endosulfan II	8081B	N	MG/KG	MDL	MDL	<0.0012	<0.0013	<0.0013	<0.0013	<0.0013	<0.0060	<0.0012	<0.0013	<0.0063	<0.0061	<0.0013	<0.0013 UJ
Gamma Chlordane	8081B	N	MG/KG	MDL	MDL	<0.00027	<0.00028	**0.027**	**0.0011**	<0.0014	**0.0015 J**	**0.0013**	**0.0013**	<0.0014	<0.0014	**0.01 J**	**0.0038 J**
2-Acetylaminofluorene	8270D	N	MG/KG	RSL	0.6 MG/KG	<0.11	<0.11	<0.12	<0.12	<0.12	<1.1	<0.52	<1.2	<1.2	<1.1	<0.58	<0.12
3-Methylcholanthrene	8270D	N	MG/KG	RSL	0.1 MG/KG	<0.029 UJ	<0.031 UJ	<0.032 UJ	<0.032 UJ	<0.031 UJ	<0.29 UJ	<0.14 UJ	<0.32 UJ	<0.31 UJ	<0.3 UJ	<0.15 UJ	<0.031 UJ
N-Nitroso-Di-N-Butylamine	8270D	N	MG/KG	RSL	0.46 MG/KG	<0.073	<0.076	<0.081	<0.08	<0.077	<0.73	<0.35	<0.79	<0.77	<0.74	<0.38	<0.078
N-Nitrosodiethylamine	8270D	N	MG/KG	RSL	0.015 MG/KG	<0.022	<0.023	<0.024	<0.024	<0.023	<0.22	<0.1	<0.24	<0.23	<0.22	<0.12	<0.023
Chromium	6020A	N	MG/KG	MDL	MDL	**15**	**52**	**55**	**43**	**20**	**45**	**41**	**41**	**79**	**70**	**39**	**52**
Calcium	6020A	N	MG/KG	MDL	MDL	**800 J**	**1200 J**	**2900 J**	**2000 J**	**1700 J**	**8100 J**	**6600 J**	**14000 J**	**20000 J**	**19000 J**	**9400 J**	**11000 J**
Arsenic	6020A	N	MG/KG	RSL	3 MG/KG	**1.5 J**	**5.9 J**	**7.6 J**	**5.5 J**	**4.6 J**	**3.0 J**	**1.5 J**	**3.3 J**	**4.7 J**	**4.8 J**	**6.6 J**	**4.8 J**

Notes:

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Bolded value = Detected value
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MG/KG = Milligrams per kilogram
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Table 2
Incinerator Area Storage Pad Soil Results, Closure Plan identified CPS, Request to Use Alternate Criteria

Location ID Field Sample ID Date Sampled Sample Purpose Start Depth - End Depth						Request to Use Alternate Criteria			
Parameter Name	Analytical Method	Filtered	Report Units	Source of CPS value	Closure Plan CPS_SOIL	Surrogate Constituent	CAS#	Surrogate Indust RSL (mg/kg)	Support for Change
Dimethyl Phthalate	8270D	N	MG/KG	MDL	MDL	Diethyl phthalate	84-66-2	660000	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
Phenanthrene	8270D	N	MG/KG	MDL	MDL	Anthracene	120-12-7	230000	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
Alpha Chlordane	8081B	N	MG/KG	MDL	MDL	Chlordane (technical)	12789-03-6	7.7	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
Chlordane (analytical)	8081B	N	MG/KG	MDL	MDL	Chlordane (technical)	12789-03-6	7.7	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
delta-BHC	8081B	N	MG/KG	MDL	MDL	beta-BHC	319-85-7	1.3	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
Endosulfan I	8081B	N	MG/KG	MDL	MDL	Endosulfan	115-29-7	7000	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS. Surrogate constituent Endosulfan to be compared against the sum of Endosulfan I + Endosulfan II analytical results per email from Melissa A. Ferree (DNREC) to Mary L. Glowacki (DuPont) dated January 7, 2021.
Endosulfan II	8081B	N	MG/KG	MDL	MDL	Endosulfan	115-29-7	7000	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS. Surrogate constituent Endosulfan to be compared against the sum of Endosulfan I + Endosulfan II analytical results per email from Melissa A. Ferree (DNREC) to Mary L. Glowacki (DuPont) dated January 7, 2021.
Gamma Chlordane	8081B	N	MG/KG	MDL	MDL	Chlordane (technical)	12789-03-6	7.7	Laboratory MDL is not a risk based value. Surrogates are chemically and toxicologically similar. DuPont requests that the identified surrogate RSL risk values be used as the CPS in-place of the MDL-CPS.
2-Acetylaminofluorene	8270D	N	MG/KG	RSL	0.6 MG/KG	na	na	na	The CPS = RSL. All results were non-detect. However due to sample interference, for some samples the MDL was slightly higher than the RSL. DuPont requests that, where all sample results are non-detect and there is no indication that the constituent is present, it can be concluded that the constituent non-detects are not a concern.
3-Methylcholanthrene	8270D	N	MG/KG	RSL	0.1 MG/KG	na	na	na	The CPS = RSL. All results were non-detect. However due to sample interference, for some samples the MDL was slightly higher than the RSL. DuPont requests that, where all sample results are non-detect and there is no indication that the constituent is present, it can be concluded that the constituent non-detects are not a concern.
N-Nitroso-Di-N-Butylamine	8270D	N	MG/KG	RSL	0.46 MG/KG	na	na	na	The CPS = RSL. All results were non-detect. However due to sample interference, for some samples the MDL was slightly higher than the RSL. DuPont requests that, where all sample results are non-detect and there is no indication that the constituent is present, it can be concluded that the constituent non-detects are not a concern.
N-Nitrosodiethylamine	8270D	N	MG/KG	RSL	0.015 MG/KG	na	na	na	The CPS = RSL. All results were non-detect. However MDL was slightly higher than the RSL. DuPont requests that, since the RSL-CPS value cannot be reached using closure plan-identified and agency-accepted laboratory methodology, the MDL for N-Nitrosodiethylamine should be used as the CPS.
Chromium	6020A	N	MG/KG	MDL	MDL	Chromium, Total	7440-47-3	DEL HSCA = 214	Total Chromium does not have an EPA RSL soil value; the MDL was selected as the CPS. However, the Delaware HSCA does have a background threshold value for total chromium. DuPont requests that Delaware's HSCA value for total chromium be used in-place of the laboratory MDL.
Calcium	6020A	N	MG/KG	MDL	MDL	Calcium	7740-70-2	RDA Based Value = 2,500,000	Calcium does not have an EPA RSL soil value; the MDL was selected as the CPS. However, calcium occurs naturally and is an essential nutriant. Based on the recommended daily alllowance (RDA), DuPont requests that an RDA based value be used as the Calcium CPS in place of the laboratory MDL.
Arsenic	6020A	N	MG/KG	RSL	3 MG/KG	Arsenic	7440-38-2	DEL HSCA = 11	EPA RSL values for arsenic = 3 mg/kg. However, based on the studies performed by the State of Delaware, and the higher natural background arsenic concentrations present, DuPont requests that the Delaware HSCA background threshold value of 11 ppm be used in place of the EPA RSL.

Notes:

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Groups similar alternate criteria recommendations.

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STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
89 KINGS HIGHWAY
DOVER, DE 19901

COMPLIANCE & PERMITTING

PHONE: (302) 739-9403
FAX: (302) 739-5060

January 14, 2021

Ms. Mary Glowacki
Environmental Compliance Manager
DuPont Experimental Station
P.O. Box 80249
Wilmington, DE 19880-0249

Subject: Approval of Alternative Closure Performance Standards
Reference: DED003930807; File Code: 15

Dear Ms. Glowacki:

The Delaware Department of Natural Resources and Environmental Control (DNREC), Compliance and Permitting Section (CAPS) is in receipt of your January 12, 2021 letter requesting approval to utilize alternative closure performance standards. These alternative standards are necessary to address instances where there is not a risk-based screening level set by the United States Environmental Protection Agency (USEPA) for a certain constituent or instances where the laboratory method detection limit is higher than the risk-based screening level identified for certain constituents.

The CAPS consulted with staff in DNREC's Remediation Section and concurs that the alternative closure performance standards proposed by DuPont are appropriate. As such, the CAPS approves the use of the alternative closure performance standards proposed in DuPont's January 12, 2021 letter.

Should you have any questions, please do not hesitate to contact Melissa A. Ferree of the CAPS at (302) 739-9403.

Sincerely,

Jason W. Sunde
Program Administrator
Compliance and Permitting Section

JWS:MAF:cr
MAF2101.doc

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
89 KINGS HIGHWAY
DOVER, DE 19901

COMPLIANCE & PERMITTING

PHONE: (302) 739-9403
FAX: (302) 739-5060

February 9, 2021

Ms. Mary Glowacki
Environmental Compliance Manager
DuPont Experimental Station
P.O. Box 80249
Wilmington, DE 19880-0249

Subject: Comments on Storage Pad Closure Report
Reference: DED003930807; File Code: 15

Dear Ms. Glowacki:

The Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Waste and Hazardous Substances (DWHS), Compliance and Permitting Section (CAPS) is in receipt of DuPont's February 3, 2021 closure report related to the closure of on-site hazardous waste storage pads. The CAPS consulted with the Division's Remediation Section to develop the following comments:

1. DuPont requested to utilize cyanide as a surrogate for amenable cyanide related to soil samples. The CAPS approves this request.

2. DuPont identified four constituents that exceeded the approved closure performance standards and provided justification as to why the results were not a concern. The hazardous waste closure process relies on a risk-based clean closure standard. As such, the CAPS will require DuPont to determine the human health risk associated with the four constituents by using the Risk Assessment Information System (RAIS) Risk Calculator, which can be found here: https://rais.ornl.gov/.

3. DuPont identified that soil sampling results show arsenic concentrations above the closure performance standard and attributed the elevated arsenic concentrations to the use of historic fill material during construction. DuPont concludes that there is no concern related to the elevated arsenic concentrations, as the elevated concentrations were previously identified during a 1990 RCRA Facility Investigation (RFI). However, the closure report does not describe actions required at that time to address the elevated concentrations. In addition to including arsenic in the risk calculation identified in Comment #2, the CAPS believes the closure report should be modified to indicate that arsenic concentrations from recent sampling events are not higher than those identified in the 1990 RFI. Additionally, the closure report should describe that while elevated arsenic levels were identified historically, EPA concluded the area met risk-based clean closure standards based on industrial site use and that a deed restriction is in place in the area. The deed restriction will ultimately be transitioned to an environmental covenant.

4. DuPont identified four constituents that exceeded the approved closure performance standards for rinsate generated from the cleaning of Pad C and provided justification as to why the constituents were not a concern. Given the Department relies on a risk-based clean closure standard, the CAPS will require DuPont to determine the human health risk associated with the four constituents by using the RAIS Risk Calculator identified above. The CAPS understands that there is not a scenario in the RAIS Risk Calculator that describes the activities at the storage pad, as the rinsate is not being ingested or used for showering. However, the CAPS suggests using the Indoor Worker Tapwater scenario initially as a very conservative model to identify potential risk. The exposure criteria assumptions in this model may be modified to more accurately describe the exposure duration, etc. based on site activities.

Should you have any questions, please do not hesitate to contact Melissa A. Ferree of the CAPS at (302) 739-9403.

Sincerely,

Jason W. Sunde
Program Administrator
Compliance and Permitting Section

JWS:MAF:cr
MAF2102.doc

Appendix E

Soil Sample Lithological Description

TWT-LOC-1

- 10-22-2021 – Sample Time 9:45AM
- Boring Depth 0”-9” (auger refusal encountered)
- Material: Silt, trace Sand, some Gravel
- Moisture: Dry
- Color: Brown
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

TWT-LOC-2

- 10-22-2021 – Sample Time 9:15AM
- Boring Depth 0”-9” (auger refusal encountered)
- Material: Silt some-trace pebbles
- Moisture: Dry
- Color: reddish-brown
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

TWT-LOC-3

- 10-22-2021 – Sample Time 9:00AM
- Boring Depth 0”-9” (auger refusal encountered)
- Material: Fill Material - Silt, Gravel, Pebbles
- Moisture: Damp to Dry
- Color: Brown
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

TWT-LOC-4

- 10-22-2021 – Sample Time 9:30AM
- Boring Depth 0”-12”
- Material: Sand, some Silt, some-trace Gravel
- Moisture: Damp
- Color: Tan
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

TWT-LOC-5

- 10-22-2021 – Sample Time 10:00AM
- Boring Depth 0”-12”
- Material: Fill Material - Silt with Gravel, trace Clay
- Moisture: Damp
- Color: Color not noted in field book
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

TWT-LOC-6

- 10-22-2021 – Sample Time 10:30AM
- Boring Depth 0”-12”
- Material: Fill Material – Gravel and Silt
- Moisture: Dry
- Color: Dusky Brown
- PID = NIR (No instrument reaction)
- Method Sample Collection: Hand Auger into Stainless Steel Bowl

Appendix F

Soil Laboratory Analytical Results

AECOM

ADQM Data Review

Site: DuPont Experimental Station, Wilmington DE

Project: Incineration Area Soil Sampling 2021

Project Reviewer: Sharon Nordstrom

AECOM

Sample Summary

Field Sample ID	Lab Sample ID	Sample Matrix	Sample Date	Sample Time	Sample Purpose
EXP-TWT-LOC-1	410-60264-1	Soil Composite	10/22/2021	09:45	FS
EXP-TWT-LOC-2	410-60264-2	Soil Composite	10/22/2021	09:15	FS
EXP-TWT-LOC-3	410-60264-3	Soil Composite	10/22/2021	09:00	FS
EXP-TWT-LOC-4	410-60264-4	Soil Composite	10/22/2021	09:30	FS
EXP-TWT-LOC-5	410-60264-5	Soil Composite	10/22/2021	10:00	FS
EXP-TWT-LOC-5-D	410-60264-8	Soil Composite	10/22/2021	10:00	DUP
EXP-TWT-LOC-6	410-60264-6	Soil Composite	10/22/2021	10:30	FS
EXP-TWT-TB-102221	410-60264-7	Blank Water	10/22/2021	06:00	TB
EXP-TWT-EB-102221	410-60305-1	Blank Water	10/22/2021	11:45	EB

FS= Field Sample
DUP=Field Duplicate
EB=Equipment Blank
TB=Trip Blank

AECOM

Analytical Protocols

Lab Name	Lab Method	Parameter Name	Sampling Program
Eurofins Lancaster Laboratories	SW-846 8011	1,2-Dibromoethane (EDB)	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8015B	Target Alcohols	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8081B	Organochlorine Pesticides	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8151A	Herbicides	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8260C	Volatile Organics	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8270D	Semi-volatile Organics	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8270D SIM	1,4-Dioxane	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8290A	2,3,7,8-TCDD	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8290A	Total HXCDD	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 8318	Carbamate Pesticides (soil)	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	EPA 531.1	Carbamate Pesticides (equipment blank)	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 9012A	Amenable Cyanide	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 9012A	Total Cyanide	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	EPA Moisture	Percent Solids/Moisture	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Arsenic	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Barium	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Cadmium	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Calcium	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Chromium	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Lead	Incineration Area Soil Sampling 2021

Eurofins Lancaster Laboratories	SW-846 6020A	Nickel	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Selenium	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 6020A	Silver	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 7471A	Mercury (soil)	Incineration Area Soil Sampling 2021
Eurofins Lancaster Laboratories	SW-846 7470A	Mercury (equipment blank)	Incineration Area Soil Sampling 2021

AECOM

ADQM Data Review Checklist

Item	Description	Yes	No*	Not Applicable (NA)*	DVM Narrative Report	Laboratory Report	Exception Report (ER) #
A	Did samples meet laboratory acceptability requirements upon receipt (i.e., intact, within temperature, properly preserved, and no headspace where applicable)?	X					ER#1
B	Were samples received by the laboratory in agreement with the associated chain of custody?	X					
C	Was the chain of custody properly completed by the laboratory and/or field team?	X					
D	Were samples prepped/analyzed by the laboratory within method holding times?	X					ER #2
E	Were QA/QC criteria met by the laboratory (method blanks, LCSs/LCSDs, MSs/MSDs, PDSs, SDs, duplicates/replicates, surrogates, total/dissolved differences/RPDs, sample results within calibration range)?		X		X	X	ER #3
F	Were detections in field/equipment/trip blanks at levels not requiring sample data qualification?	X					
G	Were all data usable and not R qualified?		X				ER #3

ER#	Description
#1	A set of 40 ml HCl-preserved VOA vials were provided for the aqueous trip blank and equipment blank samples. The target volatile Acrylonitrile is unstable in acid-preserved samples, and the non-detect results reported for this analyte in both blanks may not be accurate. However, no Acrylonitrile detections were reported in the investigative soil samples.
#2	Furan (CAS 110-00-9) was requested for the project samples and listed on the COC, but it was determined that the analyte is no longer included in the laboratory service offerings, and no alternate supplier for the analysis could be located. After consultation with the project team, the Furan analysis was cancelled.
#3	The non-compliant spike and surrogate recoveries and assigned data usability qualifiers are summarized in the DVM Narrative and discussed in the laboratory report narratives. The laboratory reported that the presence of sample matrix interferences in the soils were a factor in the analyses and spike recoveries, particularly for the organochlorine pesticides, which were analyzed at 5x- 20x dilutions. The analyte reporting limits were elevated for the samples/analyses requiring dilutions.
Other QA/QC Items to Note:	

* See DVM Narrative Report, Laboratory Report, and/or ER # for further details as indicated.

The electronic data deliverables submitted for this project were reviewed via the Data Verification Module (DVM) process. Overall, the data are acceptable for use without qualification, except as noted on the attached DVM Narrative Report.

AECOM

Data Verification Module (DVM)

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software, Locus EIM™ database Data Verification Module (DVM), and manual reviewer evaluations. The data are evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike (MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- Difference/RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference/percent difference between total and dissolved sample pairs

There are two qualifier fields in EIM:

Laboratory Qualifier is the qualifier assigned by the laboratory and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the laboratory qualifiers. As they are laboratory descriptors they are not to be used when evaluating the data.

Validation Qualifier is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the laboratory qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

Qualifier	Definition
B	Not detected substantially above the level reported in the laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
J	Analyte present. Reported value may not be accurate or precise.
UJ	Not detected. Reporting limit may not be accurate or precise.

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier.**

If the data have been validated by a third party, the field **“Validated By”** will be set to the validator (e.g., ESI for Environmental Standards, Inc.).

DVM Narrative Report

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the data rejection level. The reported non-detect result is unusable.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-1	10/22/2021	410-60264-1	beta-BHC	2.6	UG/KG	MDL	2.6	6.0	R	8081B		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	delta-BHC	2.7	UG/KG	MDL	2.7	6.0	R	8081B		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Endosulfan II	6.6	UG/KG	MDL	6.6	14	R	8081B		3546

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Only one surrogate has relative percent recovery (RPR) values outside control limits and the parameter is a dioxin/furan (Nondetects).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-EB-102221	10/22/2021	410-60305-1	2,3,7,8-TCDD	0.094	PG/L	MDL	0.094	5.2	UJ	8290A		8290A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Two or more surrogates had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-4	10/22/2021	410-60264-4	1,2-Dibromoethane (EDB)	0.25	UG/KG	MDL	0.25	0.59	UJ	8011		8011

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Two or more surrogates had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Silvex	0.84	UG/KG	MDL	0.84	1.9	UJ	8151A		8151A
EXP-TWT-LOC-6	10/22/2021	410-60264-6	2,4-Dichlorophenoxyacetic Acid	13	UG/KG	MDL	13	40	UJ	8151A		8151A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Lindane	1.3	UG/KG	MDL	1.3	5.0	UJ	8081B		3546
EXP-TWT-LOC-2	10/22/2021	410-60264-2	2,4-Dichlorophenoxyacetic Acid	13	UG/KG	MDL	13	40	UJ	8151A		8151A
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Endosulfan I	1.3	UG/KG	MDL	1.3	5.0	UJ	8081B		3546
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Silvex	0.89	UG/KG	MDL	0.89	2.0	UJ	8151A		8151A
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	2,4-Dichlorophenoxyacetic Acid	14	UG/KG	MDL	14	43	UJ	8151A		8151A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Only one surrogate has relative percent recovery (RPR) values outside control limits and the parameter is a dioxin/furan (Detects).

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-EB-102221	10/22/2021	410-60305-1	Total HXCDD	2.9	PG/L	MDL	0.071	26	J	8290A		8290A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason High relative percent difference (RPD) observed between field duplicate and parent sample. The reported result may be imprecise.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	2,3,7,8-TCDD	2.5	PG/G	MDL	0.11	1.2	J	8290A		8290A
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Chrysene	350	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Benzo(A)Anthracene	330	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Lead	140	MG/KG	MDL	0.28	1.1	J	6020A		3050B
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Mercury	6.6	MG/KG	MDL	0.29	0.69	J	7471A		7471A
EXP-TWT-LOC-5	10/22/2021	410-60264-5	Chrysene	180	UG/KG	MDL	3.9	20	J	8270D		3546
EXP-TWT-LOC-5	10/22/2021	410-60264-5	Benzo(A)Anthracene	170	UG/KG	MDL	3.9	20	J	8270D		3546
EXP-TWT-LOC-5	10/22/2021	410-60264-5	Lead	77	MG/KG	MDL	0.044	0.18	J	6020A		3050B
EXP-TWT-LOC-5	10/22/2021	410-60264-5	Mercury	2.5	MG/KG	MDL	0.29	0.70	J	7471A		7471A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Two or more surrogates had relative percent recovery (RPR) values less than the lower control limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-2	10/22/2021	410-60264-2	Silvex	1.8	UG/KG	MDL	0.83	1.9	J	8151A		8151A

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit but above the rejection limit. The reported result may be biased low.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-4	10/22/2021	410-60264-4-F	Methanol	420	UG/KG	MDL	240	1200	J	8015B	DISWAT	
EXP-TWT-LOC-1	10/22/2021	410-60264-1	4,4'-DDE	3.5	UG/KG	MDL	2.0	10	J	8081B		3546

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-5	10/22/2021	410-60264-5	Trichloroethene	2.0	UG/KG	MDL	0.44	4.4	J	8260C		5035
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Amenable Cyanide	0.25	MG/KG	MDL	0.22	0.60	J	9012A		
EXP-TWT-LOC-2	10/22/2021	410-60264-2	Anthracene	12	UG/KG	MDL	3.7	18	J	8270D		3546
EXP-TWT-LOC-2	10/22/2021	410-60264-2	Dibenzofuran	25	UG/KG	MDL	18	41	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Tetrahydrofuran	1.2	UG/KG	MDL	1.1	8.5	J	8260C		5035
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Pyrene	9.7	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Fluoranthene	8.5	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Chrysene	7.7	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Benzo(A)Pyrene	7.2	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Benzo(A)Anthracene	6.9	UG/KG	MDL	4.0	20	J	8270D		3546
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Acetone	8.0	UG/KG	MDL	6.4	21	J	8260C		5035
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Mercury	0.064	MG/KG	MDL	0.029	0.071	J	7471A		7471A
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Selenium	0.17	MG/KG	MDL	0.16	0.48	J	6020A		3050B
EXP-TWT-LOC-4	10/22/2021	410-60264-4	Phenanthrene	4.8	UG/KG	MDL	4.7	20	J	8270D		3546
EXP-TWT-LOC-2	10/22/2021	410-60264-2	1,2-Dichlorobenzene	39	UG/KG	MDL	18	41	J	8270D		3546
EXP-TWT-LOC-2	10/22/2021	410-60264-2	Acetophenone	22	UG/KG	MDL	18	55	J	8270D		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Tetrachloroethene	0.73	UG/KG	MDL	0.44	4.4	J	8260C		5035
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Dimethyl Phthalate	130	UG/KG	MDL	76	190	J	8270D		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Endosulfan II	41	UG/KG	MDL	25	52	J	8081B		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Gamma Chlordane	14	UG/KG	MDL	5.7	19	J	8081B		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Chlordane	220	UG/KG	MDL	91	380	J	8081B		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	4,4'-DDE	12	UG/KG	MDL	7.5	38	J	8081B		3546
EXP-TWT-LOC-3	10/22/2021	410-60264-3	Naphthalene	8.5	UG/KG	MDL	7.6	19	J	8270D		3546

Site: Exp Station **Sampling Program:** Incineration Area Soil Sampling 2021 **Validation Options:** LABSTATS

Validation Reason The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

Field Sample ID	Date Sampled	Lab Sample ID	Analyte	Result	Units	Type	MDL	PQL	Validation Qualifier	Analytical Method	Pre-prep	Prep
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Naphthalene	8.7	UG/KG	MDL	7.9	20	J	8270D		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	1,2-Dichlorobenzene	41	UG/KG	MDL	20	44	J	8270D		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Cyanide	250	UG/KG	MDL	220	600	J	9012A		9012A
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Selenium	0.41	MG/KG	MDL	0.15	0.45	J	6020A		3050B
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Trichloroethene	0.74	UG/KG	MDL	0.46	4.6	J	8260C		5035
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	4,4'-DDT	40	UG/KG	MDL	19	41	J	8081B		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	4-Methylphenol (p-Cresol)	44	UG/KG	MDL	20	60	J	8270D		3546
EXP-TWT-LOC-1	10/22/2021	410-60264-1	Bis(2-Ethylhexyl)Phthalate	83	UG/KG	MDL	79	200	J	8270D		3546
EXP-TWT-LOC-5-D	10/22/2021	410-60264-8	Acetophenone	30	UG/KG	MDL	20	60	J	8270D		3546
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Tetrachloroethene	1.6	UG/KG	MDL	0.57	5.7	J	8260C		5035
EXP-TWT-LOC-6	10/22/2021	410-60264-6	2,3,7,8-TCDD	0.92	PG/G	MDL	0.043	1.1	J	8290A		8290A
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Cyanide	250	UG/KG	MDL	200	550	J	9012A		9012A
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Chloroform	1.2	UG/KG	MDL	0.69	5.7	J	8260C		5035
EXP-TWT-LOC-6	10/22/2021	410-60264-6	4,4'-DDD	6.9	UG/KG	MDL	3.7	19	J	8081B		3546
EXP-TWT-LOC-6	10/22/2021	410-60264-6	4,4'-DDE	18	UG/KG	MDL	3.7	19	J	8081B		3546
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Selenium	0.38	MG/KG	MDL	0.13	0.39	J	6020A		3050B
EXP-TWT-LOC-6	10/22/2021	410-60264-6	Amenable Cyanide	0.25	MG/KG	MDL	0.20	0.56	J	9012A		

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-60264-1
Client Project/Site: Experimental Station
Revision: 1

For:
AECOM
ADQM
4051 Ogletown Road
Suite 300
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Attn: Ms. Sharon Nordstrom

Vanessa M. Badman

Authorized for release by:
11/11/2021 2:39:48 PM

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LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Vanessa Badman
Project Manager
11/11/2021 2:39:48 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-60264-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-60264-1

REVISION

The report being provided is a revision of the original report sent on 11/9/2021. The report (revision 1) is being revised due to a client request to not show the isomers on the lab report for method 8290.

Report revision history

Receipt
The samples were received on 10/22/2021 4:22 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7°C and 4.2°C

Receipt Exceptions
All water methods were selected on COC for sample, however the laboratory only received 40 ml HCl vials. The sample was entered per the containers received.

TWT-TB-102221 (410-60264-7)

GC/MS VOA
Method 8260C: The preservative used in the sample containers provided is not compatible with the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid: TWT-TB-102221 (410-60264-7). The requested target analyte list includes Acrylonitrile, acid-labile compounds that degrade in an acidic medium.

Method 8260C: Internal standard (ISTD) response for the following sample was outside of acceptance limits: TWT-LOC-6 (410-60264-6). The sample(s) was not re-analyzed due to insufficient volume.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D_SIM: Internal standard (ISTD) response for the Method Blank associated with 410-188704 was outside of acceptance limits: TWT-LOC-1 (410-60264-1), TWT-LOC-2 (410-60264-2), TWT-LOC-3 (410-60264-3) and TWT-LOC-4 (410-60264-4). Due to laboratory error, the incorrect amount of internal standard was added to the Method Blank. The concentrations were adjusted accordingly.

Method 8270D_SIM: The following sample was diluted due to the nature of the sample matrix: TWT-LOC-1 (410-60264-1). Elevated reporting limits (RLs) are provided.

Method 8270D_SIM: Internal standard (ISTD) response for the Method Blank associated with 410-189558 was outside of acceptance limits: TWT-LOC-5 (410-60264-5), TWT-LOC-6 (410-60264-6) and TWT-LOC-5-D (410-60264-8). Due to laboratory error, the incorrect amount of internal standard was added to the Method Blank. The concentrations were adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Hydrocarbons
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: Surrogate recovery for the following sample was outside control limits: TWT-LOC-4 (410-60264-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Job ID: 410-60264-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
Method 8151A: The 2,4-Dichlorophenylacetic acid surrogate recovery for the following samples was outside acceptance limits (low biased) on the primary column: TWT-LOC-6 (410-60264-6). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method 8151A: The 2,4-Dichlorophenylacetic acid surrogate recovery for the blank associated with preparation batch 410-187993 and analytical batch 410-188009 was outside the lower control limits.

Method 8151A: The surrogate recovery for the blank associated with preparation batch 410-189567 and analytical batch 410-189660 was outside the lower control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
Method 8081B: Surrogate recovery for the following sample was outside control limits: TWT-LOC-1 (410-60264-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8081B: The continuing calibration verification (CCV) recovered above the upper control limit for 4,4'-DDT. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. TWT-LOC-1 (410-60264-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Dioxin
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1 — Lab Sample ID: 410-60264-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	41	J	44	20	ug/Kg	1	☼	8270D	Total/NA
4-Methylphenol	44	J	60	20	ug/Kg	1	☼	8270D	Total/NA
Anthracene	28		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	140		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	160		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	180		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	34		20	7.9	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	280		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	100		20	4.8	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	8.7	J	20	7.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	150		20	4.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	250		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Bis(2-ethylhexyl) phthalate	83	J	200	79	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDE (1C)	3.5	J F1	10	2.0	ug/Kg	5	☼	8081B	Total/NA
2,3,7,8-TCDD	7.2		1.2	0.11	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	180	I B	5.9	0.080	ng/Kg	1	☼	8290A	Total/NA
Arsenic	37		0.43	0.14	mg/Kg	2	☼	6020A	Total/NA
Barium	110		0.43	0.20	mg/Kg	2	☼	6020A	Total/NA
Cadmium	0.78		0.11	0.054	mg/Kg	2	☼	6020A	Total/NA
Calcium	36000	B	210	80	mg/Kg	10	☼	6020A	Total/NA
Chromium	42		0.43	0.16	mg/Kg	2	☼	6020A	Total/NA
Lead	32		0.21	0.054	mg/Kg	2	☼	6020A	Total/NA
Nickel	25		0.43	0.17	mg/Kg	2	☼	6020A	Total/NA
Selenium	0.57		0.43	0.14	mg/Kg	2	☼	6020A	Total/NA
Silver	1.1		0.11	0.043	mg/Kg	2	☼	6020A	Total/NA
Mercury	0.38		0.072	0.030	mg/Kg	1	☼	7471A	Total/NA
Cyanide, Amenable	0.25	J	0.60	0.22	mg/Kg	1	☼	9012A	Total/NA
Cyanide, Total	0.25	J	0.60	0.22	mg/Kg	1	☼	9012A	Total/NA

Client Sample ID: TWT-LOC-2 — Lab Sample ID: 410-60264-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	39	J	41	18	ug/Kg	1	☼	8270D	Total/NA
Acetophenone	22	J	55	18	ug/Kg	1	☼	8270D	Total/NA
Anthracene	12	J	18	3.7	ug/Kg	1	☼	8270D	Total/NA
Dibenzofuran	25	J	41	18	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	47		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	32		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	67		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	120		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	34		18	4.4	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	33		18	7.4	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	99		18	4.4	ug/Kg	1	☼	8270D	Total/NA
Pyrene	95		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Bis(2-ethylhexyl) phthalate	190		180	74	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDT (1C)	37		37	17	ug/Kg	20	☼	8081B	Total/NA
Silvex (2,4,5-TP) (2C)	1.8	J p F1 *-	1.9	0.83	ug/Kg	1	☼	8151A	Total/NA
2,3,7,8-TCDD	3.1		1.1	0.14	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	110	B	5.4	0.054	ng/Kg	1	☼	8290A	Total/NA
Arsenic	4.3		0.33	0.11	mg/Kg	2	☼	6020A	Total/NA
Barium	140		0.33	0.15	mg/Kg	2	☼	6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TWT-LOC-2 (Continued) — Lab Sample ID: 410-60264-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.60		0.084	0.042	mg/Kg	2	☼	6020A	Total/NA
Calcium	1900	B	170	63	mg/Kg	10	☼	6020A	Total/NA
Chromium	44		1.7	0.64	mg/Kg	10	☼	6020A	Total/NA
Lead	19		0.17	0.042	mg/Kg	2	☼	6020A	Total/NA
Nickel	25		0.33	0.14	mg/Kg	2	☼	6020A	Total/NA
Selenium	1.1		0.33	0.11	mg/Kg	2	☼	6020A	Total/NA
Silver	0.89		0.084	0.034	mg/Kg	2	☼	6020A	Total/NA
Mercury	0.64		0.064	0.026	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: TWT-LOC-3 — Lab Sample ID: 410-60264-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.73	J	4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Anthracene	67		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	620		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	730		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Butylbenzylphthalate	1100		190	76	ug/Kg	1	☼	8270D	Total/NA
Chrysene	670		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	130		19	7.6	ug/Kg	1	☼	8270D	Total/NA
Dimethyl phthalate	130	J	190	76	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	860		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	400		19	4.6	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	8.5	J	19	7.6	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	300		19	4.6	ug/Kg	1	☼	8270D	Total/NA
Pyrene	840		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Bis(2-ethylhexyl) phthalate	190		190	76	ug/Kg	1	☼	8270D	Total/NA
Endosulfan II (1C)	41	J p	52	25	ug/Kg	20	☼	8081B	Total/NA
gamma-Chlordane (1C)	14	J	19	5.7	ug/Kg	20	☼	8081B	Total/NA
Total Endosulfans (I + II) (1C)	41	p	19	5.0	ug/Kg	20	☼	8081B	Total/NA
4,4'-DDE (1C)	12	J p	38	7.5	ug/Kg	20	☼	8081B	Total/NA
4,4'-DDT (1C)	190		38	18	ug/Kg	20	☼	8081B	Total/NA
Chlordane (n.o.s.) (1C)	220	J p	380	91	ug/Kg	20	☼	8081B	Total/NA
2,3,7,8-TCDD	2.0		1.1	0.14	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	140	I B	5.7	0.060	ng/Kg	1	☼	8290A	Total/NA
Arsenic	44		0.31	0.10	mg/Kg	2	☼	6020A	Total/NA
Barium	180		0.31	0.14	mg/Kg	2	☼	6020A	Total/NA
Cadmium	5.4		0.077	0.039	mg/Kg	2	☼	6020A	Total/NA
Calcium	5200		31	12	mg/Kg	2	☼	6020A	Total/NA
Chromium	210		0.31	0.12	mg/Kg	2	☼	6020A	Total/NA
Lead	210		0.77	0.19	mg/Kg	10	☼	6020A	Total/NA
Nickel	290		1.5	0.63	mg/Kg	10	☼	6020A	Total/NA
Selenium	0.90		0.31	0.10	mg/Kg	2	☼	6020A	Total/NA
Silver	8.9		0.077	0.031	mg/Kg	2	☼	6020A	Total/NA
Mercury	5.0		0.69	0.29	mg/Kg	10	☼	7471A	Total/NA

Client Sample ID: TWT-LOC-4 — Lab Sample ID: 410-60264-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.0	J	21	6.4	ug/Kg	1	☼	8260C	Total/NA
Tetrahydrofuran	1.2	J	8.5	1.1	ug/Kg	1	☼	8260C	Total/NA
Benzo[a]anthracene	6.9	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	7.2	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TWT-LOC-4 (Continued) — Lab Sample ID: 410-60264-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	7.7	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	8.5	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	4.8	J	20	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	9.7	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Methanol (2C)	420	J F1	1200	240	ug/Kg	1	☼	8015B	Soluble
Total HxCDD	5.9	I B	5.9	0.021	ng/Kg	1	☼	8290A	Total/NA
Arsenic	3.0		0.48	0.16	mg/Kg	2	☼	6020A	Total/NA
Barium	24		0.48	0.22	mg/Kg	2	☼	6020A	Total/NA
Cadmium	0.30		0.12	0.060	mg/Kg	2	☼	6020A	Total/NA
Calcium	15000		48	18	mg/Kg	2	☼	6020A	Total/NA
Chromium	19		0.48	0.18	mg/Kg	2	☼	6020A	Total/NA
Lead	17		0.24	0.060	mg/Kg	2	☼	6020A	Total/NA
Nickel	8.8		0.48	0.19	mg/Kg	2	☼	6020A	Total/NA
Selenium	0.17	J	0.48	0.16	mg/Kg	2	☼	6020A	Total/NA
Silver	0.15		0.12	0.049	mg/Kg	2	☼	6020A	Total/NA
Mercury	0.064	J	0.071	0.029	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: TWT-LOC-5 — Lab Sample ID: 410-60264-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	2.0	J	4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Anthracene	59		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	170		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	250		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Chrysene	180		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	61		20	7.8	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	520		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	180		20	4.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	24		20	7.8	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	280		20	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	750		20	3.9	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDE (2C)	81		20	3.9	ug/Kg	10	☼	8081B	Total/NA
4,4'-DDT (2C)	56		20	9.2	ug/Kg	10	☼	8081B	Total/NA
Total HxCDD	96	B	5.9	0.073	ng/Kg	1	☼	8290A	Total/NA
Arsenic	6.4		0.35	0.12	mg/Kg	2	☼	6020A	Total/NA
Barium	87		0.35	0.16	mg/Kg	2	☼	6020A	Total/NA
Cadmium	1.1		0.088	0.044	mg/Kg	2	☼	6020A	Total/NA
Calcium	1200		35	13	mg/Kg	2	☼	6020A	Total/NA
Chromium	32		0.35	0.14	mg/Kg	2	☼	6020A	Total/NA
Lead	77		0.18	0.044	mg/Kg	2	☼	6020A	Total/NA
Nickel	22		0.35	0.14	mg/Kg	2	☼	6020A	Total/NA
Selenium	0.37		0.35	0.11	mg/Kg	2	☼	6020A	Total/NA
Silver	0.58		0.088	0.036	mg/Kg	2	☼	6020A	Total/NA
Mercury	2.5		0.70	0.29	mg/Kg	10	☼	7471A	Total/NA

Client Sample ID: TWT-LOC-6 — Lab Sample ID: 410-60264-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	1.2	J	5.7	0.69	ug/Kg	1	☼	8260C	Total/NA
Tetrachloroethene	1.6	J	5.7	0.57	ug/Kg	1	☼	8260C	Total/NA
Anthracene	39		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	160		19	3.7	ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-6 (Continued) — Lab Sample ID: 410-60264-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]pyrene	190		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	200		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	310		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	140		19	4.5	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	50		19	7.5	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	170		19	4.5	ug/Kg	1	☼	8270D	Total/NA
Pyrene	380		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Bis(2-ethylhexyl) phthalate	200		190	75	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDD (1C)	6.9	J	19	3.7	ug/Kg	10	☼	8081B	Total/NA
4,4'-DDE (1C)	18	J	19	3.7	ug/Kg	10	☼	8081B	Total/NA
4,4'-DDT (1C)	40		19	8.9	ug/Kg	10	☼	8081B	Total/NA
2,3,7,8-TCDD	0.92	J	1.1	0.043	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	47	B	5.6	0.036	ng/Kg	1	☼	8290A	Total/NA
Arsenic	82		0.39	0.13	mg/Kg	2	☼	6020A	Total/NA
Barium	110		0.39	0.18	mg/Kg	2	☼	6020A	Total/NA
Cadmium	2.1		0.098	0.050	mg/Kg	2	☼	6020A	Total/NA
Calcium	44000		200	74	mg/Kg	10	☼	6020A	Total/NA
Chromium	49		0.39	0.15	mg/Kg	2	☼	6020A	Total/NA
Lead	170		0.98	0.25	mg/Kg	10	☼	6020A	Total/NA
Nickel	40		0.39	0.16	mg/Kg	2	☼	6020A	Total/NA
Selenium	0.38	J	0.39	0.13	mg/Kg	2	☼	6020A	Total/NA
Silver	0.98		0.098	0.040	mg/Kg	2	☼	6020A	Total/NA
Mercury	7.0		0.67	0.28	mg/Kg	10	☼	7471A	Total/NA
Cyanide, Amenable	0.25	J	0.56	0.20	mg/Kg	1	☼	9012A	Total/NA
Cyanide, Total	0.25	J	0.55	0.20	mg/Kg	1	☼	9012A	Total/NA

Client Sample ID: TWT-TB-102221 — Lab Sample ID: 410-60264-7

No Detections.

Client Sample ID: TWT-LOC-5-D — Lab Sample ID: 410-60264-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.74	J	4.6	0.46	ug/Kg	1	☼	8260C	Total/NA
Acetophenone	30	J	60	20	ug/Kg	1	☼	8270D	Total/NA
Anthracene	98		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	330		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	350		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	350		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	61		20	8.0	ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	860		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	250		20	4.8	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	28		20	8.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	410		20	4.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	1100		20	4.0	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDE (1C)	67		41	7.9	ug/Kg	20	☼	8081B	Total/NA
4,4'-DDT (1C)	40	J	41	19	ug/Kg	20	☼	8081B	Total/NA
2,3,7,8-TCDD	2.5		1.2	0.11	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	140	B	6.0	0.056	ng/Kg	1	☼	8290A	Total/NA
Arsenic	8.3		0.45	0.15	mg/Kg	2	☼	6020A	Total/NA
Barium	110		0.45	0.20	mg/Kg	2	☼	6020A	Total/NA
Cadmium	0.92		0.11	0.056	mg/Kg	2	☼	6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D (Continued)

Lab Sample ID: 410-60264-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	1900		45	17	mg/Kg	2	☼	6020A	Total/NA
Chromium	45		0.45	0.17	mg/Kg	2	☼	6020A	Total/NA
Lead	140		1.1	0.28	mg/Kg	10	☼	6020A	Total/NA
Nickel	26		0.45	0.18	mg/Kg	2	☼	6020A	Total/NA
Selenium	0.41	J	0.45	0.15	mg/Kg	2	☼	6020A	Total/NA
Silver	0.81		0.11	0.045	mg/Kg	2	☼	6020A	Total/NA
Mercury	6.6		0.69	0.29	mg/Kg	10	☼	7471A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1

Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1

Matrix: Solid
Percent Solids: 83.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,1,1-Trichloroethane	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,1,2,2-Tetrachloroethane	ND		5.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,1,2-Trichloroethane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,1-Dichloroethane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,1-Dichloroethene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,2,4-Trichlorobenzene	ND		11	5.4	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,2-Dibromo-3-Chloropropane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,2-Dibromoethane	ND		5.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,2-Dichloroethane	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,2-Dichloropropane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
1,4-Dioxane	ND		270	40	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
2-Butanone	ND		11	2.2	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
4-Methyl-2-pentanone	ND		11	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Acetone	ND		22	6.5	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Acrylonitrile	ND		22	0.87	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Benzene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Bromoform	ND		11	5.4	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Bromomethane	ND		5.4	0.76	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Carbon disulfide	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Carbon tetrachloride	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Chlorobenzene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Chloroethane	ND		5.4	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Chloroform	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Chloromethane	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
cis-1,3-Dichloropropene	ND		5.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Dibromomethane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Dichlorodifluoromethane	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Ethyl acetate	ND		5.4	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Ethyl ether	ND		5.4	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Ethyl methacrylate	ND		5.4	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Ethylbenzene	ND		5.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Freon 113	ND		11	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Methacrylonitrile	ND		54	8.7	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Methyl iodide	ND		5.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Methyl methacrylate	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Methylene Chloride	ND		5.4	2.2	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Pentachloroethane	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Tetrachloroethene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Toluene	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
trans-1,2-Dichloroethene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
trans-1,3-Dichloropropene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Trichloroethene	ND		5.4	0.54	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Trichlorofluoromethane	ND		5.4	0.76	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Vinyl chloride	ND		5.4	0.65	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Xylenes, Total	ND		11	1.5	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1
Tetrahydrofuran	ND		8.7	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*	*10/23/21 17:40*	*10/26/21 16:24*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1

Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1

Matrix: Solid
Percent Solids: 83.5

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*	*10/23/21 17:40*	*10/26/21 16:24*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*10/23/21 17:40*	*10/26/21 16:24*	*1*
Toluene-d8 (Surr)	*101*		*52 - 141*	*10/23/21 17:40*	*10/26/21 16:24*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	F1	36	16	ug/Kg	☼	10/28/21 09:41	10/29/21 20:43	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*81*		*36 - 119*	*10/28/21 09:41*	*10/29/21 20:43*	*10*
1-Methylnaphthalene-d10 (Surr)	*76*		*37 - 110*	*10/28/21 09:41*	*10/29/21 20:43*	*10*
Fluoranthene-d10 (Surr)	*79*		*41 - 135*	*10/28/21 09:41*	*10/29/21 20:43*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
1,2,4-Trichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
1,2-Dichlorobenzene	**41**	**J**	44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
1,3-Dichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
1,4-Dichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
bis(2 chloro-1-methylethyl) ether	ND		52	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4,5-Trichlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4,6-Trichlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4-Dichlorophenol	ND		52	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4-Dimethylphenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4-Dinitrophenol	ND		1200	200	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,4-Dinitrotoluene	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,6-Dichlorophenol	ND		160	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2,6-Dinitrotoluene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2-Acetylaminofluorene	ND		400	120	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2-Chloronaphthalene	ND		40	16	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2-Chlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
2-Methylphenol	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
3-Methylcholanthrene	ND		120	60	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4,4'-Methylene bis(2-chloroaniline)	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Bromophenyl-phenylether	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Chloro-3-methylphenol	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Chloroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Methylphenol	**44**	**J**	60	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Nitroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
4-Nitrophenol	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
5-Nitro-o-toluidine	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Acetophenone	ND		60	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Aniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Anthracene	**28**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Dibenzofuran	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Benzo[a]anthracene	**140**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Benzo[a]pyrene	**160**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Butylbenzylphthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Chrysene	**180**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1

Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1

Matrix: Solid
Percent Solids: 83.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Dioctyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Dibenz(a,h)anthracene	**34**		20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Diethyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Dimethyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Fluoranthene	**280**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Hexachlorobenzene	ND		20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Hexachlorobutadiene	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Hexachlorocyclopentadiene	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Hexachloroethane	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Hexachloropropylene	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Indeno[1,2,3-cd]pyrene	**100**		20	4.8	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Isosafrole	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Methapyrilene	ND		6000	2000	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Nitrosodi-n-propylamine	ND		79	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Nitrosodi-n-butylamine	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Nitrosodiethylamine	ND		79	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Nitrosopiperidine	ND		99	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
N-Nitrosopyrrolidine	ND		99	40	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Naphthalene	**8.7**	**J**	20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Nitrobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pentachlorobenzene	ND		79	24	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pentachloronitrobenzene	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Phenacetin	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pentachlorophenol	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Phenanthrene	**150**		20	4.8	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Phenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pronamide	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pyrene	**250**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Pyridine	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Safrole, Total	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Bis(2-chloroethoxy)methane	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Bis(2-chloroethyl)ether	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1
Bis(2-ethylhexyl) phthalate	**83**	**J**	200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*60*		*13 - 121*	*10/28/21 09:41*	*10/29/21 14:28*	*1*
2-Fluorobiphenyl (Surr)	*73*		*39 - 100*	*10/28/21 09:41*	*10/29/21 14:28*	*1*
2-Fluorophenol (Surr)	*68*		*26 - 96*	*10/28/21 09:41*	*10/29/21 14:28*	*1*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*	*10/28/21 09:41*	*10/29/21 14:28*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 108*	*10/28/21 09:41*	*10/29/21 14:28*	*1*
Phenol-d5 (Surr)	*68*		*27 - 104*	*10/28/21 09:41*	*10/29/21 14:28*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1200	240	ug/Kg	☼		10/27/21 12:46	1
Isobutyl alcohol (1C)	ND		1200	200	ug/Kg	☼		10/27/21 12:46	1
Methanol (2C)	ND		1200	240	ug/Kg	☼		10/27/21 12:46	1

Client Sample ID: TWT-LOC-1

Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1

Matrix: Solid
Percent Solids: 83.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetone (1C)	90		49 - 142		10/27/21 12:46	1
Acetone (2C)	84		49 - 142		10/27/21 12:46	1

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.58	0.24	ug/Kg	☼	10/30/21 09:28	11/01/21 12:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	90		60 - 140	10/30/21 09:28	11/01/21 12:58	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	96		60 - 140	10/30/21 09:28	11/01/21 12:58	1

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		5.0	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
alpha-Chlordane (1C)	ND		5.0	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
beta-BHC (1C)	ND	F1	6.0	2.6	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
delta-BHC (1C)	ND	F1	6.0	2.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Endosulfan I (1C)	ND	F1 F2	5.0	1.3	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Endosulfan II (1C)	ND	F1	14	6.6	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Endosulfan sulfate (1C)	ND		10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Endrin (1C)	ND		10	4.1	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
gamma-BHC (Lindane) (1C)	ND	F1	5.0	1.3	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
gamma-Chlordane (1C)	ND		5.0	1.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Heptachlor (1C)	ND	F1	5.0	1.9	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Heptachlor epoxide (1C)	ND		5.0	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Methoxychlor (1C)	ND		40	11	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Toxaphene (1C)	ND		200	84	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
4,4'-DDD (1C)	ND		10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Total Endosulfans (I + II) (1C)	ND	F2	5.0	1.3	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
4,4'-DDE (1C)	**3.5**	**J F1**	10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
4,4'-DDT (2C)	ND	F1	10	4.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5
Chlordane (n.o.s.) (1C)	ND		100	24	ug/Kg	☼	10/28/21 16:43	11/01/21 07:25	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr) (1C)	144	S1+	54 - 143	10/28/21 16:43	11/01/21 07:25	5
DCB Decachlorobiphenyl (Surr) (2C)	159	S1+	54 - 143	10/28/21 16:43	11/01/21 07:25	5
Tetrachloro-m-xylene (Surr) (1C)	91		20 - 131	10/28/21 16:43	11/01/21 07:25	5
Tetrachloro-m-xylene (Surr) (2C)	86		20 - 131	10/28/21 16:43	11/01/21 07:25	5

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		2.0	0.89	ug/Kg	☼	11/02/21 05:00	11/02/21 14:08	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		43	14	ug/Kg	☼	11/02/21 05:00	11/02/21 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr) (1C)	70		54 - 140	11/02/21 05:00	11/02/21 14:08	1
2,4-Dichlorophenylacetic acid (Surr) (2C)	69		54 - 140	11/02/21 05:00	11/02/21 14:08	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1

Lab Sample ID: 410-60264-1
Date Collected: 10/22/21 09:45
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.5

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 01:42	20
Carbofuran	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 01:42	20
Methiocarb	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 01:42	20
Methomyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 01:42	20
Oxamyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 01:42	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*53*		*27 - 131*	*10/27/21 22:11*	*10/31/21 01:42*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**7.2**		1.2	0.11	ng/Kg	☼	10/27/21 12:16	10/29/21 14:45	1
Total HxCDD	**180**	**I B**	5.9	0.080	ng/Kg	☼	10/27/21 12:16	10/29/21 14:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*93*		*40 - 135*	*10/27/21 12:16*	*10/29/21 14:45*	*1*
13C-1,2,3,4,7,8-HxCDD	*85*		*40 - 135*	*10/27/21 12:16*	*10/29/21 14:45*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*40 - 135*	*10/27/21 12:16*	*10/29/21 14:45*	*1*
13C-1,2,3,7,8,9-HxCDD	*84*		*40 - 135*	*10/27/21 12:16*	*10/29/21 14:45*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**37**		0.43	0.14	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Barium	**110**		0.43	0.20	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Cadmium	**0.78**		0.11	0.054	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Calcium	**36000**	**B**	210	80	mg/Kg	☼	10/26/21 12:52	10/27/21 19:07	10
Chromium	**42**		0.43	0.16	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Lead	**32**		0.21	0.054	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Nickel	**25**		0.43	0.17	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Selenium	**0.57**		0.43	0.14	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2
Silver	**1.1**		0.11	0.043	mg/Kg	☼	10/26/21 12:52	10/27/21 19:05	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.38**		0.072	0.030	mg/Kg	☼	10/26/21 14:09	10/28/21 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	**0.25**	**J**	0.60	0.22	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	**0.25**	**J**	0.60	0.22	mg/Kg	☼	11/05/21 12:42	11/05/21 17:00	1
Percent Moisture	**16.5**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**83.5**		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-LOC-2

Lab Sample ID: 410-60264-2
Date Collected: 10/22/21 09:15
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 90.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,1,1-Trichloroethane	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-2

Date Collected: 10/22/21 09:15
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-2

Matrix: Solid
Percent Solids: 90.0

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		5.2	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,1,2-Trichloroethane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,1-Dichloroethane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,1-Dichloroethene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,2,4-Trichlorobenzene	ND		10	5.2	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,2-Dibromo-3-Chloropropane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,2-Dibromoethane	ND		5.2	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,2-Dichloroethane	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,2-Dichloropropane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
1,4-Dioxane	ND		260	39	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
2-Butanone	ND		10	2.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
4-Methyl-2-pentanone	ND		10	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Acetone	ND		21	6.3	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Acrylonitrile	ND		21	0.83	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Benzene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Bromoform	ND		10	5.2	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Bromomethane	ND		5.2	0.73	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Carbon disulfide	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Carbon tetrachloride	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Chlorobenzene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Chloroethane	ND		5.2	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Chloroform	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Chloromethane	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
cis-1,3-Dichloropropene	ND		5.2	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Dibromomethane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Dichlorodifluoromethane	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Ethyl acetate	ND		5.2	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Ethyl ether	ND		5.2	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Ethyl methacrylate	ND		5.2	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Ethylbenzene	ND		5.2	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Freon 113	ND		10	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Methacrylonitrile	ND		52	8.3	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Methyl iodide	ND		5.2	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Methyl methacrylate	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Methylene Chloride	ND		5.2	2.1	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Pentachloroethane	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Tetrachloroethene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Toluene	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
trans-1,2-Dichloroethene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
trans-1,3-Dichloropropene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Trichloroethene	ND		5.2	0.52	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Trichlorofluoromethane	ND		5.2	0.73	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Vinyl chloride	ND		5.2	0.63	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Xylenes, Total	ND		10	1.5	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1
Tetrahydrofuran	ND		8.3	1.0	ug/Kg	☼	10/23/21 17:40	10/26/21 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*10/23/21 17:40*	*10/26/21 16:48*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*10/23/21 17:40*	*10/26/21 16:48*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*10/23/21 17:40*	*10/26/21 16:48*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-2

Date Collected: 10/22/21 09:15
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-2

Matrix: Solid
Percent Solids: 90.0

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*52 - 141*	*10/23/21 17:40*	*10/26/21 16:48*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.3	1.5	ug/Kg	☼	10/28/21 09:41	10/29/21 22:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*81*		*36 - 119*	*10/28/21 09:41*	*10/29/21 22:15*	*1*
1-Methylnaphthalene-d10 (Surr)	*91*		*37 - 110*	*10/28/21 09:41*	*10/29/21 22:15*	*1*
Fluoranthene-d10 (Surr)	*94*		*41 - 135*	*10/28/21 09:41*	*10/29/21 22:15*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
1,2,4-Trichlorobenzene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
1,2-Dichlorobenzene	**39**	**J**	41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
1,3-Dichlorobenzene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
1,4-Dichlorobenzene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
bis(2 chloro-1-methylethyl) ether	ND		48	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4,5-Trichlorophenol	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4,6-Trichlorophenol	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4-Dichlorophenol	ND		48	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4-Dimethylphenol	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4-Dinitrophenol	ND		1100	180	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,4-Dinitrotoluene	ND		180	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,6-Dichlorophenol	ND		150	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2,6-Dinitrotoluene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2-Acetylaminofluorene	ND		370	110	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2-Chloronaphthalene	ND		37	15	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2-Chlorophenol	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
2-Methylphenol	ND		55	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
3-Methylcholanthrene	ND		110	55	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4,4'-Methylene bis(2-chloroaniline)	ND		550	180	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Bromophenyl-phenylether	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Chloro-3-methylphenol	ND		55	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Chloroaniline	ND		180	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Methylphenol	ND		55	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Nitroaniline	ND		180	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
4-Nitrophenol	ND		550	180	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
5-Nitro-o-toluidine	ND		550	180	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Acetophenone	**22**	**J**	55	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Aniline	ND		180	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Anthracene	**12**	**J**	18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Dibenzofuran	**25**	**J**	41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Benzo[a]anthracene	**47**		18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Benzo[a]pyrene	**32**		18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Butylbenzylphthalate	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Chrysene	**67**		18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Di-n-butyl phthalate	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Dioctyl phthalate	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-2

Date Collected: 10/22/21 09:15
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-2

Matrix: Solid
Percent Solids: 90.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		18	7.4	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Diethyl phthalate	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Dimethyl phthalate	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Fluoranthene	**120**		18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Hexachlorobenzene	ND		18	7.4	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Hexachlorobutadiene	ND		55	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Hexachlorocyclopentadiene	ND		550	180	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Hexachloroethane	ND		180	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Hexachloropropylene	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Indeno[1,2,3-cd]pyrene	**34**		18	4.4	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Isosafrole	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Methapyrilene	ND		5500	1800	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Nitrosodi-n-propylamine	ND		74	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Nitrosodi-n-butylamine	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Nitrosodiethylamine	ND		74	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Nitrosopiperidine	ND		92	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
N-Nitrosopyrrolidine	ND		92	37	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Naphthalene	**33**		18	7.4	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Nitrobenzene	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pentachlorobenzene	ND		74	22	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pentachloronitrobenzene	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Phenacetin	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pentachlorophenol	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Phenanthrene	**99**		18	4.4	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Phenol	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pronamide	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pyrene	**95**		18	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Pyridine	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Safrole, Total	ND		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Bis(2-chloroethoxy)methane	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Bis(2-chloroethyl)ether	ND		41	18	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1
Bis(2-ethylhexyl) phthalate	**190**		180	74	ug/Kg	☼	10/28/21 09:41	10/29/21 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*84*		*13 - 121*	*10/28/21 09:41*	*10/29/21 14:51*	*1*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*10/28/21 09:41*	*10/29/21 14:51*	*1*
2-Fluorophenol (Surr)	*73*		*26 - 96*	*10/28/21 09:41*	*10/29/21 14:51*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*10/28/21 09:41*	*10/29/21 14:51*	*1*
p-Terphenyl-d14 (Surr)	*94*		*45 - 108*	*10/28/21 09:41*	*10/29/21 14:51*	*1*
Phenol-d5 (Surr)	*77*		*27 - 104*	*10/28/21 09:41*	*10/29/21 14:51*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1100	220	ug/Kg	☼		10/27/21 13:05	1
Isobutyl alcohol (1C)	ND		1100	190	ug/Kg	☼		10/27/21 13:05	1
Methanol (2C)	ND		1100	220	ug/Kg	☼		10/27/21 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*98*		*49 - 142*		*10/27/21 13:05*	*1*
Acetone (2C)	*91*		*49 - 142*		*10/27/21 13:05*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-2

Date Collected: 10/22/21 09:15
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-2

Matrix: Solid
Percent Solids: 90.0

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.53	0.22	ug/Kg	☼	10/30/21 09:28	11/01/21 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*264*	*S1+*	*60 - 140*	*10/30/21 09:28*	*11/01/21 13:15*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*273*	*S1+*	*60 - 140*	*10/30/21 09:28*	*11/01/21 13:15*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		18	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
alpha-Chlordane (2C)	ND		18	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
beta-BHC (1C)	ND		22	9.6	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
delta-BHC (1C)	ND		22	9.9	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Endosulfan I (1C)	ND		18	4.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Endosulfan II (1C)	ND		50	24	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Endosulfan sulfate (2C)	ND		37	7.2	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Endrin (1C)	ND		37	15	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
gamma-BHC (Lindane) (1C)	ND		18	4.6	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
gamma-Chlordane (1C)	ND		18	5.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Heptachlor (1C)	ND		18	6.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Heptachlor epoxide (1C)	ND		18	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Methoxychlor (1C)	ND		150	39	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Toxaphene (1C)	ND		720	310	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
4,4'-DDD (1C)	ND		37	7.2	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Total Endosulfans (I + II) (1C)	ND		18	4.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
4,4'-DDE (1C)	ND		37	7.2	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
4,4'-DDT (1C)	**37**		37	17	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20
Chlordane (n.o.s.) (2C)	ND		370	88	ug/Kg	☼	10/28/21 16:43	11/01/21 07:36	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*342*	*S1+*	*54 - 143*	*10/28/21 16:43*	*11/01/21 07:36*	*20*
DCB Decachlorobiphenyl (Surr) (2C)	*181*	*p S1+*	*54 - 143*	*10/28/21 16:43*	*11/01/21 07:36*	*20*
Tetrachloro-m-xylene (Surr) (1C)	*88*		*20 - 131*	*10/28/21 16:43*	*11/01/21 07:36*	*20*
Tetrachloro-m-xylene (Surr) (2C)	*85*		*20 - 131*	*10/28/21 16:43*	*11/01/21 07:36*	*20*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (2C)	**1.8**	**J p F1 *-**	1.9	0.83	ug/Kg	☼	11/02/21 05:00	11/02/21 14:43	1
2,4-Dichlorophenoxyacetic acid (1C)	ND	F1 F2	40	13	ug/Kg	☼	11/02/21 05:00	11/02/21 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*36*	*S1-*	*54 - 140*	*11/02/21 05:00*	*11/02/21 14:43*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*37*	*S1-*	*54 - 140*	*11/02/21 05:00*	*11/02/21 14:43*	*1*

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 02:31	20
Carbofuran	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 02:31	20
Methiocarb	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 02:31	20
Methomyl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 02:31	20

Client Sample ID: TWT-LOC-2

Lab Sample ID: 410-60264-2
Date Collected: 10/22/21 09:15
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 90.0

Method: 8318 - Carbamate (HPLC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxamyl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 02:31	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*54*		*27 - 131*	*10/27/21 22:11*	*10/31/21 02:31*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**3.1**		1.1	0.14	ng/Kg	☼	10/27/21 12:16	10/29/21 15:33	1
Total HxCDD	**110**	**B**	5.4	0.054	ng/Kg	☼	10/27/21 12:16	10/29/21 15:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*91*		*40 - 135*	*10/27/21 12:16*	*10/29/21 15:33*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*40 - 135*	*10/27/21 12:16*	*10/29/21 15:33*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*40 - 135*	*10/27/21 12:16*	*10/29/21 15:33*	*1*
13C-1,2,3,7,8,9-HxCDD	*89*		*40 - 135*	*10/27/21 12:16*	*10/29/21 15:33*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.3**		0.33	0.11	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Barium	**140**		0.33	0.15	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Cadmium	**0.60**		0.084	0.042	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Calcium	**1900**	**B**	170	63	mg/Kg	☼	10/26/21 12:52	10/27/21 18:55	10
Chromium	**44**		1.7	0.64	mg/Kg	☼	10/26/21 12:52	10/27/21 18:55	10
Lead	**19**		0.17	0.042	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Nickel	**25**		0.33	0.14	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Selenium	**1.1**		0.33	0.11	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2
Silver	**0.89**		0.084	0.034	mg/Kg	☼	10/26/21 12:52	10/27/21 18:53	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.64**		0.064	0.026	mg/Kg	☼	10/26/21 14:09	10/28/21 19:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.56	0.20	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	ND		0.57	0.20	mg/Kg	☼	11/05/21 12:42	11/05/21 17:03	1
Percent Moisture	**10.0**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**90.0**		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-LOC-3

Lab Sample ID: 410-60264-3
Date Collected: 10/22/21 09:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 87.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,1,1-Trichloroethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,1,2,2-Tetrachloroethane	ND		4.4	0.35	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,1,2-Trichloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,1-Dichloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,1-Dichloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-3

Date Collected: 10/22/21 09:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-3

Matrix: Solid
Percent Solids: 87.1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		8.8	4.4	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,2-Dibromo-3-Chloropropane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,2-Dibromoethane	ND		4.4	0.35	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,2-Dichloroethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,2-Dichloropropane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
1,4-Dioxane	ND		220	33	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
2-Butanone	ND		8.8	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
4-Methyl-2-pentanone	ND		8.8	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Acetone	ND		18	5.3	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Acrylonitrile	ND		18	0.70	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Benzene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Bromoform	ND		8.8	4.4	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Bromomethane	ND		4.4	0.62	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Carbon disulfide	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Carbon tetrachloride	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Chlorobenzene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Chloroethane	ND		4.4	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Chloroform	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Chloromethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
cis-1,3-Dichloropropene	ND		4.4	0.35	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Dibromomethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Dichlorodifluoromethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Ethyl acetate	ND		4.4	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Ethyl ether	ND		4.4	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Ethyl methacrylate	ND		4.4	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Ethylbenzene	ND		4.4	0.35	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Freon 113	ND		8.8	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Methacrylonitrile	ND		44	7.0	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Methyl iodide	ND		4.4	0.35	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Methyl methacrylate	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Methylene Chloride	ND		4.4	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Pentachloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Tetrachloroethene	**0.73**	**J**	4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Toluene	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
trans-1,2-Dichloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
trans-1,3-Dichloropropene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Trichloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Trichlorofluoromethane	ND		4.4	0.62	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Vinyl chloride	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Xylenes, Total	ND		8.8	1.2	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1
Tetrahydrofuran	ND		7.0	0.88	ug/Kg	☼	10/23/21 17:40	10/26/21 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*	*10/23/21 17:40*	*10/26/21 17:11*	*1*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*	*10/23/21 17:40*	*10/26/21 17:11*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*	*10/23/21 17:40*	*10/26/21 17:11*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*	*10/23/21 17:40*	*10/26/21 17:11*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-3

Date Collected: 10/22/21 09:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-3

Matrix: Solid
Percent Solids: 87.1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.4	1.5	ug/Kg	☼	10/28/21 09:41	10/29/21 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*84*		*36 - 119*	*10/28/21 09:41*	*10/29/21 22:46*	*1*
1-Methylnaphthalene-d10 (Surr)	*88*		*37 - 110*	*10/28/21 09:41*	*10/29/21 22:46*	*1*
Fluoranthene-d10 (Surr)	*90*		*41 - 135*	*10/28/21 09:41*	*10/29/21 22:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
1,2,4-Trichlorobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
1,2-Dichlorobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
1,3-Dichlorobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
1,4-Dichlorobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
bis(2 chloro-1-methylethyl) ether	ND		49	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4,5-Trichlorophenol	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4,6-Trichlorophenol	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4-Dichlorophenol	ND		49	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4-Dimethylphenol	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4-Dinitrophenol	ND		1100	190	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,4-Dinitrotoluene	ND		190	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,6-Dichlorophenol	ND		150	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2,6-Dinitrotoluene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2-Acetylaminofluorene	ND		380	110	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2-Chloronaphthalene	ND		38	15	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2-Chlorophenol	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
2-Methylphenol	ND		57	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
3-Methylcholanthrene	ND		120	57	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4,4'-Methylene bis(2-chloroaniline)	ND		570	190	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Bromophenyl-phenylether	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Chloro-3-methylphenol	ND		57	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Chloroaniline	ND		190	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Methylphenol	ND		57	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Nitroaniline	ND		190	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
4-Nitrophenol	ND		570	190	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
5-Nitro-o-toluidine	ND		570	190	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Acetophenone	ND		57	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Aniline	ND		190	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Anthracene	**67**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Dibenzofuran	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Benzo[a]anthracene	**620**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Benzo[a]pyrene	**730**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Butylbenzylphthalate	**1100**		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Chrysene	**670**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Di-n-butyl phthalate	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Dioctyl phthalate	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Dibenz(a,h)anthracene	**130**		19	7.6	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Diethyl phthalate	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Dimethyl phthalate	**130**	**J**	190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Fluoranthene	**860**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1

Client Sample ID: TWT-LOC-3

Date Collected: 10/22/21 09:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-3

Matrix: Solid
Percent Solids: 87.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	ND		19	7.6	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Hexachlorobutadiene	ND		57	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Hexachlorocyclopentadiene	ND		570	190	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Hexachloroethane	ND		190	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Hexachloropropylene	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Indeno[1,2,3-cd]pyrene	**400**		19	4.6	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Isosafrole	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Methapyrilene	ND		5700	1900	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Nitrosodi-n-propylamine	ND		76	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Nitrosodi-n-butylamine	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Nitrosodiethylamine	ND		76	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Nitrosopiperidine	ND		95	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
N-Nitrosopyrrolidine	ND		95	38	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Naphthalene	**8.5**	**J**	19	7.6	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Nitrobenzene	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pentachlorobenzene	ND		76	23	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pentachloronitrobenzene	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Phenacetin	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pentachlorophenol	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Phenanthrene	**300**		19	4.6	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Phenol	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pronamide	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pyrene	**840**		19	3.8	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Pyridine	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Safrole, Total	ND		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Bis(2-chloroethoxy)methane	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Bis(2-chloroethyl)ether	ND		42	19	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1
Bis(2-ethylhexyl) phthalate	**190**		190	76	ug/Kg	☼	10/28/21 09:41	10/29/21 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*81*		*13 - 121*	*10/28/21 09:41*	*10/29/21 15:14*	*1*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*10/28/21 09:41*	*10/29/21 15:14*	*1*
2-Fluorophenol (Surr)	*72*		*26 - 96*	*10/28/21 09:41*	*10/29/21 15:14*	*1*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*	*10/28/21 09:41*	*10/29/21 15:14*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*10/28/21 09:41*	*10/29/21 15:14*	*1*
Phenol-d5 (Surr)	*72*		*27 - 104*	*10/28/21 09:41*	*10/29/21 15:14*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1200	230	ug/Kg	☼		10/27/21 13:25	1
Isobutyl alcohol (1C)	ND		1200	200	ug/Kg	☼		10/27/21 13:25	1
Methanol (2C)	ND		1200	230	ug/Kg	☼		10/27/21 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*96*		*49 - 142*		*10/27/21 13:25*	*1*
Acetone (2C)	*87*		*49 - 142*		*10/27/21 13:25*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (2C)	ND		0.56	0.23	ug/Kg	☼	10/30/21 09:28	11/01/21 13:32	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-3

Date Collected: 10/22/21 09:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-3

Matrix: Solid
Percent Solids: 87.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	292	S1+	60 - 140	10/30/21 09:28	11/01/21 13:32	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	222	S1+	60 - 140	10/30/21 09:28	11/01/21 13:32	1

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		19	3.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
alpha-Chlordane (1C)	ND		19	3.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
beta-BHC (1C)	ND		23	10	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
delta-BHC (1C)	ND		23	10	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Endosulfan I (1C)	ND		19	5.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Endosulfan II (1C)	**41**	**J p**	52	25	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Endosulfan sulfate (1C)	ND		38	7.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Endrin (1C)	ND		38	15	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
gamma-BHC (Lindane) (1C)	ND		19	4.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
gamma-Chlordane (1C)	**14**	**J**	19	5.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Heptachlor (1C)	ND		19	7.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Heptachlor epoxide (2C)	ND		19	3.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Methoxychlor (1C)	ND		150	41	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Toxaphene (1C)	ND		750	320	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
4,4'-DDD (1C)	ND		38	7.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Total Endosulfans (I + II) (1C)	**41**	**p**	19	5.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
4,4'-DDE (1C)	**12**	**J p**	38	7.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
4,4'-DDT (1C)	**190**		38	18	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20
Chlordane (n.o.s.) (1C)	**220**	**J p**	380	91	ug/Kg	☼	10/28/21 16:43	11/01/21 07:47	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr) (1C)	339	S1+	54 - 143	10/28/21 16:43	11/01/21 07:47	20
DCB Decachlorobiphenyl (Surr) (2C)	358	S1+	54 - 143	10/28/21 16:43	11/01/21 07:47	20
Tetrachloro-m-xylene (Surr) (1C)	103		20 - 131	10/28/21 16:43	11/01/21 07:47	20
Tetrachloro-m-xylene (Surr) (2C)	94		20 - 131	10/28/21 16:43	11/01/21 07:47	20

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		1.9	0.85	ug/Kg	☼	10/27/21 23:55	10/28/21 14:25	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		41	14	ug/Kg	☼	10/27/21 23:55	10/28/21 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr) (1C)	63		54 - 140	10/27/21 23:55	10/28/21 14:25	1
2,4-Dichlorophenylacetic acid (Surr) (2C)	62		54 - 140	10/27/21 23:55	10/28/21 14:25	1

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		290	57	ug/Kg	☼	10/27/21 22:11	10/31/21 03:20	20
Carbofuran	ND		290	57	ug/Kg	☼	10/27/21 22:11	10/31/21 03:20	20
Methiocarb	ND		290	57	ug/Kg	☼	10/27/21 22:11	10/31/21 03:20	20
Methomyl	ND		290	57	ug/Kg	☼	10/27/21 22:11	10/31/21 03:20	20
Oxamyl	ND		290	57	ug/Kg	☼	10/27/21 22:11	10/31/21 03:20	20

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-3

Date Collected: 10/22/21 09:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-3
Matrix: Solid
Percent Solids: 87.1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*51*		*27 - 131*	*10/27/21 22:11*	*10/31/21 03:20*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**2.0**		1.1	0.14	ng/Kg	☼	10/27/21 12:16	10/29/21 16:22	1
Total HxCDD	**140**	**I B**	5.7	0.060	ng/Kg	☼	10/27/21 12:16	10/29/21 16:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*92*		*40 - 135*	*10/27/21 12:16*	*10/29/21 16:22*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*40 - 135*	*10/27/21 12:16*	*10/29/21 16:22*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*10/27/21 12:16*	*10/29/21 16:22*	*1*
13C-1,2,3,7,8,9-HxCDD	*86*		*40 - 135*	*10/27/21 12:16*	*10/29/21 16:22*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**44**		0.31	0.10	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Barium	**180**		0.31	0.14	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Cadmium	**5.4**		0.077	0.039	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Calcium	**5200**		31	12	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Chromium	**210**		0.31	0.12	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Lead	**210**		0.77	0.19	mg/Kg	☼	10/26/21 15:19	10/27/21 17:46	10
Nickel	**290**		1.5	0.63	mg/Kg	☼	10/26/21 15:19	10/27/21 17:46	10
Selenium	**0.90**		0.31	0.10	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2
Silver	**8.9**		0.077	0.031	mg/Kg	☼	10/26/21 15:19	10/27/21 17:44	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**5.0**		0.69	0.29	mg/Kg	☼	10/26/21 14:09	10/28/21 19:46	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.57	0.21	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	ND		0.52	0.19	mg/Kg	☼	11/05/21 12:42	11/05/21 17:11	1
Percent Moisture	**12.9**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**87.1**		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-LOC-4

Date Collected: 10/22/21 09:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-4
Matrix: Solid
Percent Solids: 83.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,1,1-Trichloroethane	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,1,2,2-Tetrachloroethane	ND		5.3	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,1,2-Trichloroethane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,1-Dichloroethane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,1-Dichloroethene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,2,4-Trichlorobenzene	ND		11	5.3	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,2-Dibromo-3-Chloropropane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,2-Dibromoethane	ND		5.3	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-4

Date Collected: 10/22/21 09:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-4

Matrix: Solid
Percent Solids: 83.6

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,2-Dichloropropane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
1,4-Dioxane	ND		270	39	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
2-Butanone	ND		11	2.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
4-Methyl-2-pentanone	ND		11	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Acetone	**8.0**	**J**	21	6.4	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Acrylonitrile	ND		21	0.85	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Benzene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Bromoform	ND		11	5.3	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Bromomethane	ND		5.3	0.74	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Carbon disulfide	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Carbon tetrachloride	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Chlorobenzene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Chloroethane	ND		5.3	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Chloroform	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Chloromethane	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
cis-1,3-Dichloropropene	ND		5.3	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Dibromomethane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Dichlorodifluoromethane	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Ethyl acetate	ND		5.3	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Ethyl ether	ND		5.3	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Ethyl methacrylate	ND		5.3	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Ethylbenzene	ND		5.3	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Freon 113	ND		11	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Methacrylonitrile	ND		53	8.5	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Methyl iodide	ND		5.3	0.42	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Methyl methacrylate	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Methylene Chloride	ND		5.3	2.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Pentachloroethane	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Tetrachloroethene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Toluene	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
trans-1,2-Dichloroethene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
trans-1,3-Dichloropropene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Trichloroethene	ND		5.3	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Trichlorofluoromethane	ND		5.3	0.74	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Vinyl chloride	ND		5.3	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Xylenes, Total	ND		11	1.5	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1
Tetrahydrofuran	**1.2**	**J**	8.5	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*	*10/23/21 17:40*	*10/26/21 17:35*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*10/23/21 17:40*	*10/26/21 17:35*	*1*
Dibromofluoromethane (Surr)	*63*		*50 - 141*	*10/23/21 17:40*	*10/26/21 17:35*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*	*10/23/21 17:40*	*10/26/21 17:35*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.6	1.6	ug/Kg	☼	10/28/21 09:41	10/29/21 23:16	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-4

Date Collected: 10/22/21 09:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-4

Matrix: Solid
Percent Solids: 83.6

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*103*		*36 - 119*	*10/28/21 09:41*	*10/29/21 23:16*	*1*
1-Methylnaphthalene-d10 (Surr)	*94*		*37 - 110*	*10/28/21 09:41*	*10/29/21 23:16*	*1*
Fluoranthene-d10 (Surr)	*97*		*41 - 135*	*10/28/21 09:41*	*10/29/21 23:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
1,2,4-Trichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
1,2-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
1,3-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
1,4-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
bis(2 chloro-1-methylethyl) ether	ND		51	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4,5-Trichlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4,6-Trichlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4-Dichlorophenol	ND		51	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4-Dimethylphenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4-Dinitrophenol	ND		1200	200	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,4-Dinitrotoluene	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,6-Dichlorophenol	ND		160	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2,6-Dinitrotoluene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2-Acetylaminofluorene	ND		400	120	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2-Chloronaphthalene	ND		40	16	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2-Chlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
2-Methylphenol	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
3-Methylcholanthrene	ND		120	59	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4,4'-Methylene bis(2-chloroaniline)	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Bromophenyl-phenylether	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Chloro-3-methylphenol	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Chloroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Methylphenol	ND		59	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Nitroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
4-Nitrophenol	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
5-Nitro-o-toluidine	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Acetophenone	ND		59	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Aniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Anthracene	ND		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Dibenzofuran	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Benzo[a]anthracene	**6.9**	**J**	20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Benzo[a]pyrene	**7.2**	**J**	20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Butylbenzylphthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Chrysene	**7.7**	**J**	20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Di-n-butyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Dioctyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Dibenz(a,h)anthracene	ND		20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Diethyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Dimethyl phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Fluoranthene	**8.5**	**J**	20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Hexachlorobenzene	ND		20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Hexachlorobutadiene	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Hexachlorocyclopentadiene	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1

Client Sample ID: TWT-LOC-4

Date Collected: 10/22/21 09:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-4

Matrix: Solid
Percent Solids: 83.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Hexachloropropylene	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Indeno[1,2,3-cd]pyrene	ND		20	4.7	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Isosafrole	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Methapyrilene	ND		5900	2000	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Nitrosodi-n-propylamine	ND		79	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Nitrosodi-n-butylamine	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Nitrosodiethylamine	ND		79	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Nitrosopiperidine	ND		99	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
N-Nitrosopyrrolidine	ND		99	40	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Naphthalene	ND		20	7.9	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Nitrobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pentachlorobenzene	ND		79	24	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pentachloronitrobenzene	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Phenacetin	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pentachlorophenol	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Phenanthrene	**4.8**	**J**	20	4.7	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Phenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pronamide	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pyrene	**9.7**	**J**	20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Pyridine	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Safrole, Total	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Bis(2-chloroethoxy)methane	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Bis(2-chloroethyl)ether	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1
Bis(2-ethylhexyl) phthalate	ND		200	79	ug/Kg	☼	10/28/21 09:41	10/29/21 15:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*58*		*13 - 121*	*10/28/21 09:41*	*10/29/21 15:38*	*1*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*	*10/28/21 09:41*	*10/29/21 15:38*	*1*
2-Fluorophenol (Surr)	*47*		*26 - 96*	*10/28/21 09:41*	*10/29/21 15:38*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*10/28/21 09:41*	*10/29/21 15:38*	*1*
p-Terphenyl-d14 (Surr)	*95*		*45 - 108*	*10/28/21 09:41*	*10/29/21 15:38*	*1*
Phenol-d5 (Surr)	*78*		*27 - 104*	*10/28/21 09:41*	*10/29/21 15:38*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1200	240	ug/Kg	☼		10/27/21 13:44	1
Isobutyl alcohol (1C)	ND		1200	200	ug/Kg	☼		10/27/21 13:44	1
Methanol (2C)	**420**	**J F1**	1200	240	ug/Kg	☼		10/27/21 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*93*		*49 - 142*		*10/27/21 13:44*	*1*
Acetone (2C)	*82*		*49 - 142*		*10/27/21 13:44*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.59	0.25	ug/Kg	☼	10/30/21 09:28	11/01/21 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*9*	*S1-*	*60 - 140*	*10/30/21 09:28*	*11/01/21 13:49*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*15*	*S1-*	*60 - 140*	*10/30/21 09:28*	*11/01/21 13:49*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-4

Date Collected: 10/22/21 09:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-4

Matrix: Solid
Percent Solids: 83.6

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (2C)	ND		4.9	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
alpha-Chlordane (1C)	ND		4.9	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
beta-BHC (1C)	ND		5.9	2.6	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
delta-BHC (1C)	ND		5.9	2.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Endosulfan I (1C)	ND		4.9	1.3	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Endosulfan II (1C)	ND		14	6.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Endosulfan sulfate (1C)	ND		10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Endrin (1C)	ND		10	4.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
gamma-BHC (Lindane) (1C)	ND		4.9	1.2	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
gamma-Chlordane (1C)	ND		4.9	1.5	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Heptachlor (2C)	ND		4.9	1.8	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Heptachlor epoxide (1C)	ND		4.9	1.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Methoxychlor (1C)	ND		40	11	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Toxaphene (1C)	ND		200	83	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
4,4'-DDD (1C)	ND		10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Total Endosulfans (I + II) (1C)	ND		4.9	1.3	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
4,4'-DDE (1C)	ND		10	2.0	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
4,4'-DDT (1C)	ND		10	4.7	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5
Chlordane (n.o.s.) (2C)	ND		100	24	ug/Kg	☼	10/28/21 16:43	11/01/21 07:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*92*		*54 - 143*	*10/28/21 16:43*	*11/01/21 07:58*	*5*
DCB Decachlorobiphenyl (Surr) (2C)	*97*		*54 - 143*	*10/28/21 16:43*	*11/01/21 07:58*	*5*
Tetrachloro-m-xylene (Surr) (1C)	*77*		*20 - 131*	*10/28/21 16:43*	*11/01/21 07:58*	*5*
Tetrachloro-m-xylene (Surr) (2C)	*73*		*20 - 131*	*10/28/21 16:43*	*11/01/21 07:58*	*5*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		2.0	0.89	ug/Kg	☼	11/01/21 04:05	11/01/21 20:18	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		43	14	ug/Kg	☼	11/01/21 04:05	11/01/21 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*89*		*54 - 140*	*11/01/21 04:05*	*11/01/21 20:18*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*83*		*54 - 140*	*11/01/21 04:05*	*11/01/21 20:18*	*1*

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 04:10	20
Carbofuran	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 04:10	20
Methiocarb	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 04:10	20
Methomyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 04:10	20
Oxamyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 04:10	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*53*		*27 - 131*	*10/27/21 22:11*	*10/31/21 04:10*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		1.2	0.049	ng/Kg	☼	10/27/21 12:16	10/29/21 17:10	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-4

Lab Sample ID: 410-60264-4
Date Collected: 10/22/21 09:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.6

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	5.9	I B	5.9	0.021	ng/Kg	☼	10/27/21 12:16	10/29/21 17:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:10*	*1*
13C-1,2,3,4,7,8-HxCDD	*71*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:10*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:10*	*1*
13C-1,2,3,7,8,9-HxCDD	*71*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:10*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0		0.48	0.16	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Barium	24		0.48	0.22	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Cadmium	0.30		0.12	0.060	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Calcium	15000		48	18	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Chromium	19		0.48	0.18	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Lead	17		0.24	0.060	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Nickel	8.8		0.48	0.19	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Selenium	0.17	J	0.48	0.16	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2
Silver	0.15		0.12	0.049	mg/Kg	☼	10/26/21 15:19	10/27/21 17:11	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.064	J	0.071	0.029	mg/Kg	☼	10/26/21 14:09	10/28/21 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.60	0.22	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	ND		0.62	0.22	mg/Kg	☼	11/05/21 12:42	11/05/21 17:10	1
Percent Moisture	16.4		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	83.6		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-LOC-5

Lab Sample ID: 410-60264-5
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,1,1-Trichloroethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,1,2,2-Tetrachloroethane	ND		4.4	0.36	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,1,2-Trichloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,1-Dichloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,1-Dichloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,2,4-Trichlorobenzene	ND		8.9	4.4	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,2-Dibromo-3-Chloropropane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,2-Dibromoethane	ND		4.4	0.36	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,2-Dichloroethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,2-Dichloropropane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
1,4-Dioxane	ND		220	33	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
2-Butanone	ND		8.9	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
4-Methyl-2-pentanone	ND		8.9	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-5

Matrix: Solid
Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		18	5.3	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Acrylonitrile	ND		18	0.71	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Benzene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Bromoform	ND		8.9	4.4	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Bromomethane	ND		4.4	0.62	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Carbon disulfide	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Carbon tetrachloride	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Chlorobenzene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Chloroethane	ND		4.4	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Chloroform	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Chloromethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
cis-1,3-Dichloropropene	ND		4.4	0.36	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Dibromomethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Dichlorodifluoromethane	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Ethyl acetate	ND		4.4	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Ethyl ether	ND		4.4	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Ethyl methacrylate	ND		4.4	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Ethylbenzene	ND		4.4	0.36	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Freon 113	ND		8.9	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Methacrylonitrile	ND		44	7.1	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Methyl iodide	ND		4.4	0.36	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Methyl methacrylate	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Methylene Chloride	ND		4.4	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Pentachloroethane	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Tetrachloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Toluene	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
trans-1,2-Dichloroethene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
trans-1,3-Dichloropropene	ND		4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Trichloroethene	**2.0**	**J**	4.4	0.44	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Trichlorofluoromethane	ND		4.4	0.62	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Vinyl chloride	ND		4.4	0.53	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Xylenes, Total	ND		8.9	1.2	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1
Tetrahydrofuran	ND		7.1	0.89	ug/Kg	☼	10/23/21 17:40	10/26/21 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*	*10/23/21 17:40*	*10/26/21 17:59*	*1*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*	*10/23/21 17:40*	*10/26/21 17:59*	*1*
Dibromofluoromethane (Surr)	*104*		*50 - 141*	*10/23/21 17:40*	*10/26/21 17:59*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*	*10/23/21 17:40*	*10/26/21 17:59*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.5	1.6	ug/Kg	☼	10/28/21 09:41	11/02/21 10:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*90*		*36 - 119*	*10/28/21 09:41*	*11/02/21 10:56*	*1*
1-Methylnaphthalene-d10 (Surr)	*96*		*37 - 110*	*10/28/21 09:41*	*11/02/21 10:56*	*1*
Fluoranthene-d10 (Surr)	*95*		*41 - 135*	*10/28/21 09:41*	*11/02/21 10:56*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-5

Matrix: Solid
Percent Solids: 84.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
1,2,4-Trichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
1,2-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
1,3-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
1,4-Dichlorobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
bis(2 chloro-1-methylethyl) ether	ND		51	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4,5-Trichlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4,6-Trichlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4-Dichlorophenol	ND		51	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4-Dimethylphenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4-Dinitrophenol	ND		1200	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,4-Dinitrotoluene	ND		200	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,6-Dichlorophenol	ND		160	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2,6-Dinitrotoluene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2-Acetylaminofluorene	ND		390	120	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2-Chloronaphthalene	ND		39	16	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2-Chlorophenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
2-Methylphenol	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
3-Methylcholanthrene	ND		120	59	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4,4'-Methylene bis(2-chloroaniline)	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Bromophenyl-phenylether	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Chloro-3-methylphenol	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Chloroaniline	ND		200	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Methylphenol	ND		59	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Nitroaniline	ND		200	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
4-Nitrophenol	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
5-Nitro-o-toluidine	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Acetophenone	ND		59	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Aniline	ND		200	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Anthracene	**59**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Dibenzofuran	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Benzo[a]anthracene	**170**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Benzo[a]pyrene	**250**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Butylbenzylphthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Chrysene	**180**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Di-n-butyl phthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
N-Dioctyl phthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Dibenz(a,h)anthracene	**61**		20	7.8	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Diethyl phthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Dimethyl phthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Fluoranthene	**520**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Hexachlorobenzene	ND		20	7.8	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Hexachlorobutadiene	ND		59	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Hexachlorocyclopentadiene	ND		590	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Hexachloroethane	ND		200	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Hexachloropropylene	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Indeno[1,2,3-cd]pyrene	**180**		20	4.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Isosafrole	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Methapyrilene	ND		5900	2000	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-5

Matrix: Solid
Percent Solids: 84.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	ND		78	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
N-Nitrosodi-n-butylamine	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
N-Nitrosodiethylamine	ND		78	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
N-Nitrosopiperidine	ND		98	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
N-Nitrosopyrrolidine	ND		98	39	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Naphthalene	**24**		20	7.8	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Nitrobenzene	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pentachlorobenzene	ND		78	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pentachloronitrobenzene	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Phenacetin	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pentachlorophenol	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Phenanthrene	**280**		20	4.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Phenol	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pronamide	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pyrene	**750**		20	3.9	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Pyridine	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Safrole, Total	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Bis(2-chloroethoxy)methane	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Bis(2-chloroethyl)ether	ND		43	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1
Bis(2-ethylhexyl) phthalate	ND		200	78	ug/Kg	☼	10/28/21 09:41	10/29/21 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*78*		*13 - 121*	*10/28/21 09:41*	*10/29/21 16:02*	*1*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*10/28/21 09:41*	*10/29/21 16:02*	*1*
2-Fluorophenol (Surr)	*71*		*26 - 96*	*10/28/21 09:41*	*10/29/21 16:02*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*10/28/21 09:41*	*10/29/21 16:02*	*1*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*	*10/28/21 09:41*	*10/29/21 16:02*	*1*
Phenol-d5 (Surr)	*74*		*27 - 104*	*10/28/21 09:41*	*10/29/21 16:02*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1200	240	ug/Kg	☼		10/27/21 14:42	1
Isobutyl alcohol (1C)	ND		1200	200	ug/Kg	☼		10/27/21 14:42	1
Methanol (2C)	ND		1200	240	ug/Kg	☼		10/27/21 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*88*		*49 - 142*		*10/27/21 14:42*	*1*
Acetone (2C)	*83*		*49 - 142*		*10/27/21 14:42*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.58	0.25	ug/Kg	☼	10/30/21 09:28	11/01/21 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*147*	*S1+*	*60 - 140*	*10/30/21 09:28*	*11/01/21 14:06*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (2C)	ND		9.7	2.0	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
alpha-Chlordane (2C)	ND	F1	9.7	2.0	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
beta-BHC (2C)	ND		12	5.1	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-5

Matrix: Solid
Percent Solids: 84.7

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC (2C)	ND		12	5.3	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Endosulfan I (2C)	ND		9.7	2.6	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Endosulfan II (2C)	ND		27	13	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Endosulfan sulfate (1C)	ND		20	3.9	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Endrin (2C)	ND		20	7.9	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
gamma-BHC (Lindane) (2C)	ND		9.7	2.5	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
gamma-Chlordane (2C)	ND		9.7	2.9	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Heptachlor (2C)	ND		9.7	3.6	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Heptachlor epoxide (2C)	ND		9.7	2.0	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Methoxychlor (2C)	ND		78	21	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Toxaphene (2C)	ND		390	160	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
4,4'-DDD (2C)	ND	F1 F2	20	3.9	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Total Endosulfans (I + II) (2C)	ND		9.7	2.6	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
4,4'-DDE (2C)	**81**		20	3.9	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
4,4'-DDT (2C)	**56**		20	9.2	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10
Chlordane (n.o.s.) (2C)	ND		200	47	ug/Kg	☼	11/03/21 16:08	11/04/21 12:59	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*105*		*54 - 143*	*11/03/21 16:08*	*11/04/21 12:59*	*10*
DCB Decachlorobiphenyl (Surr) (2C)	*137*		*54 - 143*	*11/03/21 16:08*	*11/04/21 12:59*	*10*
Tetrachloro-m-xylene (Surr) (1C)	*88*		*20 - 131*	*11/03/21 16:08*	*11/04/21 12:59*	*10*
Tetrachloro-m-xylene (Surr) (2C)	*91*		*20 - 131*	*11/03/21 16:08*	*11/04/21 12:59*	*10*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		2.0	0.88	ug/Kg	☼	10/27/21 23:55	10/28/21 15:36	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		42	14	ug/Kg	☼	10/27/21 23:55	10/28/21 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*74*		*54 - 140*	*10/27/21 23:55*	*10/28/21 15:36*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*83*		*54 - 140*	*10/27/21 23:55*	*10/28/21 15:36*	*1*

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		300	59	ug/Kg	☼	10/27/21 22:11	10/31/21 04:59	20
Carbofuran	ND		300	59	ug/Kg	☼	10/27/21 22:11	10/31/21 04:59	20
Methiocarb	ND		300	59	ug/Kg	☼	10/27/21 22:11	10/31/21 04:59	20
Methomyl	ND		300	59	ug/Kg	☼	10/27/21 22:11	10/31/21 04:59	20
Oxamyl	ND		300	59	ug/Kg	☼	10/27/21 22:11	10/31/21 04:59	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*58*		*27 - 131*	*10/27/21 22:11*	*10/31/21 04:59*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		1.2	0.035	ng/Kg	☼	10/27/21 12:16	10/29/21 17:59	1
Total HxCDD	**96**	**B**	5.9	0.073	ng/Kg	☼	10/27/21 12:16	10/29/21 17:59	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Lab Sample ID: 410-60264-5
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 84.7

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*51*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:59*	*1*
13C-1,2,3,4,7,8-HxCDD	*44*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:59*	*1*
13C-1,2,3,6,7,8-HxCDD	*44*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:59*	*1*
13C-1,2,3,7,8,9-HxCDD	*43*		*40 - 135*	*10/27/21 12:16*	*10/29/21 17:59*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.4**		0.35	0.12	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Barium	**87**		0.35	0.16	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Cadmium	**1.1**		0.088	0.044	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Calcium	**1200**		35	13	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Chromium	**32**		0.35	0.14	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Lead	**77**		0.18	0.044	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Nickel	**22**		0.35	0.14	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Selenium	**0.37**		0.35	0.11	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2
Silver	**0.58**		0.088	0.036	mg/Kg	☼	10/26/21 15:19	10/27/21 17:03	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**2.5**		0.70	0.29	mg/Kg	☼	10/26/21 14:09	10/28/21 19:36	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.59	0.21	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	ND		0.47	0.17	mg/Kg	☼	11/05/21 12:42	11/05/21 16:56	1
Percent Moisture	**15.3**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**84.7**		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-LOC-6

Lab Sample ID: 410-60264-6
Date Collected: 10/22/21 10:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 88.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,1,1-Trichloroethane	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,1,2,2-Tetrachloroethane	ND	*3	5.7	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,1,2-Trichloroethane	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,1-Dichloroethane	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,1-Dichloroethene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,2,4-Trichlorobenzene	ND	*3	11	5.7	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,2-Dibromo-3-Chloropropane	ND	*3	5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,2-Dibromoethane	ND		5.7	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,2-Dichloroethane	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,2-Dichloropropane	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
1,4-Dioxane	ND		290	42	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
2-Butanone	ND		11	2.3	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
4-Methyl-2-pentanone	ND		11	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Acetone	ND		23	6.9	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Acrylonitrile	ND		23	0.91	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Benzene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Bromoform	ND		11	5.7	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1

Client Sample ID: TWT-LOC-6

Date Collected: 10/22/21 10:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-6

Matrix: Solid
Percent Solids: 88.5

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		5.7	0.80	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Carbon disulfide	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Carbon tetrachloride	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Chlorobenzene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Chloroethane	ND		5.7	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Chloroform	**1.2**	**J**	5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Chloromethane	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
cis-1,3-Dichloropropene	ND		5.7	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Dibromomethane	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Dichlorodifluoromethane	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Ethyl acetate	ND		5.7	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Ethyl ether	ND		5.7	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Ethyl methacrylate	ND		5.7	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Ethylbenzene	ND		5.7	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Freon 113	ND		11	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Methacrylonitrile	ND		57	9.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Methyl iodide	ND		5.7	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Methyl methacrylate	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Methylene Chloride	ND		5.7	2.3	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Pentachloroethane	ND	*3	5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Tetrachloroethene	**1.6**	**J**	5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Toluene	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
trans-1,2-Dichloroethene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
trans-1,3-Dichloropropene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Trichloroethene	ND		5.7	0.57	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Trichlorofluoromethane	ND		5.7	0.80	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Vinyl chloride	ND		5.7	0.69	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Xylenes, Total	ND		11	1.6	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1
Tetrahydrofuran	ND		9.1	1.1	ug/Kg	☼	10/23/21 17:40	10/26/21 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*	*10/23/21 17:40*	*10/26/21 18:22*	*1*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*	*10/23/21 17:40*	*10/26/21 18:22*	*1*
Dibromofluoromethane (Surr)	*107*		*50 - 141*	*10/23/21 17:40*	*10/26/21 18:22*	*1*
Toluene-d8 (Surr)	*108*		*52 - 141*	*10/23/21 17:40*	*10/26/21 18:22*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.4	1.5	ug/Kg	☼	10/28/21 09:41	11/02/21 11:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*83*		*36 - 119*	*10/28/21 09:41*	*11/02/21 11:27*	*1*
1-Methylnaphthalene-d10 (Surr)	*94*		*37 - 110*	*10/28/21 09:41*	*11/02/21 11:27*	*1*
Fluoranthene-d10 (Surr)	*111*		*41 - 135*	*10/28/21 09:41*	*11/02/21 11:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
1,2,4-Trichlorobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
1,2-Dichlorobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-6

Date Collected: 10/22/21 10:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-6

Matrix: Solid
Percent Solids: 88.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
1,4-Dichlorobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
bis(2 chloro-1-methylethyl) ether	ND		49	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4,5-Trichlorophenol	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4,6-Trichlorophenol	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4-Dichlorophenol	ND		49	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4-Dimethylphenol	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4-Dinitrophenol	ND		1100	190	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,4-Dinitrotoluene	ND		190	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,6-Dichlorophenol	ND		150	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2,6-Dinitrotoluene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2-Acetylaminofluorene	ND		370	110	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2-Chloronaphthalene	ND		37	15	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2-Chlorophenol	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
2-Methylphenol	ND		56	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
3-Methylcholanthrene	ND		120	56	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4,4'-Methylene bis(2-chloroaniline)	ND		560	190	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Bromophenyl-phenylether	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Chloro-3-methylphenol	ND		56	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Chloroaniline	ND		190	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Methylphenol	ND		56	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Nitroaniline	ND		190	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
4-Nitrophenol	ND		560	190	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
5-Nitro-o-toluidine	ND		560	190	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Acetophenone	ND		56	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Aniline	ND		190	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Anthracene	**39**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Dibenzofuran	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Benzo[a]anthracene	**160**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Benzo[a]pyrene	**190**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Butylbenzylphthalate	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Chrysene	**200**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Di-n-butyl phthalate	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
N-Dioctyl phthalate	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Dibenz(a,h)anthracene	ND		19	7.5	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Diethyl phthalate	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Dimethyl phthalate	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Fluoranthene	**310**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Hexachlorobenzene	ND		19	7.5	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Hexachlorobutadiene	ND		56	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Hexachlorocyclopentadiene	ND		560	190	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Hexachloroethane	ND		190	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Hexachloropropylene	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Indeno[1,2,3-cd]pyrene	**140**		19	4.5	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Isosafrole	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Methapyrilene	ND		5600	1900	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
N-Nitrosodi-n-propylamine	ND		75	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
N-Nitrosodi-n-butylamine	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
N-Nitrosodiethylamine	ND		75	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-6

Date Collected: 10/22/21 10:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-6

Matrix: Solid
Percent Solids: 88.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosopiperidine	ND		93	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
N-Nitrosopyrrolidine	ND		93	37	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Naphthalene	**50**		19	7.5	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Nitrobenzene	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pentachlorobenzene	ND		75	22	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pentachloronitrobenzene	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Phenacetin	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pentachlorophenol	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Phenanthrene	**170**		19	4.5	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Phenol	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pronamide	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pyrene	**380**		19	3.7	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Pyridine	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Safrole, Total	ND		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Bis(2-chloroethoxy)methane	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Bis(2-chloroethyl)ether	ND		41	19	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1
Bis(2-ethylhexyl) phthalate	**200**		190	75	ug/Kg	☼	10/28/21 09:41	10/29/21 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*68*		*13 - 121*	*10/28/21 09:41*	*10/29/21 16:25*	*1*
2-Fluorobiphenyl (Surr)	*86*		*39 - 100*	*10/28/21 09:41*	*10/29/21 16:25*	*1*
2-Fluorophenol (Surr)	*69*		*26 - 96*	*10/28/21 09:41*	*10/29/21 16:25*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*10/28/21 09:41*	*10/29/21 16:25*	*1*
p-Terphenyl-d14 (Surr)	*94*		*45 - 108*	*10/28/21 09:41*	*10/29/21 16:25*	*1*
Phenol-d5 (Surr)	*73*		*27 - 104*	*10/28/21 09:41*	*10/29/21 16:25*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1100	230	ug/Kg	☼		10/27/21 15:39	1
Isobutyl alcohol (1C)	ND		1100	190	ug/Kg	☼		10/27/21 15:39	1
Methanol (2C)	ND		1100	230	ug/Kg	☼		10/27/21 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*92*		*49 - 142*		*10/27/21 15:39*	*1*
Acetone (2C)	*88*		*49 - 142*		*10/27/21 15:39*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.54	0.23	ug/Kg	☼	10/30/21 09:28	11/01/21 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*131*		*60 - 140*	*10/30/21 09:28*	*11/01/21 14:23*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*127*		*60 - 140*	*10/30/21 09:28*	*11/01/21 14:23*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		9.3	1.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
alpha-Chlordane (1C)	ND		9.3	1.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
beta-BHC (1C)	ND		11	4.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
delta-BHC (1C)	ND		11	5.1	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Endosulfan I (1C)	ND		9.3	2.5	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10

Client Sample ID: TWT-LOC-6

Date Collected: 10/22/21 10:30
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-6

Matrix: Solid
Percent Solids: 88.5

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan II (1C)	ND		26	12	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Endosulfan sulfate (1C)	ND		19	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Endrin (1C)	ND		19	7.6	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
gamma-BHC (Lindane) (1C)	ND		9.3	2.4	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
gamma-Chlordane (1C)	ND		9.3	2.8	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Heptachlor (1C)	ND		9.3	3.5	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Heptachlor epoxide (1C)	ND		9.3	1.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Methoxychlor (1C)	ND		75	20	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Toxaphene (1C)	ND		370	160	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
4,4'-DDD (1C)	**6.9**	**J**	19	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Total Endosulfans (I + II) (1C)	ND		9.3	2.5	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
4,4'-DDE (1C)	**18**	**J**	19	3.7	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
4,4'-DDT (1C)	**40**		19	8.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10
Chlordane (n.o.s.) (1C)	ND		190	45	ug/Kg	☼	10/28/21 16:43	11/01/21 08:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*97*		*54 - 143*	*10/28/21 16:43*	*11/01/21 08:09*	*10*
DCB Decachlorobiphenyl (Surr) (2C)	*119*		*54 - 143*	*10/28/21 16:43*	*11/01/21 08:09*	*10*
Tetrachloro-m-xylene (Surr) (1C)	*77*		*20 - 131*	*10/28/21 16:43*	*11/01/21 08:09*	*10*
Tetrachloro-m-xylene (Surr) (2C)	*72*		*20 - 131*	*10/28/21 16:43*	*11/01/21 08:09*	*10*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		1.9	0.84	ug/Kg	☼	10/27/21 23:55	10/28/21 16:11	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		40	13	ug/Kg	☼	10/27/21 23:55	10/28/21 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*50*	*S1-*	*54 - 140*	*10/27/21 23:55*	*10/28/21 16:11*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*66*		*54 - 140*	*10/27/21 23:55*	*10/28/21 16:11*	*1*

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 05:48	20
Carbofuran	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 05:48	20
Methiocarb	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 05:48	20
Methomyl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 05:48	20
Oxamyl	ND		280	56	ug/Kg	☼	10/27/21 22:11	10/31/21 05:48	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*63*		*27 - 131*	*10/27/21 22:11*	*10/31/21 05:48*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**0.92**	**J**	1.1	0.043	ng/Kg	☼	10/27/21 12:16	10/29/21 18:47	1
Total HxCDD	**47**	**B**	5.6	0.036	ng/Kg	☼	10/27/21 12:16	10/29/21 18:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*53*		*40 - 135*	*10/27/21 12:16*	*10/29/21 18:47*	*1*
13C-1,2,3,4,7,8-HxCDD	*48*		*40 - 135*	*10/27/21 12:16*	*10/29/21 18:47*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-6

Lab Sample ID: 410-60264-6
Date Collected: 10/22/21 10:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 88.5

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDD	*50*		*40 - 135*	*10/27/21 12:16*	*10/29/21 18:47*	*1*
13C-1,2,3,7,8,9-HxCDD	*49*		*40 - 135*	*10/27/21 12:16*	*10/29/21 18:47*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**82**		0.39	0.13	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Barium	**110**		0.39	0.18	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Cadmium	**2.1**		0.098	0.050	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Calcium	**44000**		200	74	mg/Kg	☼	10/26/21 15:19	10/27/21 16:53	10
Chromium	**49**		0.39	0.15	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Lead	**170**		0.98	0.25	mg/Kg	☼	10/26/21 15:19	10/27/21 16:53	10
Nickel	**40**		0.39	0.16	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Selenium	**0.38**	**J**	0.39	0.13	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2
Silver	**0.98**		0.098	0.040	mg/Kg	☼	10/26/21 15:19	10/27/21 16:51	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**7.0**		0.67	0.28	mg/Kg	☼	10/26/21 14:09	10/28/21 19:44	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	**0.25**	**J**	0.56	0.20	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	**0.25**	**J**	0.55	0.20	mg/Kg	☼	11/05/21 12:42	11/05/21 17:13	1
Percent Moisture	**11.5**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**88.5**		1.0	1.0	%			10/25/21 10:20	1

Client Sample ID: TWT-TB-102221

Lab Sample ID: 410-60264-7
Date Collected: 10/22/21 06:00
Matrix: Water
Date Received: 10/22/21 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			11/04/21 14:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/Kg			11/04/21 14:00	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			11/04/21 14:00	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
1,4-Dioxane	ND		250	29	ug/L			11/04/21 14:00	1
2-Butanone	ND		10	0.50	ug/L			11/04/21 14:00	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			11/04/21 14:00	1
Acetone	ND		20	0.70	ug/L			11/04/21 14:00	1
Acrylonitrile	ND		20	0.30	ug/L			11/04/21 14:00	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Bromoform	ND		4.0	1.0	ug/L			11/04/21 14:00	1
Bromomethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1

Client Sample ID: TWT-TB-102221

Lab Sample ID: 410-60264-7

Date Collected: 10/22/21 06:00
Matrix: Water
Date Received: 10/22/21 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	ND		5.0	0.30	ug/L			11/04/21 14:00	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Chlorobenzene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Chloroethane	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Chloroform	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Chloromethane	ND		1.0	0.20	ug/L			11/04/21 14:00	1
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Dibromomethane	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Dichlorodifluoromethane	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Ethyl acetate	ND		5.0	0.70	ug/L			11/04/21 14:00	1
Ethyl ether	ND		5.0	0.20	ug/L			11/04/21 14:00	1
Ethyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 14:00	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 14:00	1
Freon 113	ND		10	0.30	ug/L			11/04/21 14:00	1
Methacrylonitrile	ND		50	6.0	ug/L			11/04/21 14:00	1
Methyl iodide	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Methyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 14:00	1
Methylene Chloride	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Pentachloroethane	ND		5.0	0.20	ug/L			11/04/21 14:00	1
Tetrachloroethene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Toluene	ND		1.0	0.20	ug/L			11/04/21 14:00	1
trans-1,2-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Trichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:00	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Vinyl chloride	ND		1.0	0.20	ug/L			11/04/21 14:00	1
Xylenes, Total	ND		1.0	0.40	ug/L			11/04/21 14:00	1
Tetrahydrofuran	ND		10	0.70	ug/L			11/04/21 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*11/04/21 14:00*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 14:00*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*11/04/21 14:00*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 14:00*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.028	0.0094	ug/L		10/29/21 03:50	10/29/21 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*110*		*46 - 136*	*10/29/21 03:50*	*10/29/21 15:23*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*93*		*46 - 136*	*10/29/21 03:50*	*10/29/21 15:23*	*1*

Client Sample ID: TWT-LOC-5-D

Lab Sample ID: 410-60264-8

Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,1,1-Trichloroethane	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		4.6	0.37	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,1,2-Trichloroethane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,1-Dichloroethane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,1-Dichloroethene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,2,4-Trichlorobenzene	ND		9.2	4.6	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,2-Dibromo-3-Chloropropane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,2-Dibromoethane	ND		4.6	0.37	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,2-Dichloroethane	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,2-Dichloropropane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
1,4-Dioxane	ND		230	34	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
2-Butanone	ND		9.2	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
4-Methyl-2-pentanone	ND		9.2	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Acetone	ND		18	5.5	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Acrylonitrile	ND		18	0.74	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Benzene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Bromoform	ND		9.2	4.6	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Bromomethane	ND		4.6	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Carbon disulfide	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Carbon tetrachloride	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Chlorobenzene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Chloroethane	ND		4.6	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Chloroform	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Chloromethane	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
cis-1,3-Dichloropropene	ND		4.6	0.37	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Dibromomethane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Dichlorodifluoromethane	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Ethyl acetate	ND		4.6	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Ethyl ether	ND		4.6	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Ethyl methacrylate	ND		4.6	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Ethylbenzene	ND		4.6	0.37	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Freon 113	ND		9.2	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Methacrylonitrile	ND		46	7.4	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Methyl iodide	ND		4.6	0.37	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Methyl methacrylate	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Methylene Chloride	ND		4.6	1.8	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Pentachloroethane	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Tetrachloroethene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Toluene	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
trans-1,2-Dichloroethene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
trans-1,3-Dichloropropene	ND		4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Trichloroethene	**0.74**	**J**	4.6	0.46	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Trichlorofluoromethane	ND		4.6	0.64	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Vinyl chloride	ND		4.6	0.55	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Xylenes, Total	ND		9.2	1.3	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1
Tetrahydrofuran	ND		7.4	0.92	ug/Kg	☼	10/23/21 17:40	10/26/21 18:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*	*10/23/21 17:40*	*10/26/21 18:46*	*1*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*	*10/23/21 17:40*	*10/26/21 18:46*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*10/23/21 17:40*	*10/26/21 18:46*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*52 - 141*	*10/23/21 17:40*	*10/26/21 18:46*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		3.6	1.6	ug/Kg	☼	10/28/21 09:41	11/02/21 11:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*84*		*36 - 119*	*10/28/21 09:41*	*11/02/21 11:59*	*1*
1-Methylnaphthalene-d10 (Surr)	*86*		*37 - 110*	*10/28/21 09:41*	*11/02/21 11:59*	*1*
Fluoranthene-d10 (Surr)	*88*		*41 - 135*	*10/28/21 09:41*	*11/02/21 11:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
1,2,4-Trichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
1,2-Dichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
1,3-Dichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
1,4-Dichlorobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
bis(2 chloro-1-methylethyl) ether	ND		52	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4,5-Trichlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4,6-Trichlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4-Dichlorophenol	ND		52	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4-Dimethylphenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4-Dinitrophenol	ND		1200	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,4-Dinitrotoluene	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,6-Dichlorophenol	ND		160	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2,6-Dinitrotoluene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2-Acetylaminofluorene	ND		400	120	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2-Chloronaphthalene	ND		40	16	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2-Chlorophenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
2-Methylphenol	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
3-Methylcholanthrene	ND		120	60	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4,4'-Methylene bis(2-chloroaniline)	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Bromophenyl-phenylether	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Chloro-3-methylphenol	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Chloroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Methylphenol	ND		60	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Nitroaniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
4-Nitrophenol	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
5-Nitro-o-toluidine	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Acetophenone	**30**	**J**	60	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Aniline	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Anthracene	**98**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Dibenzofuran	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Benzo[a]anthracene	**330**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Benzo[a]pyrene	**350**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Butylbenzylphthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Chrysene	**350**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Di-n-butyl phthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Dioctyl phthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	**61**		20	8.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Diethyl phthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Dimethyl phthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Fluoranthene	**860**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Hexachlorobenzene	ND		20	8.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Hexachlorobutadiene	ND		60	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Hexachlorocyclopentadiene	ND		600	200	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Hexachloroethane	ND		200	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Hexachloropropylene	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Indeno[1,2,3-cd]pyrene	**250**		20	4.8	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Isosafrole	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Methapyrilene	ND		6000	2000	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Nitrosodi-n-propylamine	ND		80	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Nitrosodi-n-butylamine	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Nitrosodiethylamine	ND		80	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Nitrosopiperidine	ND		100	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
N-Nitrosopyrrolidine	ND		100	40	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Naphthalene	**28**		20	8.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Nitrobenzene	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pentachlorobenzene	ND		80	24	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pentachloronitrobenzene	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Phenacetin	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pentachlorophenol	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Phenanthrene	**410**		20	4.8	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Phenol	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pronamide	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pyrene	**1100**		20	4.0	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Pyridine	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Safrole, Total	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Bis(2-chloroethoxy)methane	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Bis(2-chloroethyl)ether	ND		44	20	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1
Bis(2-ethylhexyl) phthalate	ND		200	80	ug/Kg	☼	10/28/21 09:41	10/29/21 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*89*		*13 - 121*	*10/28/21 09:41*	*10/29/21 16:49*	*1*
2-Fluorobiphenyl (Surr)	*93*		*39 - 100*	*10/28/21 09:41*	*10/29/21 16:49*	*1*
2-Fluorophenol (Surr)	*77*		*26 - 96*	*10/28/21 09:41*	*10/29/21 16:49*	*1*
Nitrobenzene-d5 (Surr)	*77*		*32 - 97*	*10/28/21 09:41*	*10/29/21 16:49*	*1*
p-Terphenyl-d14 (Surr)	*104*		*45 - 108*	*10/28/21 09:41*	*10/29/21 16:49*	*1*
Phenol-d5 (Surr)	*80*		*27 - 104*	*10/28/21 09:41*	*10/29/21 16:49*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1200	240	ug/Kg	☼		10/27/21 15:58	1
Isobutyl alcohol (1C)	ND		1200	210	ug/Kg	☼		10/27/21 15:58	1
Methanol (2C)	ND		1200	240	ug/Kg	☼		10/27/21 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*87*		*49 - 142*		*10/27/21 15:58*	*1*
Acetone (2C)	*81*		*49 - 142*		*10/27/21 15:58*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.58	0.25	ug/Kg	☼	10/30/21 09:28	11/01/21 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*151*	*S1+*	*60 - 140*	*10/30/21 09:28*	*11/01/21 14:40*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*151*	*S1+*	*60 - 140*	*10/30/21 09:28*	*11/01/21 14:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		20	4.1	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
alpha-Chlordane (1C)	ND		20	4.1	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
beta-BHC (1C)	ND		24	11	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
delta-BHC (1C)	ND		24	11	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Endosulfan I (1C)	ND		20	5.3	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Endosulfan II (1C)	ND		55	26	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Endosulfan sulfate (1C)	ND		41	7.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Endrin (1C)	ND		41	16	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
gamma-BHC (Lindane) (1C)	ND		20	5.0	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
gamma-Chlordane (1C)	ND		20	6.0	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Heptachlor (1C)	ND		20	7.5	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Heptachlor epoxide (1C)	ND		20	4.1	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Methoxychlor (1C)	ND		160	43	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Toxaphene (1C)	ND		790	340	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
4,4'-DDD (1C)	ND		41	7.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Total Endosulfans (I + II) (1C)	ND		20	5.3	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
4,4'-DDE (1C)	**67**		41	7.9	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
4,4'-DDT (1C)	**40**	**J**	41	19	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20
Chlordane (n.o.s.) (1C)	ND		410	96	ug/Kg	☼	10/28/21 16:43	11/01/21 08:20	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*87*		*54 - 143*	*10/28/21 16:43*	*11/01/21 08:20*	*20*
DCB Decachlorobiphenyl (Surr) (2C)	*110*		*54 - 143*	*10/28/21 16:43*	*11/01/21 08:20*	*20*
Tetrachloro-m-xylene (Surr) (1C)	*68*		*20 - 131*	*10/28/21 16:43*	*11/01/21 08:20*	*20*
Tetrachloro-m-xylene (Surr) (2C)	*70*		*20 - 131*	*10/28/21 16:43*	*11/01/21 08:20*	*20*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND	F1	2.0	0.89	ug/Kg	☼	10/27/21 23:55	10/28/21 16:47	1
2,4-Dichlorophenoxyacetic acid (1C)	ND	F2 F1	43	14	ug/Kg	☼	10/27/21 23:55	10/28/21 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*65*		*54 - 140*	*10/27/21 23:55*	*10/28/21 16:47*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*71*		*54 - 140*	*10/27/21 23:55*	*10/28/21 16:47*	*1*

Method: 8318 - Carbamate (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 07:26	20
Carbofuran	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 07:26	20
Methiocarb	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 07:26	20
Methomyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 07:26	20

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Method: 8318 - Carbamate (HPLC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxamyl	ND		300	60	ug/Kg	☼	10/27/21 22:11	10/31/21 07:26	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*58*		*27 - 131*	*10/27/21 22:11*	*10/31/21 07:26*	*20*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**2.5**		1.2	0.11	ng/Kg	☼	10/27/21 12:16	10/29/21 19:36	1
Total HxCDD	**140**	**B**	6.0	0.056	ng/Kg	☼	10/27/21 12:16	10/29/21 19:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*40 - 135*	*10/27/21 12:16*	*10/29/21 19:36*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*40 - 135*	*10/27/21 12:16*	*10/29/21 19:36*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*	*10/27/21 12:16*	*10/29/21 19:36*	*1*
13C-1,2,3,7,8,9-HxCDD	*79*		*40 - 135*	*10/27/21 12:16*	*10/29/21 19:36*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.3**		0.45	0.15	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Barium	**110**		0.45	0.20	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Cadmium	**0.92**		0.11	0.056	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Calcium	**1900**		45	17	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Chromium	**45**		0.45	0.17	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Lead	**140**		1.1	0.28	mg/Kg	☼	10/26/21 15:19	10/27/21 17:34	10
Nickel	**26**		0.45	0.18	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Selenium	**0.41**	**J**	0.45	0.15	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2
Silver	**0.81**		0.11	0.045	mg/Kg	☼	10/26/21 15:19	10/27/21 17:32	2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**6.6**		0.69	0.29	mg/Kg	☼	10/26/21 14:09	10/28/21 19:48	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.60	0.22	mg/Kg	☼		11/05/21 20:34	1
Cyanide, Total	ND		0.57	0.21	mg/Kg	☼	11/05/21 12:42	11/05/21 17:05	1
Percent Moisture	**16.9**		1.0	1.0	%			10/25/21 10:20	1
Percent Solids	**83.1**		1.0	1.0	%			10/25/21 10:20	1

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-60264-1	TWT-LOC-1	110	90	103	101
410-60264-2	TWT-LOC-2	108	97	103	96
410-60264-3	TWT-LOC-3	106	93	102	98
410-60264-4	TWT-LOC-4	103	96	63	96
410-60264-5	TWT-LOC-5	110	92	104	98
410-60264-6	TWT-LOC-6	107	80	107	108
410-60264-8	TWT-LOC-5-D	110	93	103	98
LCS 410-187112/5	Lab Control Sample	102	102	100	98
LCS 410-187112/7	Lab Control Sample	102	99	98	97
LCSD 410-187112/6	Lab Control Sample Dup	103	102	100	99
LCSD 410-187112/8	Lab Control Sample Dup	104	98	99	96
MB 410-187112/10	Method Blank	105	98	100	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-60264-7	TWT-TB-102221	107	100	109	101
LCS 410-190674/5	Lab Control Sample	104	102	108	103
LCS 410-190674/7	Lab Control Sample	100	100	106	101
LCSD 410-190674/6	Lab Control Sample Dup	103	103	107	102
LCSD 410-190674/8	Lab Control Sample Dup	105	101	105	101
MB 410-190674/11	Method Blank	101	100	108	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	TPHd14	PHL
Lab Sample ID	Client Sample ID	(13-121)	(39-100)	(26-96)	(32-97)	(45-108)	(27-104)
410-60264-1	TWT-LOC-1	60	73	68	65	81	68
410-60264-2	TWT-LOC-2	84	82	73	71	94	77
410-60264-3	TWT-LOC-3	81	82	72	72	90	72
410-60264-4	TWT-LOC-4	58	84	47	75	95	78
410-60264-5	TWT-LOC-5	78	81	71	71	88	74
410-60264-6	TWT-LOC-6	68	86	69	75	94	73
410-60264-8	TWT-LOC-5-D	89	93	77	77	104	80

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TBP (13-121)	FBP (39-100)	2FP (26-96)	NBZ (32-97)	TPHd14 (45-108)	PHL (27-104)
LCS 410-188033/2-A	Lab Control Sample	84	82	76	72	94	76
LCS 410-188033/3-A	Lab Control Sample	79	80	76	73	93	76
LCSD 410-188033/4-A	Lab Control Sample Dup	82	82	80	76	97	79
MB 410-188033/1-A	Method Blank	85	91	84	80	108	84

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BAPd12 (36-119)	MNPd10 (37-110)	FLN10 (41-135)
410-60264-1	TWT-LOC-1	81	76	79
410-60264-1 MS	TWT-LOC-1	86	84	88
410-60264-1 MSD	TWT-LOC-1	82	83	86
410-60264-2	TWT-LOC-2	81	91	94
410-60264-3	TWT-LOC-3	84	88	90
410-60264-4	TWT-LOC-4	103	94	97
410-60264-5	TWT-LOC-5	90	96	95
410-60264-6	TWT-LOC-6	83	94	111
410-60264-8	TWT-LOC-5-D	84	86	88
LCS 410-188032/2-A	Lab Control Sample	100	97	101
MB 410-188032/1-A	Method Blank	86 *3	89 *3	89 *3

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)
FLN10 = Fluoranthene-d10 (Surr)

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Solid **Prep Type: Soluble**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Acetone1 (49-142)	Acetone2 (49-142)
410-60264-1	TWT-LOC-1	90	84
410-60264-2	TWT-LOC-2	98	91
410-60264-3	TWT-LOC-3	96	87
410-60264-4	TWT-LOC-4	93	82
410-60264-4 MS	TWT-LOC-4	84	82
410-60264-4 MSD	TWT-LOC-4	86	82
410-60264-5	TWT-LOC-5	88	83
410-60264-6	TWT-LOC-6	92	88
410-60264-8	TWT-LOC-5-D	87	81
LCS 410-187646/2-A	Lab Control Sample	93	91

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Matrix: Solid **Prep Type: Soluble**

		Percent Surrogate Recovery (Acceptance Limits)	
		Acetone1	Acetone2
Lab Sample ID	Client Sample ID	(49-142)	(49-142)
MB 410-187646/1-A	Method Blank	106	98

Surrogate Legend

Acetone = Acetone

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(60-140)	(60-140)
410-60264-1	TWT-LOC-1	90	96
410-60264-2	TWT-LOC-2	264 S1+	273 S1+
410-60264-3	TWT-LOC-3	292 S1+	222 S1+
410-60264-4	TWT-LOC-4	9 S1-	15 S1-
410-60264-5	TWT-LOC-5		147 S1+
410-60264-5 MS	TWT-LOC-5	140	142 S1+
410-60264-5 MSD	TWT-LOC-5	188 S1+	192 S1+
410-60264-6	TWT-LOC-6	131	127
410-60264-8	TWT-LOC-5-D	151 S1+	151 S1+
LCS 410-188951/2-A	Lab Control Sample	94	105
LCSD 410-188951/3-A	Lab Control Sample Dup	99	117
MB 410-188951/1-A	Method Blank	123	121

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-60264-7	TWT-TB-102221	110	93

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(54-143)	(54-143)	(20-131)	(20-131)
410-60264-1	TWT-LOC-1	144 S1+	159 S1+	91	86
410-60264-1 MS	TWT-LOC-1	135	164 S1+	76	76
410-60264-1 MSD	TWT-LOC-1	122	136	69	68
410-60264-2	TWT-LOC-2	342 S1+	181 p S1+	88	85
410-60264-3	TWT-LOC-3	339 S1+	358 S1+	103	94
410-60264-4	TWT-LOC-4	92	97	77	73
410-60264-5	TWT-LOC-5	105	137	88	91
410-60264-5 MS	TWT-LOC-5	119	163 S1+	105	105

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCB1 (54-143)	DCB2 (54-143)	TCX1 (20-131)	TCX2 (20-131)
410-60264-5 MSD	TWT-LOC-5	140	196 S1+	91	95
410-60264-6	TWT-LOC-6	97	119	77	72
410-60264-8	TWT-LOC-5-D	87	110	68	70
LCS 410-188383/2-A	Lab Control Sample	90	98	50	47
LCS 410-190434/2-A	Lab Control Sample	78	91	29	27
MB 410-188383/1-A	Method Blank	82	92	33	33
MB 410-190434/1-A	Method Blank	71	85	22	22

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCPAA1 (54-140)	DCPAA2 (54-140)
410-60264-1	TWT-LOC-1	70	69
410-60264-2	TWT-LOC-2	36 S1-	37 S1-
410-60264-2 MS	TWT-LOC-2	52 S1-	69
410-60264-2 MSD	TWT-LOC-2	46 S1-	59
410-60264-3	TWT-LOC-3	63	62
410-60264-4	TWT-LOC-4	89	83
410-60264-5	TWT-LOC-5	74	83
410-60264-6	TWT-LOC-6	50 S1-	66
410-60264-8	TWT-LOC-5-D	65	71
410-60264-8 MS	TWT-LOC-5-D	74	91
410-60264-8 MSD	TWT-LOC-5-D	55	54
LCS 410-187993/2-A	Lab Control Sample	83	88
LCS 410-189108/2-A	Lab Control Sample	98	101
LCS 410-189567/2-A	Lab Control Sample	67	61
MB 410-187993/1-A	Method Blank	58	50 S1-
MB 410-189108/1-A	Method Blank	95	87
MB 410-189567/1-A	Method Blank	33 S1-	24 S1-

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8318 - Carbamate (HPLC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BDMC (27-131)
410-60264-1	TWT-LOC-1	53
410-60264-1 MS	TWT-LOC-1	61
410-60264-1 MSD	TWT-LOC-1	59
410-60264-2	TWT-LOC-2	54
410-60264-3	TWT-LOC-3	51
410-60264-4	TWT-LOC-4	53
410-60264-5	TWT-LOC-5	58

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8318 - Carbamate (HPLC) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**BDMC (27-131)**							
410-60264-6	TWT-LOC-6	63							
410-60264-8	TWT-LOC-5-D	58							
LCS 410-187977/2-A	Lab Control Sample	58							
MB 410-187977/1-A	Method Blank	58							

Surrogate Legend

BDMC = 4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate

Isotope Dilution Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		TCDD	HxCDD	HxDD	13CHxCD
Lab Sample ID	**Client Sample ID**	**(40-135)**	**(40-135)**	**(40-135)**	**(40-135)**
410-60264-1	TWT-LOC-1	93	85	86	84
410-60264-2	TWT-LOC-2	91	86	88	89
410-60264-3	TWT-LOC-3	92	86	89	86
410-60264-4	TWT-LOC-4	79	71	74	71
410-60264-5	TWT-LOC-5	51	44	44	43
410-60264-6	TWT-LOC-6	53	48	50	49
410-60264-8	TWT-LOC-5-D	86	77	82	79
LCS 410-187763/2-A	Lab Control Sample	97	90	95	91
MB 410-187763/1-A	Method Blank	83	78	83	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
13CHxCD = 13C-1,2,3,7,8,9-HxCDD

QC Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-187112/10
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,1,1-Trichloroethane	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.40	ug/Kg			10/26/21 13:51	1
1,1,2-Trichloroethane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,1-Dichloroethane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,1-Dichloroethene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,2,4-Trichlorobenzene	ND		10	5.0	ug/Kg			10/26/21 13:51	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			10/26/21 13:51	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
1,2-Dichloropropane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
1,4-Dioxane	ND		250	37	ug/Kg			10/26/21 13:51	1
2-Butanone	ND		10	2.0	ug/Kg			10/26/21 13:51	1
4-Methyl-2-pentanone	ND		10	1.0	ug/Kg			10/26/21 13:51	1
Acetone	ND		20	6.0	ug/Kg			10/26/21 13:51	1
Acrylonitrile	ND		20	0.80	ug/Kg			10/26/21 13:51	1
Benzene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Bromoform	ND		10	5.0	ug/Kg			10/26/21 13:51	1
Bromomethane	ND		5.0	0.70	ug/Kg			10/26/21 13:51	1
Carbon disulfide	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
Carbon tetrachloride	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Chlorobenzene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Chloroethane	ND		5.0	1.0	ug/Kg			10/26/21 13:51	1
Chloroform	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
Chloromethane	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
cis-1,3-Dichloropropene	ND		5.0	0.40	ug/Kg			10/26/21 13:51	1
Dibromomethane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Dichlorodifluoromethane	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
Ethyl acetate	ND		5.0	1.0	ug/Kg			10/26/21 13:51	1
Ethyl ether	ND		5.0	1.0	ug/Kg			10/26/21 13:51	1
Ethyl methacrylate	ND		5.0	1.0	ug/Kg			10/26/21 13:51	1
Ethylbenzene	ND		5.0	0.40	ug/Kg			10/26/21 13:51	1
Freon 113	ND		10	0.60	ug/Kg			10/26/21 13:51	1
Methacrylonitrile	ND		50	8.0	ug/Kg			10/26/21 13:51	1
Methyl iodide	ND		5.0	0.40	ug/Kg			10/26/21 13:51	1
Methyl methacrylate	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Methylene Chloride	ND		5.0	2.0	ug/Kg			10/26/21 13:51	1
Pentachloroethane	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Tetrachloroethene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Toluene	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
trans-1,2-Dichloroethene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
trans-1,3-Dichloropropene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Trichloroethene	ND		5.0	0.50	ug/Kg			10/26/21 13:51	1
Trichlorofluoromethane	ND		5.0	0.70	ug/Kg			10/26/21 13:51	1
Vinyl chloride	ND		5.0	0.60	ug/Kg			10/26/21 13:51	1
Xylenes, Total	ND		10	1.4	ug/Kg			10/26/21 13:51	1
Tetrahydrofuran	ND		8.0	1.0	ug/Kg			10/26/21 13:51	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-187112/10
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		54 - 135		10/26/21 13:51	1
4-Bromofluorobenzene (Surr)	98		50 - 131		10/26/21 13:51	1
Dibromofluoromethane (Surr)	100		50 - 141		10/26/21 13:51	1
Toluene-d8 (Surr)	96		52 - 141		10/26/21 13:51	1

Lab Sample ID: LCS 410-187112/5
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	20.0	19.2		ug/Kg		96	73 - 120
1,1,1-Trichloroethane	20.0	19.6		ug/Kg		98	69 - 123
1,1,2,2-Tetrachloroethane	20.0	19.3		ug/Kg		96	69 - 125
1,1,2-Trichloroethane	20.0	19.6		ug/Kg		98	80 - 120
1,1-Dichloroethane	20.0	20.2		ug/Kg		101	79 - 120
1,1-Dichloroethene	20.0	21.0		ug/Kg		105	73 - 129
1,2,4-Trichlorobenzene	20.0	17.6		ug/Kg		88	56 - 130
1,2-Dibromo-3-Chloropropane	20.0	16.9		ug/Kg		84	48 - 134
1,2-Dibromoethane	20.0	18.9		ug/Kg		94	76 - 120
1,2-Dichloroethane	20.0	19.1		ug/Kg		95	71 - 128
1,2-Dichloropropane	20.0	20.7		ug/Kg		104	80 - 120
1,4-Dioxane	500	573		ug/Kg		115	62 - 131
2-Butanone	250	230		ug/Kg		92	57 - 128
4-Methyl-2-pentanone	250	247		ug/Kg		99	67 - 128
Acetone	250	235		ug/Kg		94	41 - 150
Acrylonitrile	100	108		ug/Kg		108	66 - 120
Benzene	20.0	20.5		ug/Kg		103	80 - 120
Bromoform	20.0	18.3		ug/Kg		92	51 - 127
Bromomethane	20.0	20.1		ug/Kg		100	45 - 140
Carbon disulfide	20.0	21.3		ug/Kg		107	64 - 133
Carbon tetrachloride	20.0	19.5		ug/Kg		97	64 - 134
Chlorobenzene	20.0	18.9		ug/Kg		94	80 - 120
Chloroethane	20.0	21.0		ug/Kg		105	43 - 135
Chloroform	20.0	19.9		ug/Kg		99	80 - 120
Chloromethane	20.0	19.4		ug/Kg		97	56 - 120
cis-1,3-Dichloropropene	20.0	20.1		ug/Kg		101	66 - 120
Dibromomethane	20.0	19.9		ug/Kg		99	80 - 120
Dichlorodifluoromethane	20.0	20.8		ug/Kg		104	21 - 127
Ethyl methacrylate	20.0	19.8		ug/Kg		99	65 - 120
Ethylbenzene	20.0	19.2		ug/Kg		96	78 - 120
Freon 113	20.0	16.6		ug/Kg		83	64 - 135
Methacrylonitrile	150	161		ug/Kg		107	76 - 123
Methyl iodide	20.0	19.6		ug/Kg		98	68 - 126
Methyl methacrylate	20.0	20.4		ug/Kg		102	69 - 120
Methylene Chloride	20.0	20.3		ug/Kg		102	76 - 122
Tetrachloroethene	20.0	18.3		ug/Kg		91	73 - 120
Toluene	20.0	18.9		ug/Kg		95	80 - 120
trans-1,2-Dichloroethene	20.0	19.9		ug/Kg		99	80 - 126

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-187112/5
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	20.0	19.6		ug/Kg		98	68 - 122
Trichloroethene	20.0	19.8		ug/Kg		99	80 - 120
Trichlorofluoromethane	20.0	19.7		ug/Kg		98	55 - 134
Vinyl chloride	20.0	19.3		ug/Kg		96	52 - 120
Xylenes, Total	60.0	56.6		ug/Kg		94	75 - 120
Tetrahydrofuran	100	104		ug/Kg		104	71 - 127

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*102*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCS 410-187112/7
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl acetate	20.0	18.0		ug/Kg		90	65 - 133
Ethyl ether	20.0	17.5		ug/Kg		87	59 - 135
Pentachloroethane	20.0	24.1		ug/Kg		121	68 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-187112/6
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	20.0	19.3		ug/Kg		96	73 - 120	0	30
1,1,1-Trichloroethane	20.0	19.4		ug/Kg		97	69 - 123	1	30
1,1,2,2-Tetrachloroethane	20.0	20.1		ug/Kg		100	69 - 125	4	30
1,1,2-Trichloroethane	20.0	20.0		ug/Kg		100	80 - 120	2	30
1,1-Dichloroethane	20.0	19.8		ug/Kg		99	79 - 120	2	30
1,1-Dichloroethene	20.0	20.5		ug/Kg		102	73 - 129	3	30
1,2,4-Trichlorobenzene	20.0	18.4		ug/Kg		92	56 - 130	4	30
1,2-Dibromo-3-Chloropropane	20.0	18.1		ug/Kg		91	48 - 134	7	30
1,2-Dibromoethane	20.0	19.3		ug/Kg		97	76 - 120	2	30
1,2-Dichloroethane	20.0	19.4		ug/Kg		97	71 - 128	1	30
1,2-Dichloropropane	20.0	20.8		ug/Kg		104	80 - 120	0	30
1,4-Dioxane	500	554		ug/Kg		111	62 - 131	3	30
2-Butanone	250	248		ug/Kg		99	57 - 128	8	30
4-Methyl-2-pentanone	250	261		ug/Kg		104	67 - 128	6	30
Acetone	250	239		ug/Kg		96	41 - 150	2	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-187112/6
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile			100	111		ug/Kg		111	66 - 120	3	30
Benzene			20.0	20.5		ug/Kg		102	80 - 120	0	30
Bromoform			20.0	18.7		ug/Kg		93	51 - 127	2	30
Bromomethane			20.0	19.8		ug/Kg		99	45 - 140	1	30
Carbon disulfide			20.0	20.6		ug/Kg		103	64 - 133	3	30
Carbon tetrachloride			20.0	19.2		ug/Kg		96	64 - 134	1	30
Chlorobenzene			20.0	18.9		ug/Kg		94	80 - 120	0	30
Chloroethane			20.0	20.7		ug/Kg		104	43 - 135	1	30
Chloroform			20.0	19.7		ug/Kg		98	80 - 120	1	30
Chloromethane			20.0	19.0		ug/Kg		95	56 - 120	2	30
cis-1,3-Dichloropropene			20.0	20.4		ug/Kg		102	66 - 120	2	30
Dibromomethane			20.0	20.2		ug/Kg		101	80 - 120	2	30
Dichlorodifluoromethane			20.0	20.6		ug/Kg		103	21 - 127	1	30
Ethyl methacrylate			20.0	20.6		ug/Kg		103	65 - 120	4	30
Ethylbenzene			20.0	19.2		ug/Kg		96	78 - 120	0	30
Freon 113			20.0	16.5		ug/Kg		82	64 - 135	1	30
Methacrylonitrile			150	169		ug/Kg		112	76 - 123	5	30
Methyl iodide			20.0	19.4		ug/Kg		97	68 - 126	1	30
Methyl methacrylate			20.0	21.1		ug/Kg		106	69 - 120	3	30
Methylene Chloride			20.0	20.3		ug/Kg		101	76 - 122	0	30
Tetrachloroethene			20.0	18.1		ug/Kg		91	73 - 120	1	30
Toluene			20.0	19.1		ug/Kg		95	80 - 120	1	30
trans-1,2-Dichloroethene			20.0	19.8		ug/Kg		99	80 - 126	1	30
trans-1,3-Dichloropropene			20.0	20.2		ug/Kg		101	68 - 122	3	30
Trichloroethene			20.0	19.6		ug/Kg		98	80 - 120	1	30
Trichlorofluoromethane			20.0	19.4		ug/Kg		97	55 - 134	2	30
Vinyl chloride			20.0	19.0		ug/Kg		95	52 - 120	1	30
Xylenes, Total			60.0	56.7		ug/Kg		95	75 - 120	0	30
Tetrahydrofuran			100	106		ug/Kg		106	71 - 127	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*102*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-187112/8
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethyl acetate			20.0	18.3		ug/Kg		92	65 - 133	1	30
Ethyl ether			20.0	17.8		ug/Kg		89	59 - 135	2	30
Pentachloroethane			20.0	23.9		ug/Kg		120	68 - 126	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-187112/8
Matrix: Solid
Analysis Batch: 187112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: MB 410-190674/11
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			11/04/21 12:16	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/Kg			11/04/21 12:16	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,4-Dioxane	ND		250	29	ug/L			11/04/21 12:16	1
2-Butanone	ND		10	0.50	ug/L			11/04/21 12:16	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			11/04/21 12:16	1
Acetone	ND		20	0.70	ug/L			11/04/21 12:16	1
Acrylonitrile	ND		20	0.30	ug/L			11/04/21 12:16	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Bromoform	ND		4.0	1.0	ug/L			11/04/21 12:16	1
Bromomethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Carbon disulfide	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chlorobenzene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chloroethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Chloroform	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chloromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Dibromomethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Dichlorodifluoromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Ethyl acetate	ND		5.0	0.70	ug/L			11/04/21 12:16	1
Ethyl ether	ND		5.0	0.20	ug/L			11/04/21 12:16	1
Ethyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 12:16	1
Freon 113	ND		10	0.30	ug/L			11/04/21 12:16	1
Methacrylonitrile	ND		50	6.0	ug/L			11/04/21 12:16	1
Methyl iodide	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Methyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Methylene Chloride	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Pentachloroethane	ND		5.0	0.20	ug/L			11/04/21 12:16	1
Tetrachloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Toluene	ND		1.0	0.20	ug/L			11/04/21 12:16	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-190674/11
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Trichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Vinyl chloride	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Xylenes, Total	ND		1.0	0.40	ug/L			11/04/21 12:16	1
Tetrahydrofuran	ND		10	0.70	ug/L			11/04/21 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/04/21 12:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 12:16*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*11/04/21 12:16*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 12:16*	*1*

Lab Sample ID: LCS 410-190674/5
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	20.0	19.0		ug/L		95	78 - 120
1,1,1-Trichloroethane	20.0	19.8		ug/L		99	67 - 126
1,1,2,2-Tetrachloroethane	20.0	19.8		ug/L		99	72 - 120
1,1,2-Trichloroethane	20.0	19.9		ug/L		99	80 - 120
1,1-Dichloroethane	20.0	18.7		ug/L		93	80 - 120
1,1-Dichloroethene	20.0	19.2		ug/L		96	80 - 131
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	18.4		ug/Kg		92	47 - 131
1,2-Dibromoethane	20.0	19.7		ug/L		98	77 - 120
1,2-Dichloroethane	20.0	20.5		ug/L		103	73 - 124
1,2-Dichloropropane	20.0	19.3		ug/L		97	80 - 120
1,4-Dioxane	500	523		ug/L		105	63 - 146
2-Butanone	250	262		ug/L		105	59 - 135
4-Methyl-2-pentanone	250	263		ug/L		105	62 - 133
Acetone	250	240		ug/L		96	54 - 157
Acrylonitrile	100	104		ug/L		104	60 - 129
Benzene	20.0	19.1		ug/L		95	80 - 120
Bromoform	20.0	19.4		ug/L		97	51 - 120
Bromomethane	20.0	17.5		ug/L		87	53 - 128
Carbon disulfide	20.0	18.0		ug/L		90	65 - 128
Carbon tetrachloride	20.0	19.5		ug/L		98	64 - 134
Chlorobenzene	20.0	19.0		ug/L		95	80 - 120
Chloroethane	20.0	18.2		ug/L		91	55 - 123
Chloroform	20.0	20.0		ug/L		100	80 - 120
Chloromethane	20.0	17.9		ug/L		90	56 - 121
cis-1,3-Dichloropropene	20.0	19.1		ug/L		95	75 - 120
Dibromomethane	20.0	20.5		ug/L		102	80 - 120
Dichlorodifluoromethane	20.0	20.3		ug/L		101	41 - 127
Ethyl ether	20.0	20.0		ug/L		100	59 - 141

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-190674/5
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl methacrylate	20.0	18.7		ug/L		93	59 - 141
Ethylbenzene	20.0	18.7		ug/L		93	80 - 120
Freon 113	20.0	18.0		ug/L		90	73 - 139
Methacrylonitrile	150	153		ug/L		102	73 - 124
Methyl iodide	20.0	19.0		ug/L		95	73 - 125
Methyl methacrylate	20.0	19.5		ug/L		97	61 - 121
Methylene Chloride	20.0	19.4		ug/L		97	80 - 120
Tetrachloroethene	20.0	19.1		ug/L		96	80 - 120
Toluene	20.0	18.5		ug/L		93	80 - 120
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	80 - 126
trans-1,3-Dichloropropene	20.0	19.1		ug/L		96	67 - 120
Trichloroethene	20.0	19.1		ug/L		95	80 - 120
Trichlorofluoromethane	20.0	18.3		ug/L		92	55 - 135
Vinyl chloride	20.0	16.9		ug/L		85	56 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
Tetrahydrofuran	100	96.0		ug/L		96	54 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*108*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-190674/7
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl acetate	20.0	19.6		ug/L		98	67 - 131
Pentachloroethane	20.0	17.2		ug/L		86	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-190674/6
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	20.0	19.5		ug/L		97	78 - 120	2	30
1,1,1-Trichloroethane	20.0	19.5		ug/L		98	67 - 126	2	30
1,1,2,2-Tetrachloroethane	20.0	19.6		ug/L		98	72 - 120	1	30
1,1,2-Trichloroethane	20.0	19.8		ug/L		99	80 - 120	0	30
1,1-Dichloroethane	20.0	18.8		ug/L		94	80 - 120	1	30
1,1-Dichloroethene	20.0	19.0		ug/L		95	80 - 131	1	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-190674/6
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	63 - 120	0	30
1,2-Dibromo-3-Chloropropane	20.0	18.8		ug/Kg		94	47 - 131	2	30
1,2-Dibromoethane	20.0	19.5		ug/L		98	77 - 120	1	30
1,2-Dichloroethane	20.0	20.4		ug/L		102	73 - 124	1	30
1,2-Dichloropropane	20.0	19.1		ug/L		95	80 - 120	1	30
1,4-Dioxane	500	524		ug/L		105	63 - 146	0	30
2-Butanone	250	256		ug/L		102	59 - 135	3	30
4-Methyl-2-pentanone	250	257		ug/L		103	62 - 133	2	30
Acetone	250	253		ug/L		101	54 - 157	5	30
Acrylonitrile	100	102		ug/L		102	60 - 129	2	30
Benzene	20.0	19.1		ug/L		96	80 - 120	0	30
Bromoform	20.0	19.3		ug/L		97	51 - 120	0	30
Bromomethane	20.0	17.4		ug/L		87	53 - 128	1	30
Carbon disulfide	20.0	17.9		ug/L		90	65 - 128	1	30
Carbon tetrachloride	20.0	19.8		ug/L		99	64 - 134	1	30
Chlorobenzene	20.0	19.0		ug/L		95	80 - 120	0	30
Chloroethane	20.0	18.3		ug/L		91	55 - 123	0	30
Chloroform	20.0	20.0		ug/L		100	80 - 120	0	30
Chloromethane	20.0	18.3		ug/L		92	56 - 121	2	30
cis-1,3-Dichloropropene	20.0	18.8		ug/L		94	75 - 120	1	30
Dibromomethane	20.0	19.8		ug/L		99	80 - 120	3	30
Dichlorodifluoromethane	20.0	19.8		ug/L		99	41 - 127	2	30
Ethyl ether	20.0	19.7		ug/L		98	59 - 141	2	30
Ethyl methacrylate	20.0	18.5		ug/L		92	59 - 141	1	30
Ethylbenzene	20.0	18.9		ug/L		95	80 - 120	1	30
Freon 113	20.0	18.3		ug/L		91	73 - 139	1	30
Methacrylonitrile	150	151		ug/L		100	73 - 124	1	30
Methyl iodide	20.0	19.2		ug/L		96	73 - 125	1	30
Methyl methacrylate	20.0	18.7		ug/L		94	61 - 121	4	30
Methylene Chloride	20.0	19.6		ug/L		98	80 - 120	1	30
Tetrachloroethene	20.0	18.8		ug/L		94	80 - 120	2	30
Toluene	20.0	18.7		ug/L		93	80 - 120	1	30
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	80 - 126	0	30
trans-1,3-Dichloropropene	20.0	19.4		ug/L		97	67 - 120	1	30
Trichloroethene	20.0	18.8		ug/L		94	80 - 120	1	30
Trichlorofluoromethane	20.0	18.6		ug/L		93	55 - 135	2	30
Vinyl chloride	20.0	17.2		ug/L		86	56 - 120	2	30
Xylenes, Total	60.0	56.3		ug/L		94	80 - 120	1	30
Tetrahydrofuran	100	95.9		ug/L		96	54 - 144	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-190674/8
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethyl acetate			20.0	19.3		ug/L		97	67 - 131	1	30
Pentachloroethane			20.0	17.2		ug/L		86	70 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-188033/1-A
Matrix: Solid
Analysis Batch: 188693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
1,2,4-Trichlorobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
1,2-Dichlorobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
1,3-Dichlorobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
1,4-Dichlorobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
bis(2 chloro-1-methylethyl) ether	ND		43	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4,5-Trichlorophenol	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4,6-Trichlorophenol	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4-Dichlorophenol	ND		43	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4-Dimethylphenol	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4-Dinitrophenol	ND		1000	170	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,4-Dinitrotoluene	ND		170	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,6-Dichlorophenol	ND		130	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2,6-Dinitrotoluene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2-Acetylaminofluorene	ND		330	100	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2-Chloronaphthalene	ND		33	13	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2-Chlorophenol	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
2-Methylphenol	ND		50	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
3-Methylcholanthrene	ND		100	50	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4,4'-Methylene bis(2-chloroaniline)	ND		500	170	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Bromophenyl-phenylether	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Chloro-3-methylphenol	ND		50	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Chloroaniline	ND		170	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Methylphenol	ND		50	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Nitroaniline	ND		170	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
4-Nitrophenol	ND		500	170	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
5-Nitro-o-toluidine	ND		500	170	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Acetophenone	ND		50	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Aniline	ND		170	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Anthracene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Dibenzofuran	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-188033/1-A
Matrix: Solid
Analysis Batch: 188693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Butylbenzylphthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Chrysene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Di-n-butyl phthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Dioctyl phthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Dibenz(a,h)anthracene	ND		17	6.7	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Diethyl phthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Dimethyl phthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Fluoranthene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Hexachlorobenzene	ND		17	6.7	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Hexachlorobutadiene	ND		50	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Hexachlorocyclopentadiene	ND		500	170	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Hexachloroethane	ND		170	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Hexachloropropylene	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Indeno[1,2,3-cd]pyrene	ND		17	4.0	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Isosafrole	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Methapyrilene	ND		5000	1700	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Nitrosodi-n-propylamine	ND		67	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Nitrosodi-n-butylamine	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Nitrosodiethylamine	ND		67	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Nitrosopiperidine	ND		83	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
N-Nitrosopyrrolidine	ND		83	33	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Naphthalene	ND		17	6.7	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Nitrobenzene	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pentachlorobenzene	ND		67	20	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pentachloronitrobenzene	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Phenacetin	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pentachlorophenol	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Phenanthrene	ND		17	4.0	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Phenol	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pronamide	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pyrene	ND		17	3.3	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Pyridine	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Safrole, Total	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Bis(2-chloroethoxy)methane	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Bis(2-chloroethyl)ether	ND		37	17	ug/Kg		10/28/21 09:41	10/29/21 12:54	1
Bis(2-ethylhexyl) phthalate	ND		170	67	ug/Kg		10/28/21 09:41	10/29/21 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*85*		*13 - 121*	*10/28/21 09:41*	*10/29/21 12:54*	*1*
2-Fluorobiphenyl (Surr)	*91*		*39 - 100*	*10/28/21 09:41*	*10/29/21 12:54*	*1*
2-Fluorophenol (Surr)	*84*		*26 - 96*	*10/28/21 09:41*	*10/29/21 12:54*	*1*
Nitrobenzene-d5 (Surr)	*80*		*32 - 97*	*10/28/21 09:41*	*10/29/21 12:54*	*1*
p-Terphenyl-d14 (Surr)	*108*		*45 - 108*	*10/28/21 09:41*	*10/29/21 12:54*	*1*
Phenol-d5 (Surr)	*84*		*27 - 104*	*10/28/21 09:41*	*10/29/21 12:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-188033/2-A
Matrix: Solid
Analysis Batch: 188693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4,5-Tetrachlorobenzene	1670	1330		ug/Kg		80	60 - 120
1,2,4-Trichlorobenzene	1670	1240		ug/Kg		74	59 - 120
1,2-Dichlorobenzene	1670	1220		ug/Kg		73	58 - 120
1,3-Dichlorobenzene	1670	1200		ug/Kg		72	57 - 120
1,4-Dichlorobenzene	1670	1200		ug/Kg		72	57 - 120
bis(2 chloro-1-methylethyl) ether	1670	1210		ug/Kg		73	48 - 120
2,4,5-Trichlorophenol	1670	1470		ug/Kg		88	61 - 120
2,4,6-Trichlorophenol	1670	1490		ug/Kg		89	59 - 120
2,4-Dichlorophenol	1670	1360		ug/Kg		82	62 - 120
2,4-Dimethylphenol	1670	1370		ug/Kg		82	65 - 120
2,4-Dinitrophenol	3330	2700		ug/Kg		81	44 - 120
2,4-Dinitrotoluene	1670	1360		ug/Kg		82	68 - 120
2,6-Dichlorophenol	1670	1320		ug/Kg		79	68 - 120
2,6-Dinitrotoluene	1670	1340		ug/Kg		80	67 - 120
2-Chloronaphthalene	1670	1310		ug/Kg		78	61 - 120
2-Chlorophenol	1670	1290		ug/Kg		77	59 - 120
2-Methylphenol	1670	1310		ug/Kg		79	63 - 120
4-Bromophenyl-phenylether	1670	1390		ug/Kg		83	65 - 120
4-Chloro-3-methylphenol	1670	1340		ug/Kg		81	67 - 120
4-Chloroaniline	1670	1010		ug/Kg		61	10 - 120
4-Methylphenol	1670	1170		ug/Kg		70	56 - 120
4-Nitroaniline	1670	1320		ug/Kg		79	59 - 120
4-Nitrophenol	3330	2890		ug/Kg		87	58 - 120
Acetophenone	1670	1200		ug/Kg		72	54 - 120
Aniline	1670	1130		ug/Kg		68	27 - 120
Anthracene	1670	1410		ug/Kg		84	75 - 120
Dibenzofuran	1670	1420		ug/Kg		85	68 - 120
Benzo[a]anthracene	1670	1400		ug/Kg		84	73 - 120
Benzo[a]pyrene	1670	1380		ug/Kg		83	80 - 123
Butylbenzylphthalate	1670	1410		ug/Kg		85	66 - 120
Chrysene	1670	1310		ug/Kg		78	66 - 120
Di-n-butyl phthalate	1670	1480		ug/Kg		89	65 - 120
N-Dioctyl phthalate	1670	1750		ug/Kg		105	60 - 125
Dibenz(a,h)anthracene	1670	1420		ug/Kg		85	72 - 120
Diethyl phthalate	1670	1400		ug/Kg		84	65 - 120
Dimethyl phthalate	1670	1380		ug/Kg		83	67 - 120
Fluoranthene	1670	1340		ug/Kg		80	71 - 120
Hexachlorobenzene	1670	1330		ug/Kg		80	58 - 120
Hexachlorobutadiene	1670	1260		ug/Kg		76	48 - 120
Hexachlorocyclopentadiene	1670	1480		ug/Kg		89	43 - 120
Hexachloroethane	1670	1130		ug/Kg		68	48 - 120
Indeno[1,2,3-cd]pyrene	1670	1340		ug/Kg		80	71 - 122
N-Nitrosodi-n-propylamine	1670	1210		ug/Kg		72	55 - 120
Naphthalene	1670	1240		ug/Kg		75	60 - 120
Nitrobenzene	1670	1180		ug/Kg		71	56 - 120
Pentachlorophenol	3330	2940		ug/Kg		88	41 - 120
Phenanthrene	1670	1430		ug/Kg		86	74 - 120
Phenol	1670	1290		ug/Kg		78	57 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-188033/2-A
Matrix: Solid
Analysis Batch: 188693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pyrene	1670	1420		ug/Kg		85	70 - 120
Pyridine	3330	1670		ug/Kg		50	20 - 120
Bis(2-chloroethoxy)methane	1670	1310		ug/Kg		79	55 - 120
Bis(2-chloroethyl)ether	1670	1190		ug/Kg		71	49 - 120
Bis(2-ethylhexyl) phthalate	1670	1520		ug/Kg		91	65 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*84*		*13 - 121*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*
2-Fluorophenol (Surr)	*76*		*26 - 96*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*
p-Terphenyl-d14 (Surr)	*94*		*45 - 108*
Phenol-d5 (Surr)	*76*		*27 - 104*

Lab Sample ID: LCS 410-188033/3-A
Matrix: Solid
Analysis Batch: 188693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Acetylaminofluorene	1670	1360		ug/Kg		82	75 - 137
3-Methylcholanthrene	1670	1400		ug/Kg		84	80 - 151
4,4'-Methylene bis(2-chloroaniline)	1670	999		ug/Kg		60	24 - 120
5-Nitro-o-toluidine	1670	799		ug/Kg		48	10 - 120
Hexachloropropylene	1670	1310		ug/Kg		78	37 - 120
Isosafrole	1670	1380		ug/Kg		83	64 - 127
Methapyrilene	3330	2460	J	ug/Kg		74	70 - 130
N-Nitrosodi-n-butylamine	1670	1370		ug/Kg		82	37 - 120
N-Nitrosodiethylamine	1670	1200		ug/Kg		72	36 - 120
N-Nitrosopiperidine	1670	1230		ug/Kg		74	51 - 120
N-Nitrosopyrrolidine	1670	1210		ug/Kg		73	51 - 121
Pentachlorobenzene	1670	1390		ug/Kg		84	52 - 130
Pentachloronitrobenzene	1670	1220		ug/Kg		73	56 - 134
Phenacetin	1670	1360		ug/Kg		82	74 - 130
Pronamide	1670	1510		ug/Kg		91	75 - 136
Safrole, Total	1670	1330		ug/Kg		80	48 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*79*		*13 - 121*
2-Fluorobiphenyl (Surr)	*80*		*39 - 100*
2-Fluorophenol (Surr)	*76*		*26 - 96*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*
Phenol-d5 (Surr)	*76*		*27 - 104*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-188033/4-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188693 — **Prep Batch: 188033**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Acetylaminofluorene	1670	1450		ug/Kg		87	75 - 137	6	30
3-Methylcholanthrene	1670	1540		ug/Kg		93	80 - 151	9	30
4,4'-Methylene bis(2-chloroaniline)	1670	1180		ug/Kg		71	24 - 120	17	30
5-Nitro-o-toluidine	1670	916		ug/Kg		55	10 - 120	14	30
Hexachloropropylene	1670	1340		ug/Kg		80	37 - 120	3	30
Isosafrole	1670	1430		ug/Kg		86	64 - 127	4	30
Methapyrilene	3330	2570	J	ug/Kg		77	70 - 130	5	30
N-Nitrosodi-n-butylamine	1670	1420		ug/Kg		85	37 - 120	4	30
N-Nitrosodiethylamine	1670	1250		ug/Kg		75	36 - 120	4	30
N-Nitrosopiperidine	1670	1300		ug/Kg		78	51 - 120	5	30
N-Nitrosopyrrolidine	1670	1290		ug/Kg		77	51 - 121	6	30
Pentachlorobenzene	1670	1440		ug/Kg		87	52 - 130	4	30
Pentachloronitrobenzene	1670	1270		ug/Kg		76	56 - 134	4	30
Phenacetin	1670	1440		ug/Kg		86	74 - 130	6	30
Pronamide	1670	1540		ug/Kg		92	75 - 136	2	30
Safrole, Total	1670	1390		ug/Kg		83	48 - 124	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*82*		*13 - 121*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*
2-Fluorophenol (Surr)	*80*		*26 - 96*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*
p-Terphenyl-d14 (Surr)	*97*		*45 - 108*
Phenol-d5 (Surr)	*79*		*27 - 104*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-188032/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188704 — **Prep Batch: 188032**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	*3	3.0	1.3	ug/Kg		10/28/21 09:41	10/29/21 16:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*86*	**3*	*36 - 119*	*10/28/21 09:41*	*10/29/21 16:37*	*1*
1-Methylnaphthalene-d10 (Surr)	*89*	**3*	*37 - 110*	*10/28/21 09:41*	*10/29/21 16:37*	*1*
Fluoranthene-d10 (Surr)	*89*	**3*	*41 - 135*	*10/28/21 09:41*	*10/29/21 16:37*	*1*

Lab Sample ID: LCS 410-188032/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188704 — **Prep Batch: 188032**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	33.3	13.3		ug/Kg		40	28 - 52

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 410-188032/2-A
Matrix: Solid
Analysis Batch: 188704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188032

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*100*		*36 - 119*
1-Methylnaphthalene-d10 (Surr)	*97*		*37 - 110*
Fluoranthene-d10 (Surr)	*101*		*41 - 135*

Lab Sample ID: 410-60264-1 MS
Matrix: Solid
Analysis Batch: 188704

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 188032

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	ND	F1	39.6	ND	F1	ug/Kg	☼	0	28 - 52		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*86*		*36 - 119*
1-Methylnaphthalene-d10 (Surr)	*84*		*37 - 110*
Fluoranthene-d10 (Surr)	*88*		*41 - 135*

Lab Sample ID: 410-60264-1 MSD
Matrix: Solid
Analysis Batch: 188704

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 188032

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND	F1	39.4	ND	F1	ug/Kg	☼	0	28 - 52	NC	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*82*		*36 - 119*
1-Methylnaphthalene-d10 (Surr)	*83*		*37 - 110*
Fluoranthene-d10 (Surr)	*86*		*41 - 135*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 410-187646/1-A
Matrix: Solid
Analysis Batch: 187676

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butanol (1C)	ND		1000	200	ug/Kg			10/27/21 12:08	1
Isobutyl alcohol (1C)	ND		1000	170	ug/Kg			10/27/21 12:08	1
Methanol (2C)	ND		1000	200	ug/Kg			10/27/21 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*106*		*49 - 142*		*10/27/21 12:08*	*1*
Acetone (2C)	*98*		*49 - 142*		*10/27/21 12:08*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Lab Sample ID: LCS 410-187646/2-A
Matrix: Solid
Analysis Batch: 187676

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
n-Butanol (1C)	2580	2640		ug/Kg		102	44 - 185
Isobutyl alcohol (1C)	2570	2670		ug/Kg		104	84 - 124
Methanol (2C)	2500	2600		ug/Kg		104	80 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Acetone (1C)	*93*		*49 - 142*
Acetone (2C)	*91*		*49 - 142*

Lab Sample ID: 410-60264-4 MS
Matrix: Solid
Analysis Batch: 187676

Client Sample ID: TWT-LOC-4
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
n-Butanol (1C)	ND		3090	2590		ug/Kg	☼	84	44 - 185
Isobutyl alcohol (1C)	ND		3080	2850		ug/Kg	☼	93	84 - 124
Methanol (2C)	420	J F1	3000	2670	F1	ug/Kg	☼	75	80 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Acetone (1C)	*84*		*49 - 142*
Acetone (2C)	*82*		*49 - 142*

Lab Sample ID: 410-60264-4 MSD
Matrix: Solid
Analysis Batch: 187676

Client Sample ID: TWT-LOC-4
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
n-Butanol (1C)	ND		3090	2490		ug/Kg	☼	80	44 - 185	4	20
Isobutyl alcohol (1C)	ND		3080	2640		ug/Kg	☼	86	84 - 124	8	20
Methanol (2C)	420	J F1	3000	2520	F1	ug/Kg	☼	70	80 - 130	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Acetone (1C)	*86*		*49 - 142*
Acetone (2C)	*82*		*49 - 142*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-188951/1-A
Matrix: Solid
Analysis Batch: 189267

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.50	0.21	ug/Kg		10/30/21 09:28	11/01/21 09:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*123*		*60 - 140*	*10/30/21 09:28*	*11/01/21 09:02*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*121*		*60 - 140*	*10/30/21 09:28*	*11/01/21 09:02*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-188951/2-A
Matrix: Solid
Analysis Batch: 189267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188951

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (1C)			4.48	5.11		ug/Kg		114	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*94*		*60 - 140*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*60 - 140*

Lab Sample ID: LCSD 410-188951/3-A
Matrix: Solid
Analysis Batch: 189267

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 188951

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (1C)			4.48	5.82		ug/Kg		130	60 - 140	13	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*99*		*60 - 140*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*117*		*60 - 140*

Lab Sample ID: 410-60264-5 MS
Matrix: Solid
Analysis Batch: 189267

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 188951

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (1C)	ND		5.23	6.03	E	ug/Kg	☼	115	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*140*		*60 - 140*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*142*	*S1+*	*60 - 140*

Lab Sample ID: 410-60264-5 MSD
Matrix: Solid
Analysis Batch: 189267

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 188951

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (1C)	ND		5.04	5.30		ug/Kg	☼	105	60 - 140	NC	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*188*	*S1+*	*60 - 140*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*192*	*S1+*	*60 - 140*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 410-188383/1-A
Matrix: Solid
Analysis Batch: 189131

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188383

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		0.83	0.17	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
alpha-Chlordane (1C)	ND		0.83	0.17	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
beta-BHC (1C)	ND		1.0	0.44	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
delta-BHC (1C)	ND		1.0	0.45	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Endosulfan I (1C)	ND		0.83	0.22	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Endosulfan II (1C)	ND		2.3	1.1	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Endosulfan sulfate (1C)	ND		1.7	0.33	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Endrin (1C)	ND		1.7	0.68	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
gamma-BHC (Lindane) (1C)	ND		0.83	0.21	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
gamma-Chlordane (1C)	ND		0.83	0.25	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Heptachlor (1C)	ND		0.83	0.31	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Heptachlor epoxide (1C)	ND		0.83	0.17	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Methoxychlor (1C)	ND		6.7	1.8	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Toxaphene (1C)	ND		33	14	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
4,4'-DDD (1C)	ND		1.7	0.33	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Total Endosulfans (I + II) (1C)	ND		0.83	0.22	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
4,4'-DDE (1C)	ND		1.7	0.33	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
4,4'-DDT (1C)	ND		1.7	0.79	ug/Kg		10/28/21 16:43	11/01/21 06:52	1
Chlordane (n.o.s.) (1C)	ND		17	4.0	ug/Kg		10/28/21 16:43	11/01/21 06:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*82*		*54 - 143*	*10/28/21 16:43*	*11/01/21 06:52*	*1*
DCB Decachlorobiphenyl (Surr) (2C)	*92*		*54 - 143*	*10/28/21 16:43*	*11/01/21 06:52*	*1*
Tetrachloro-m-xylene (Surr) (1C)	*33*		*20 - 131*	*10/28/21 16:43*	*11/01/21 06:52*	*1*
Tetrachloro-m-xylene (Surr) (2C)	*33*		*20 - 131*	*10/28/21 16:43*	*11/01/21 06:52*	*1*

Lab Sample ID: LCS 410-188383/2-A
Matrix: Solid
Analysis Batch: 188524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC (1C)	3.38	2.88		ug/Kg		85	55 - 135
alpha-Chlordane (2C)	3.33	2.94		ug/Kg		88	54 - 129
beta-BHC (2C)	3.33	2.67		ug/Kg		80	50 - 132
delta-BHC (1C)	3.33	3.11		ug/Kg		93	47 - 141
Endosulfan I (2C)	3.38	2.90		ug/Kg		86	51 - 124
Endosulfan II (2C)	6.71	6.26		ug/Kg		93	56 - 125
Endosulfan sulfate (2C)	6.71	6.29		ug/Kg		94	56 - 125
Endrin (2C)	6.67	6.25		ug/Kg		94	56 - 129
gamma-BHC (Lindane) (1C)	3.33	2.72		ug/Kg		82	52 - 138
gamma-Chlordane (2C)	3.33	2.98		ug/Kg		89	52 - 137
Heptachlor (2C)	3.38	2.70		ug/Kg		80	52 - 139
Heptachlor epoxide (2C)	3.33	2.94		ug/Kg		88	55 - 133
Methoxychlor (2C)	33.6	35.5		ug/Kg		106	54 - 148
4,4'-DDD (2C)	6.71	6.93		ug/Kg		103	59 - 135
Total Endosulfans (I + II) (2C)	10.1	9.16		ug/Kg		91	
4,4'-DDE (2C)	6.71	6.57		ug/Kg		98	57 - 135
4,4'-DDT (2C)	6.71	6.99		ug/Kg		104	85 - 140

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 410-188383/2-A
Matrix: Solid
Analysis Batch: 188524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188383

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*90*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*98*		*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*50*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*47*		*20 - 131*

Lab Sample ID: 410-60264-1 MS
Matrix: Solid
Analysis Batch: 189131

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 188383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC (1C)	ND		4.01	3.00	J	ug/Kg	☼	75	55 - 135
alpha-Chlordane (2C)	ND		3.96	4.01	J	ug/Kg	☼	101	54 - 129
beta-BHC (1C)	ND	F1	3.96	ND	F1	ug/Kg	☼	0	50 - 132
delta-BHC (1C)	ND	F1	3.96	ND	F1	ug/Kg	☼	0	47 - 141
Endosulfan I (2C)	ND	F1 F2	4.01	3.28	J	ug/Kg	☼	82	51 - 124
Endosulfan II (1C)	ND	F1	7.96	ND	F1	ug/Kg	☼	0	56 - 125
Endosulfan sulfate (1C)	ND		7.96	5.57	J p	ug/Kg	☼	70	56 - 125
Endrin (1C)	ND		7.91	6.30	J	ug/Kg	☼	80	56 - 129
gamma-BHC (Lindane) (1C)	ND	F1	3.96	2.80	J	ug/Kg	☼	71	52 - 138
gamma-Chlordane (2C)	ND		3.96	3.88	J	ug/Kg	☼	98	52 - 137
Heptachlor (2C)	ND	F1	4.01	3.37	J	ug/Kg	☼	84	52 - 139
Heptachlor epoxide (1C)	ND		3.96	3.33	J	ug/Kg	☼	84	55 - 133
Methoxychlor (2C)	ND		39.9	35.4	J	ug/Kg	☼	89	54 - 148
4,4'-DDD (1C)	ND		7.96	6.35	J	ug/Kg	☼	80	59 - 135
Total Endosulfans (I + II) (2C)	ND	F2	12.0	3.28	J	ug/Kg	☼	27	
4,4'-DDE (1C)	3.5	J F1	7.96	8.03	J	ug/Kg	☼	57	57 - 135
4,4'-DDT (1C)	ND	F1	7.96	9.89	J	ug/Kg	☼	124	85 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*135*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*164*	*S1+*	*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*76*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*76*		*20 - 131*

Lab Sample ID: 410-60264-1 MSD
Matrix: Solid
Analysis Batch: 189131

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 188383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC (1C)	ND		3.98	2.44	J	ug/Kg	☼	61	55 - 135	21	50
alpha-Chlordane (1C)	ND		3.93	3.36	J	ug/Kg	☼	86	54 - 129	17	50
beta-BHC (1C)	ND	F1	3.93	ND	F1	ug/Kg	☼	0	50 - 132	NC	50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 410-60264-1 MSD
Matrix: Solid
Analysis Batch: 189131

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 188383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
delta-BHC (1C)	ND	F1	3.93	ND	F1	ug/Kg	☼	0	47 - 141	NC	50
Endosulfan I (1C)	ND	F1 F2	3.98	1.84	J F1 F2	ug/Kg	☼	46	51 - 124	56	50
Endosulfan II (1C)	ND	F1	7.91	ND	F1	ug/Kg	☼	0	56 - 125	NC	50
Endosulfan sulfate (1C)	ND		7.91	4.93	J p	ug/Kg	☼	62	56 - 125	12	50
Endrin (1C)	ND		7.86	5.55	J	ug/Kg	☼	71	56 - 129	13	50
gamma-BHC (Lindane) (2C)	ND	F1	3.93	1.94	J F1	ug/Kg	☼	49	52 - 138	36	50
gamma-Chlordane (2C)	ND		3.93	3.67	J	ug/Kg	☼	93	52 - 137	6	50
Heptachlor (2C)	ND	F1	3.98	3.35	J	ug/Kg	☼	84	52 - 139	0	50
Heptachlor epoxide (1C)	ND		3.93	3.04	J	ug/Kg	☼	77	55 - 133	9	50
Methoxychlor (1C)	ND		39.7	30.8	J	ug/Kg	☼	78	54 - 148	14	50
4,4'-DDD (1C)	ND		7.91	5.73	J	ug/Kg	☼	72	59 - 135	10	50
Total Endosulfans (I + II) (1C)	ND	F2	11.9	1.84	J F2	ug/Kg	☼	15		56	50
4,4'-DDE (1C)	3.5	J F1	7.91	7.76	J F1	ug/Kg	☼	54	57 - 135	4	50
4,4'-DDT (1C)	ND	F1	7.91	8.86	J	ug/Kg	☼	112	85 - 140	11	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*122*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*136*		*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*69*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*68*		*20 - 131*

Lab Sample ID: MB 410-190434/1-A
Matrix: Solid
Analysis Batch: 190782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (2C)	ND		0.83	0.17	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
alpha-Chlordane (2C)	ND		0.83	0.17	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
beta-BHC (2C)	ND		1.0	0.44	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
delta-BHC (2C)	ND		1.0	0.45	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Endosulfan I (2C)	ND		0.83	0.22	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Endosulfan II (2C)	ND		2.3	1.1	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Endosulfan sulfate (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Endrin (2C)	ND		1.7	0.68	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
gamma-BHC (Lindane) (2C)	ND		0.83	0.21	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
gamma-Chlordane (2C)	ND		0.83	0.25	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Heptachlor (2C)	ND		0.83	0.31	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Heptachlor epoxide (2C)	ND		0.83	0.17	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Methoxychlor (2C)	ND		6.7	1.8	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Toxaphene (2C)	ND		33	14	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
4,4'-DDD (2C)	0.457	J	1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
p,p'-DDD (2C)	0.457	J	1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Total Endosulfans (I + II) (2C)	ND		0.83	0.22	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
4,4'-DDE (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
p,p'-DDE (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 410-190434/1-A
Matrix: Solid
Analysis Batch: 190782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT (2C)	ND		1.7	0.79	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
p,p'-DDT (2C)	ND		1.7	0.79	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
o,p'-DDD (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
o,p'-DDE (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
o,p'-DDT (2C)	ND		1.7	0.33	ug/Kg		11/03/21 16:08	11/04/21 12:15	1
Chlordane (n.o.s.) (2C)	ND		17	4.0	ug/Kg		11/03/21 16:08	11/04/21 12:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*71*		*54 - 143*	*11/03/21 16:08*	*11/04/21 12:15*	*1*
DCB Decachlorobiphenyl (Surr) (2C)	*85*		*54 - 143*	*11/03/21 16:08*	*11/04/21 12:15*	*1*
Tetrachloro-m-xylene (Surr) (1C)	*22*		*20 - 131*	*11/03/21 16:08*	*11/04/21 12:15*	*1*
Tetrachloro-m-xylene (Surr) (2C)	*22*		*20 - 131*	*11/03/21 16:08*	*11/04/21 12:15*	*1*

Lab Sample ID: LCS 410-190434/2-A
Matrix: Solid
Analysis Batch: 190782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC (2C)	3.38	2.89		ug/Kg		86	55 - 135
alpha-Chlordane (2C)	3.33	2.84		ug/Kg		85	54 - 129
beta-BHC (2C)	3.33	2.73		ug/Kg		82	50 - 132
delta-BHC (2C)	3.33	2.88		ug/Kg		86	47 - 141
Endosulfan I (2C)	3.38	2.71		ug/Kg		80	51 - 124
Endosulfan II (2C)	6.71	5.56		ug/Kg		83	56 - 125
Endosulfan sulfate (2C)	6.71	5.89		ug/Kg		88	56 - 125
Endrin (2C)	6.67	6.10		ug/Kg		92	56 - 129
gamma-BHC (Lindane) (2C)	3.33	2.72		ug/Kg		82	52 - 138
gamma-Chlordane (2C)	3.33	2.84		ug/Kg		85	52 - 137
Heptachlor (2C)	3.38	2.87		ug/Kg		85	52 - 139
Heptachlor epoxide (2C)	3.33	2.91		ug/Kg		87	55 - 133
Methoxychlor (2C)	33.6	30.7		ug/Kg		91	54 - 148
4,4'-DDD (2C)	6.71	6.06		ug/Kg		90	59 - 135
p,p'-DDD (2C)	6.71	6.06		ug/Kg		90	59 - 135
Total Endosulfans (I + II) (2C)	10.1	8.27		ug/Kg		82	
4,4'-DDE (2C)	6.71	6.02		ug/Kg		90	57 - 135
p,p'-DDE (2C)	6.71	6.02		ug/Kg		90	57 - 135
4,4'-DDT (2C)	6.71	6.23		ug/Kg		93	85 - 140
p,p'-DDT (2C)	6.71	6.23		ug/Kg		93	85 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*78*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*91*		*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*29*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*27*		*20 - 131*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 410-60264-5 MS
Matrix: Solid
Analysis Batch: 190782

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 190434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC (2C)	ND		3.93	3.87	J	ug/Kg	☼	99	55 - 135
alpha-Chlordane (2C)	ND	F1	3.88	6.81	J F1	ug/Kg	☼	176	54 - 129
beta-BHC (2C)	ND		3.88	ND		ug/Kg	☼	NC	50 - 132
delta-BHC (2C)	ND		3.88	ND		ug/Kg	☼	NC	47 - 141
Endosulfan I (2C)	ND		3.93	4.13	J	ug/Kg	☼	105	51 - 124
Endosulfan II (2C)	ND		7.81	ND		ug/Kg	☼	NC	56 - 125
Endosulfan sulfate (2C)	26	F1	7.81	38.1	F1	ug/Kg	☼	160	56 - 125
Endrin (2C)	ND		7.76	8.36	J	ug/Kg	☼	NC	56 - 129
gamma-BHC (Lindane) (2C)	ND		3.88	3.82	J	ug/Kg	☼	98	52 - 138
gamma-Chlordane (2C)	ND		3.88	4.46	J	ug/Kg	☼	115	52 - 137
Heptachlor (2C)	ND		3.93	4.22	J	ug/Kg	☼	107	52 - 139
Heptachlor epoxide (2C)	ND		3.88	4.10	J	ug/Kg	☼	106	55 - 133
Methoxychlor (2C)	ND		39.1	51.2	J	ug/Kg	☼	131	54 - 148
p,p'-DDD (2C)	ND	F1 F2	7.81	17.9	J F1	ug/Kg	☼	229	59 - 135
Total Endosulfans (I + II) (2C)	ND		11.7	4.13	J	ug/Kg	☼	35	
p,p'-DDE (2C)	81		7.81	126	4	ug/Kg	☼	582	57 - 135
p,p'-DDT (2C)	56		7.81	111	4	ug/Kg	☼	701	85 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*119*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*163*	*S1+*	*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*105*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*105*		*20 - 131*

Lab Sample ID: 410-60264-5 MSD
Matrix: Solid
Analysis Batch: 190782

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 190434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC (2C)	ND		3.96	3.69	J	ug/Kg	☼	93	55 - 135	5	50
alpha-Chlordane (2C)	ND		3.92	4.34	J	ug/Kg	☼	111	54 - 129	2	50
beta-BHC (2C)	ND		3.92	ND		ug/Kg	☼	NC	50 - 132	NC	50
delta-BHC (2C)	ND		3.92	ND		ug/Kg	☼	NC	47 - 141	NC	50
Endosulfan I (2C)	ND		3.96	4.12	J	ug/Kg	☼	104	51 - 124	0	50
Endosulfan II (2C)	ND		7.88	ND		ug/Kg	☼	NC	56 - 125	NC	50
Endosulfan sulfate (2C)	26	F1	7.88	35.0		ug/Kg	☼	119	56 - 125	9	50
Endrin (2C)	ND		7.83	ND		ug/Kg	☼	NC	56 - 129	NC	50
gamma-BHC (Lindane) (2C)	ND		3.92	3.72	J	ug/Kg	☼	95	52 - 138	3	50
gamma-Chlordane (2C)	ND		3.92	4.34	J	ug/Kg	☼	111	52 - 137	3	50
Heptachlor (2C)	ND		3.96	4.15	J	ug/Kg	☼	105	52 - 139	2	50
Heptachlor epoxide (2C)	ND		3.92	3.85	J	ug/Kg	☼	98	55 - 133	6	50
Methoxychlor (2C)	ND		39.5	46.3	J	ug/Kg	☼	117	54 - 148	10	50
p,p'-DDD (2C)	ND	F1 F2	7.88	8.62	J F2	ug/Kg	☼	109	59 - 135	70	50
Total Endosulfans (I + II) (2C)	ND		11.8	4.12	J	ug/Kg	☼	35		0	50
p,p'-DDE (2C)	81		7.88	122	4	ug/Kg	☼	529	57 - 135	3	50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 410-60264-5 MSD — **Client Sample ID: TWT-LOC-5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 190782 — **Prep Batch: 190434**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
p,p'-DDT (2C)	56		7.88	69.3	4	ug/Kg	☼	164	85 - 140	46	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*140*		*54 - 143*
DCB Decachlorobiphenyl (Surr) (2C)	*196*	*S1+*	*54 - 143*
Tetrachloro-m-xylene (Surr) (1C)	*91*		*20 - 131*
Tetrachloro-m-xylene (Surr) (2C)	*95*		*20 - 131*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-187993/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188009 — **Prep Batch: 187993**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		1.7	0.75	ug/Kg		10/27/21 23:55	10/28/21 12:03	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		36	12	ug/Kg		10/27/21 23:55	10/28/21 12:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*58*		*54 - 140*	*10/27/21 23:55*	*10/28/21 12:03*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*50*	*S1-*	*54 - 140*	*10/27/21 23:55*	*10/28/21 12:03*	*1*

Lab Sample ID: LCS 410-187993/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188009 — **Prep Batch: 187993**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP) (1C)	8.33	8.69		ug/Kg		104	68 - 150
2,4-Dichlorophenoxyacetic acid (1C)	83.5	70.4		ug/Kg		84	57 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*83*		*54 - 140*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*88*		*54 - 140*

Lab Sample ID: 410-60264-8 MS — **Client Sample ID: TWT-LOC-5-D**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188009 — **Prep Batch: 187993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP) (1C)	ND		10.0	8.26		ug/Kg	☼	83	68 - 150
2,4-Dichlorophenoxyacetic acid (1C)	ND	F2 F1	100	88.0		ug/Kg	☼	88	57 - 142

Method: 8151A - Herbicides (GC) (Continued)

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (1C)	74		54 - 140
2,4-Dichlorophenylacetic acid (Surr) (2C)	91		54 - 140

Lab Sample ID: 410-60264-8 MSD — **Client Sample ID: TWT-LOC-5-D**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 188009 — **Prep Batch: 187993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silvex (2,4,5-TP) (1C)	ND		9.96	5.11	F1	ug/Kg	☼	51	68 - 150	47	50
2,4-Dichlorophenoxyacetic acid (1C)	ND	F2 F1	99.8	36.5	J F2 F1	ug/Kg	☼	37	57 - 142	83	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (1C)	55		54 - 140
2,4-Dichlorophenylacetic acid (Surr) (2C)	54		54 - 140

Lab Sample ID: MB 410-189108/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189126 — **Prep Batch: 189108**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		1.7	0.75	ug/Kg		11/01/21 04:05	11/01/21 15:35	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		36	12	ug/Kg		11/01/21 04:05	11/01/21 15:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr) (1C)	95		54 - 140	11/01/21 04:05	11/01/21 15:35	1
2,4-Dichlorophenylacetic acid (Surr) (2C)	87		54 - 140	11/01/21 04:05	11/01/21 15:35	1

Lab Sample ID: LCS 410-189108/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189126 — **Prep Batch: 189108**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP) (2C)	8.33	10.4		ug/Kg		124	68 - 150
2,4-Dichlorophenoxyacetic acid (2C)	83.5	95.2		ug/Kg		114	57 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (1C)	98		54 - 140
2,4-Dichlorophenylacetic acid (Surr) (2C)	101		54 - 140

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 410-189567/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189660 — **Prep Batch: 189567**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		1.7	0.75	ug/Kg		11/02/21 05:00	11/02/21 10:00	1
2,4-Dichlorophenoxyacetic acid (1C)	ND		36	12	ug/Kg		11/02/21 05:00	11/02/21 10:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*33*	*S1-*	*54 - 140*	*11/02/21 05:00*	*11/02/21 10:00*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*24*	*S1-*	*54 - 140*	*11/02/21 05:00*	*11/02/21 10:00*	*1*

Lab Sample ID: LCS 410-189567/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189660 — **Prep Batch: 189567**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP) (1C)	8.33	5.69		ug/Kg		68	68 - 150
2,4-Dichlorophenoxyacetic acid (1C)	83.5	51.9		ug/Kg		62	57 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*67*		*54 - 140*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*61*		*54 - 140*

Lab Sample ID: 410-60264-2 MS — **Client Sample ID: TWT-LOC-2**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189660 — **Prep Batch: 189567**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP) (1C)	1.8	J p F1 *-	9.20	11.8	p	ug/Kg	☼	109	68 - 150
2,4-Dichlorophenoxyacetic acid (1C)	ND	F1 F2	92.2	50.0	F1	ug/Kg	☼	54	57 - 142

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*52*	*S1-*	*54 - 140*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*69*		*54 - 140*

Lab Sample ID: 410-60264-2 MSD — **Client Sample ID: TWT-LOC-2**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 189660 — **Prep Batch: 189567**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silvex (2,4,5-TP) (2C)	1.8	J p F1 *-	9.23	9.16		ug/Kg	☼	80	68 - 150	25	50
2,4-Dichlorophenoxyacetic acid (1C)	ND	F1 F2	92.5	26.9	J F1 F2	ug/Kg	☼	29	57 - 142	60	50

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 410-60264-2 MSD
Matrix: Solid
Analysis Batch: 189660

Client Sample ID: TWT-LOC-2
Prep Type: Total/NA
Prep Batch: 189567

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (1C)	46	S1-	54 - 140
2,4-Dichlorophenylacetic acid (Surr) (2C)	59		54 - 140

Method: 8318 - Carbamate (HPLC)

Lab Sample ID: MB 410-187977/1-A
Matrix: Solid
Analysis Batch: 188938

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		250	50	ug/Kg		10/27/21 22:11	10/30/21 22:25	20
Carbofuran	ND		250	50	ug/Kg		10/27/21 22:11	10/30/21 22:25	20
Methiocarb	ND		250	50	ug/Kg		10/27/21 22:11	10/30/21 22:25	20
Methomyl	ND		250	50	ug/Kg		10/27/21 22:11	10/30/21 22:25	20
Oxamyl	ND		250	50	ug/Kg		10/27/21 22:11	10/30/21 22:25	20

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	58		27 - 131	10/27/21 22:11	10/30/21 22:25	20

Lab Sample ID: LCS 410-187977/2-A
Matrix: Solid
Analysis Batch: 188938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbaryl	501	436		ug/Kg		87	57 - 115
Carbofuran	500	445		ug/Kg		89	73 - 115
Methiocarb	501	447		ug/Kg		89	66 - 115
Methomyl	502	454		ug/Kg		90	71 - 115
Oxamyl	501	445		ug/Kg		89	70 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	58		27 - 131

Lab Sample ID: 410-60264-1 MS
Matrix: Solid
Analysis Batch: 188938

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 187977

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbaryl	ND		600	542		ug/Kg	☼	90	57 - 115
Carbofuran	ND		599	564		ug/Kg	☼	94	73 - 115
Methiocarb	ND		600	577		ug/Kg	☼	96	66 - 115
Methomyl	ND		601	557		ug/Kg	☼	93	71 - 115
Oxamyl	ND		600	537		ug/Kg	☼	89	70 - 115

Method: 8318 - Carbamate (HPLC) (Continued)

Lab Sample ID: 410-60264-1 MS
Matrix: Solid
Analysis Batch: 188938

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 187977

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*61*		*27 - 131*

Lab Sample ID: 410-60264-1 MSD
Matrix: Solid
Analysis Batch: 188938

Client Sample ID: TWT-LOC-1
Prep Type: Total/NA
Prep Batch: 187977

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbaryl	ND		600	535		ug/Kg	☼	89	57 - 115	1	50
Carbofuran	ND		599	550		ug/Kg	☼	92	73 - 115	3	50
Methiocarb	ND		600	553		ug/Kg	☼	92	66 - 115	4	50
Methomyl	ND		601	548		ug/Kg	☼	91	71 - 115	2	50
Oxamyl	ND		600	533		ug/Kg	☼	89	70 - 115	1	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*59*		*27 - 131*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-187763/1-A
Matrix: Solid
Analysis Batch: 188469

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187763

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		1.0	0.028	ng/Kg		10/27/21 12:16	10/29/21 02:27	1
Total HxCDD	0.403	J I	5.0	0.023	ng/Kg		10/27/21 12:16	10/29/21 02:27	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*40 - 135*	*10/27/21 12:16*	*10/29/21 02:27*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*40 - 135*	*10/27/21 12:16*	*10/29/21 02:27*	*1*
13C-1,2,3,6,7,8-HxCDD	*83*		*40 - 135*	*10/27/21 12:16*	*10/29/21 02:27*	*1*
13C-1,2,3,7,8,9-HxCDD	*80*		*40 - 135*	*10/27/21 12:16*	*10/29/21 02:27*	*1*

Lab Sample ID: LCS 410-187763/2-A
Matrix: Solid
Analysis Batch: 188469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187763

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	21.3		ng/Kg		106	68 - 142

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*97*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*90*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*95*		*40 - 135*
13C-1,2,3,7,8,9-HxCDD	*91*		*40 - 135*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-187227/1-A ^2
Matrix: Solid
Analysis Batch: 187964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.40	0.13	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Barium	ND		0.40	0.18	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Cadmium	ND		0.10	0.050	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Calcium	16.2	J	40	15	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Chromium	ND		0.40	0.15	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Lead	ND		0.20	0.050	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Nickel	ND		0.40	0.16	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Selenium	ND		0.40	0.13	mg/Kg		10/26/21 12:52	10/27/21 18:45	2
Silver	ND		0.10	0.041	mg/Kg		10/26/21 12:52	10/27/21 18:45	2

Lab Sample ID: LCS 410-187227/2-A ^2
Matrix: Solid
Analysis Batch: 187964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	50.0	44.5		mg/Kg		89	80 - 120
Barium	50.0	49.8		mg/Kg		100	80 - 120
Cadmium	5.00	5.03		mg/Kg		101	80 - 120
Calcium	500	543		mg/Kg		109	80 - 120
Chromium	50.0	49.7		mg/Kg		99	80 - 120
Lead	5.00	4.99		mg/Kg		100	80 - 120
Nickel	50.0	46.3		mg/Kg		93	80 - 120
Selenium	10.0	9.67		mg/Kg		97	80 - 120
Silver	5.00	4.96		mg/Kg		99	80 - 120

Lab Sample ID: MB 410-187309/1-A ^2
Matrix: Solid
Analysis Batch: 187908

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187309

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.40	0.13	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Barium	ND		0.40	0.18	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Cadmium	ND		0.10	0.050	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Calcium	ND		40	15	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Chromium	ND		0.40	0.15	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Lead	ND		0.20	0.050	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Nickel	ND		0.40	0.16	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Selenium	ND		0.40	0.13	mg/Kg		10/26/21 15:19	10/27/21 16:41	2
Silver	ND		0.10	0.041	mg/Kg		10/26/21 15:19	10/27/21 16:41	2

Lab Sample ID: LCS 410-187309/2-A ^2
Matrix: Solid
Analysis Batch: 187908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	50.0	45.9		mg/Kg		92	80 - 120
Barium	50.0	51.7		mg/Kg		103	80 - 120
Cadmium	5.00	5.21		mg/Kg		104	80 - 120
Calcium	500	506		mg/Kg		101	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-187309/2-A ^2
Matrix: Solid
Analysis Batch: 187908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	50.0	50.6		mg/Kg		101	80 - 120
Lead	5.00	5.22		mg/Kg		104	80 - 120
Nickel	50.0	47.6		mg/Kg		95	80 - 120
Selenium	10.0	10.2		mg/Kg		102	80 - 120
Silver	5.00	5.04		mg/Kg		101	80 - 120

Lab Sample ID: LCSD 410-187309/3-A ^2
Matrix: Solid
Analysis Batch: 187908

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187309

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	50.0	44.6		mg/Kg		89	80 - 120	3	20
Barium	50.0	51.6		mg/Kg		103	80 - 120	0	20
Cadmium	5.00	5.08		mg/Kg		102	80 - 120	3	20
Calcium	500	505		mg/Kg		101	80 - 120	0	20
Chromium	50.0	49.5		mg/Kg		99	80 - 120	2	20
Lead	5.00	5.07		mg/Kg		101	80 - 120	3	20
Nickel	50.0	46.3		mg/Kg		93	80 - 120	3	20
Selenium	10.0	9.95		mg/Kg		99	80 - 120	2	20
Silver	5.00	5.03		mg/Kg		101	80 - 120	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 410-187271/1-A
Matrix: Solid
Analysis Batch: 188487

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187271

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.060	0.025	mg/Kg		10/26/21 14:09	10/28/21 18:54	1

Lab Sample ID: LCS 410-187271/2-A
Matrix: Solid
Analysis Batch: 188487

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187271

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.183		mg/Kg		110	80 - 120

Lab Sample ID: LCSD 410-187271/3-A
Matrix: Solid
Analysis Batch: 188487

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187271

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.187		mg/Kg		112	80 - 120	2	20

QC Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 410-191352/2-A
Matrix: Solid
Analysis Batch: 191513

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191352

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.18	mg/Kg		11/05/21 12:42	11/05/21 16:54	1

Lab Sample ID: LCS 410-191352/1-A
Matrix: Solid
Analysis Batch: 191513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191352

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			10.0	11.0		mg/Kg		110	90 - 110		

Lab Sample ID: 410-60264-5 MS
Matrix: Solid
Analysis Batch: 191513

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 191352

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	ND		5.57	6.13		mg/Kg	☼	110	45 - 145		

Lab Sample ID: 410-60264-5 DU
Matrix: Solid
Analysis Batch: 191513

Client Sample ID: TWT-LOC-5
Prep Type: Total/NA
Prep Batch: 191352

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Total	ND			ND		mg/Kg	☼			NC	20

QC Association Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

GC/MS VOA

Prep Batch: 186399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	5035	
410-60264-2	TWT-LOC-2	Total/NA	Solid	5035	
410-60264-3	TWT-LOC-3	Total/NA	Solid	5035	
410-60264-4	TWT-LOC-4	Total/NA	Solid	5035	
410-60264-5	TWT-LOC-5	Total/NA	Solid	5035	
410-60264-6	TWT-LOC-6	Total/NA	Solid	5035	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	5035	

Analysis Batch: 187112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8260C	186399
410-60264-2	TWT-LOC-2	Total/NA	Solid	8260C	186399
410-60264-3	TWT-LOC-3	Total/NA	Solid	8260C	186399
410-60264-4	TWT-LOC-4	Total/NA	Solid	8260C	186399
410-60264-5	TWT-LOC-5	Total/NA	Solid	8260C	186399
410-60264-6	TWT-LOC-6	Total/NA	Solid	8260C	186399
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8260C	186399
MB 410-187112/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-187112/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-187112/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-187112/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-187112/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 190674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-7	TWT-TB-102221	Total/NA	Water	8260C	
MB 410-190674/11	Method Blank	Total/NA	Water	8260C	
LCS 410-190674/5	Lab Control Sample	Total/NA	Water	8260C	
LCS 410-190674/7	Lab Control Sample	Total/NA	Water	8260C	
LCSD 410-190674/6	Lab Control Sample Dup	Total/NA	Water	8260C	
LCSD 410-190674/8	Lab Control Sample Dup	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 188032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	3546	
410-60264-2	TWT-LOC-2	Total/NA	Solid	3546	
410-60264-3	TWT-LOC-3	Total/NA	Solid	3546	
410-60264-4	TWT-LOC-4	Total/NA	Solid	3546	
410-60264-5	TWT-LOC-5	Total/NA	Solid	3546	
410-60264-6	TWT-LOC-6	Total/NA	Solid	3546	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	3546	
MB 410-188032/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-188032/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	3546	
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	3546	

Prep Batch: 188033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 188033 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-2	TWT-LOC-2	Total/NA	Solid	3546	
410-60264-3	TWT-LOC-3	Total/NA	Solid	3546	
410-60264-4	TWT-LOC-4	Total/NA	Solid	3546	
410-60264-5	TWT-LOC-5	Total/NA	Solid	3546	
410-60264-6	TWT-LOC-6	Total/NA	Solid	3546	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	3546	
MB 410-188033/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-188033/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 410-188033/3-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-188033/4-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 188693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8270D	188033
410-60264-2	TWT-LOC-2	Total/NA	Solid	8270D	188033
410-60264-3	TWT-LOC-3	Total/NA	Solid	8270D	188033
410-60264-4	TWT-LOC-4	Total/NA	Solid	8270D	188033
410-60264-5	TWT-LOC-5	Total/NA	Solid	8270D	188033
410-60264-6	TWT-LOC-6	Total/NA	Solid	8270D	188033
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8270D	188033
MB 410-188033/1-A	Method Blank	Total/NA	Solid	8270D	188033
LCS 410-188033/2-A	Lab Control Sample	Total/NA	Solid	8270D	188033
LCS 410-188033/3-A	Lab Control Sample	Total/NA	Solid	8270D	188033
LCSD 410-188033/4-A	Lab Control Sample Dup	Total/NA	Solid	8270D	188033

Analysis Batch: 188704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8270D SIM	188032
410-60264-2	TWT-LOC-2	Total/NA	Solid	8270D SIM	188032
410-60264-3	TWT-LOC-3	Total/NA	Solid	8270D SIM	188032
410-60264-4	TWT-LOC-4	Total/NA	Solid	8270D SIM	188032
MB 410-188032/1-A	Method Blank	Total/NA	Solid	8270D SIM	188032
LCS 410-188032/2-A	Lab Control Sample	Total/NA	Solid	8270D SIM	188032
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	8270D SIM	188032
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	8270D SIM	188032

Analysis Batch: 189558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-5	TWT-LOC-5	Total/NA	Solid	8270D SIM	188032
410-60264-6	TWT-LOC-6	Total/NA	Solid	8270D SIM	188032
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8270D SIM	188032

GC VOA

Leach Batch: 187646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Soluble	Solid	DI Leach	
410-60264-2	TWT-LOC-2	Soluble	Solid	DI Leach	
410-60264-3	TWT-LOC-3	Soluble	Solid	DI Leach	
410-60264-4	TWT-LOC-4	Soluble	Solid	DI Leach	
410-60264-5	TWT-LOC-5	Soluble	Solid	DI Leach	

GC VOA (Continued)

Leach Batch: 187646 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-6	TWT-LOC-6	Soluble	Solid	DI Leach	
410-60264-8	TWT-LOC-5-D	Soluble	Solid	DI Leach	
MB 410-187646/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 410-187646/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
410-60264-4 MS	TWT-LOC-4	Soluble	Solid	DI Leach	
410-60264-4 MSD	TWT-LOC-4	Soluble	Solid	DI Leach	

Analysis Batch: 187676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Soluble	Solid	8015B	187646
410-60264-2	TWT-LOC-2	Soluble	Solid	8015B	187646
410-60264-3	TWT-LOC-3	Soluble	Solid	8015B	187646
410-60264-4	TWT-LOC-4	Soluble	Solid	8015B	187646
410-60264-5	TWT-LOC-5	Soluble	Solid	8015B	187646
410-60264-6	TWT-LOC-6	Soluble	Solid	8015B	187646
410-60264-8	TWT-LOC-5-D	Soluble	Solid	8015B	187646
MB 410-187646/1-A	Method Blank	Soluble	Solid	8015B	187646
LCS 410-187646/2-A	Lab Control Sample	Soluble	Solid	8015B	187646
410-60264-4 MS	TWT-LOC-4	Soluble	Solid	8015B	187646
410-60264-4 MSD	TWT-LOC-4	Soluble	Solid	8015B	187646

GC Semi VOA

Prep Batch: 187993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-3	TWT-LOC-3	Total/NA	Solid	8151A	
410-60264-5	TWT-LOC-5	Total/NA	Solid	8151A	
410-60264-6	TWT-LOC-6	Total/NA	Solid	8151A	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8151A	
MB 410-187993/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-187993/2-A	Lab Control Sample	Total/NA	Solid	8151A	
410-60264-8 MS	TWT-LOC-5-D	Total/NA	Solid	8151A	
410-60264-8 MSD	TWT-LOC-5-D	Total/NA	Solid	8151A	

Analysis Batch: 188009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-3	TWT-LOC-3	Total/NA	Solid	8151A	187993
410-60264-5	TWT-LOC-5	Total/NA	Solid	8151A	187993
410-60264-6	TWT-LOC-6	Total/NA	Solid	8151A	187993
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8151A	187993
MB 410-187993/1-A	Method Blank	Total/NA	Solid	8151A	187993
LCS 410-187993/2-A	Lab Control Sample	Total/NA	Solid	8151A	187993
410-60264-8 MS	TWT-LOC-5-D	Total/NA	Solid	8151A	187993
410-60264-8 MSD	TWT-LOC-5-D	Total/NA	Solid	8151A	187993

Prep Batch: 188383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	3546	
410-60264-2	TWT-LOC-2	Total/NA	Solid	3546	
410-60264-3	TWT-LOC-3	Total/NA	Solid	3546	
410-60264-4	TWT-LOC-4	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 188383 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-6	TWT-LOC-6	Total/NA	Solid	3546	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	3546	
MB 410-188383/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-188383/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	3546	
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	3546	

Prep Batch: 188507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-7	TWT-TB-102221	Total/NA	Water	8011	

Analysis Batch: 188524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-188383/2-A	Lab Control Sample	Total/NA	Solid	8081B	188383

Analysis Batch: 188679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-7	TWT-TB-102221	Total/NA	Water	8011	188507

Prep Batch: 188951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8011	
410-60264-2	TWT-LOC-2	Total/NA	Solid	8011	
410-60264-3	TWT-LOC-3	Total/NA	Solid	8011	
410-60264-4	TWT-LOC-4	Total/NA	Solid	8011	
410-60264-5	TWT-LOC-5	Total/NA	Solid	8011	
410-60264-6	TWT-LOC-6	Total/NA	Solid	8011	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8011	
MB 410-188951/1-A	Method Blank	Total/NA	Solid	8011	
LCS 410-188951/2-A	Lab Control Sample	Total/NA	Solid	8011	
LCSD 410-188951/3-A	Lab Control Sample Dup	Total/NA	Solid	8011	
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	8011	
410-60264-5 MSD	TWT-LOC-5	Total/NA	Solid	8011	

Prep Batch: 189108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-4	TWT-LOC-4	Total/NA	Solid	8151A	
MB 410-189108/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-189108/2-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 189126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-4	TWT-LOC-4	Total/NA	Solid	8151A	189108
MB 410-189108/1-A	Method Blank	Total/NA	Solid	8151A	189108
LCS 410-189108/2-A	Lab Control Sample	Total/NA	Solid	8151A	189108

Analysis Batch: 189131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8081B	188383
410-60264-2	TWT-LOC-2	Total/NA	Solid	8081B	188383
410-60264-3	TWT-LOC-3	Total/NA	Solid	8081B	188383

GC Semi VOA (Continued)

Analysis Batch: 189131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-4	TWT-LOC-4	Total/NA	Solid	8081B	188383
410-60264-6	TWT-LOC-6	Total/NA	Solid	8081B	188383
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8081B	188383
MB 410-188383/1-A	Method Blank	Total/NA	Solid	8081B	188383
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	8081B	188383
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	8081B	188383

Analysis Batch: 189267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8011	188951
410-60264-2	TWT-LOC-2	Total/NA	Solid	8011	188951
410-60264-3	TWT-LOC-3	Total/NA	Solid	8011	188951
410-60264-4	TWT-LOC-4	Total/NA	Solid	8011	188951
410-60264-5	TWT-LOC-5	Total/NA	Solid	8011	188951
410-60264-6	TWT-LOC-6	Total/NA	Solid	8011	188951
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8011	188951
MB 410-188951/1-A	Method Blank	Total/NA	Solid	8011	188951
LCS 410-188951/2-A	Lab Control Sample	Total/NA	Solid	8011	188951
LCSD 410-188951/3-A	Lab Control Sample Dup	Total/NA	Solid	8011	188951
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	8011	188951
410-60264-5 MSD	TWT-LOC-5	Total/NA	Solid	8011	188951

Prep Batch: 189567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8151A	
410-60264-2	TWT-LOC-2	Total/NA	Solid	8151A	
MB 410-189567/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-189567/2-A	Lab Control Sample	Total/NA	Solid	8151A	
410-60264-2 MS	TWT-LOC-2	Total/NA	Solid	8151A	
410-60264-2 MSD	TWT-LOC-2	Total/NA	Solid	8151A	

Analysis Batch: 189660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8151A	189567
410-60264-2	TWT-LOC-2	Total/NA	Solid	8151A	189567
MB 410-189567/1-A	Method Blank	Total/NA	Solid	8151A	189567
LCS 410-189567/2-A	Lab Control Sample	Total/NA	Solid	8151A	189567
410-60264-2 MS	TWT-LOC-2	Total/NA	Solid	8151A	189567
410-60264-2 MSD	TWT-LOC-2	Total/NA	Solid	8151A	189567

Prep Batch: 190434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-5	TWT-LOC-5	Total/NA	Solid	3546	
MB 410-190434/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-190434/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	3546	
410-60264-5 MSD	TWT-LOC-5	Total/NA	Solid	3546	

Analysis Batch: 190782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-5	TWT-LOC-5	Total/NA	Solid	8081B	190434

GC Semi VOA (Continued)

Analysis Batch: 190782 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-190434/1-A	Method Blank	Total/NA	Solid	8081B	190434
LCS 410-190434/2-A	Lab Control Sample	Total/NA	Solid	8081B	190434
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	8081B	190434
410-60264-5 MSD	TWT-LOC-5	Total/NA	Solid	8081B	190434

HPLC/IC

Prep Batch: 187977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8318_S_Prep	
410-60264-2	TWT-LOC-2	Total/NA	Solid	8318_S_Prep	
410-60264-3	TWT-LOC-3	Total/NA	Solid	8318_S_Prep	
410-60264-4	TWT-LOC-4	Total/NA	Solid	8318_S_Prep	
410-60264-5	TWT-LOC-5	Total/NA	Solid	8318_S_Prep	
410-60264-6	TWT-LOC-6	Total/NA	Solid	8318_S_Prep	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8318_S_Prep	
MB 410-187977/1-A	Method Blank	Total/NA	Solid	8318_S_Prep	
LCS 410-187977/2-A	Lab Control Sample	Total/NA	Solid	8318_S_Prep	
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	8318_S_Prep	
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	8318_S_Prep	

Analysis Batch: 188938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8318	187977
410-60264-2	TWT-LOC-2	Total/NA	Solid	8318	187977
410-60264-3	TWT-LOC-3	Total/NA	Solid	8318	187977
410-60264-4	TWT-LOC-4	Total/NA	Solid	8318	187977
410-60264-5	TWT-LOC-5	Total/NA	Solid	8318	187977
410-60264-6	TWT-LOC-6	Total/NA	Solid	8318	187977
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8318	187977
MB 410-187977/1-A	Method Blank	Total/NA	Solid	8318	187977
LCS 410-187977/2-A	Lab Control Sample	Total/NA	Solid	8318	187977
410-60264-1 MS	TWT-LOC-1	Total/NA	Solid	8318	187977
410-60264-1 MSD	TWT-LOC-1	Total/NA	Solid	8318	187977

Specialty Organics

Prep Batch: 187763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8290A	
410-60264-2	TWT-LOC-2	Total/NA	Solid	8290A	
410-60264-3	TWT-LOC-3	Total/NA	Solid	8290A	
410-60264-4	TWT-LOC-4	Total/NA	Solid	8290A	
410-60264-5	TWT-LOC-5	Total/NA	Solid	8290A	
410-60264-6	TWT-LOC-6	Total/NA	Solid	8290A	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8290A	
MB 410-187763/1-A	Method Blank	Total/NA	Solid	8290A	
LCS 410-187763/2-A	Lab Control Sample	Total/NA	Solid	8290A	

Analysis Batch: 188469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	8290A	187763

Specialty Organics (Continued)

Analysis Batch: 188469 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-2	TWT-LOC-2	Total/NA	Solid	8290A	187763
410-60264-3	TWT-LOC-3	Total/NA	Solid	8290A	187763
410-60264-4	TWT-LOC-4	Total/NA	Solid	8290A	187763
410-60264-5	TWT-LOC-5	Total/NA	Solid	8290A	187763
410-60264-6	TWT-LOC-6	Total/NA	Solid	8290A	187763
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	8290A	187763
MB 410-187763/1-A	Method Blank	Total/NA	Solid	8290A	187763
LCS 410-187763/2-A	Lab Control Sample	Total/NA	Solid	8290A	187763

Metals

Prep Batch: 187227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	3050B	
410-60264-2	TWT-LOC-2	Total/NA	Solid	3050B	
MB 410-187227/1-A ^2	Method Blank	Total/NA	Solid	3050B	
LCS 410-187227/2-A ^2	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 187271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	7471A	
410-60264-2	TWT-LOC-2	Total/NA	Solid	7471A	
410-60264-3	TWT-LOC-3	Total/NA	Solid	7471A	
410-60264-4	TWT-LOC-4	Total/NA	Solid	7471A	
410-60264-5	TWT-LOC-5	Total/NA	Solid	7471A	
410-60264-6	TWT-LOC-6	Total/NA	Solid	7471A	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	7471A	
MB 410-187271/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 410-187271/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 410-187271/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	

Prep Batch: 187309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-3	TWT-LOC-3	Total/NA	Solid	3050B	
410-60264-4	TWT-LOC-4	Total/NA	Solid	3050B	
410-60264-5	TWT-LOC-5	Total/NA	Solid	3050B	
410-60264-6	TWT-LOC-6	Total/NA	Solid	3050B	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	3050B	
MB 410-187309/1-A ^2	Method Blank	Total/NA	Solid	3050B	
LCS 410-187309/2-A ^2	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 410-187309/3-A ^2	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 187908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-3	TWT-LOC-3	Total/NA	Solid	6020A	187309
410-60264-3	TWT-LOC-3	Total/NA	Solid	6020A	187309
410-60264-4	TWT-LOC-4	Total/NA	Solid	6020A	187309
410-60264-5	TWT-LOC-5	Total/NA	Solid	6020A	187309
410-60264-6	TWT-LOC-6	Total/NA	Solid	6020A	187309
410-60264-6	TWT-LOC-6	Total/NA	Solid	6020A	187309
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	6020A	187309

Metals (Continued)

Analysis Batch: 187908 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	6020A	187309
MB 410-187309/1-A ^2	Method Blank	Total/NA	Solid	6020A	187309
LCS 410-187309/2-A ^2	Lab Control Sample	Total/NA	Solid	6020A	187309
LCSD 410-187309/3-A ^2	Lab Control Sample Dup	Total/NA	Solid	6020A	187309

Analysis Batch: 187964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	6020A	187227
410-60264-1	TWT-LOC-1	Total/NA	Solid	6020A	187227
410-60264-2	TWT-LOC-2	Total/NA	Solid	6020A	187227
410-60264-2	TWT-LOC-2	Total/NA	Solid	6020A	187227
MB 410-187227/1-A ^2	Method Blank	Total/NA	Solid	6020A	187227
LCS 410-187227/2-A ^2	Lab Control Sample	Total/NA	Solid	6020A	187227

Analysis Batch: 188487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	7471A	187271
410-60264-2	TWT-LOC-2	Total/NA	Solid	7471A	187271
410-60264-3	TWT-LOC-3	Total/NA	Solid	7471A	187271
410-60264-4	TWT-LOC-4	Total/NA	Solid	7471A	187271
410-60264-5	TWT-LOC-5	Total/NA	Solid	7471A	187271
410-60264-6	TWT-LOC-6	Total/NA	Solid	7471A	187271
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	7471A	187271
MB 410-187271/1-A	Method Blank	Total/NA	Solid	7471A	187271
LCS 410-187271/2-A	Lab Control Sample	Total/NA	Solid	7471A	187271
LCSD 410-187271/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	187271

General Chemistry

Analysis Batch: 186659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	Moisture	
410-60264-2	TWT-LOC-2	Total/NA	Solid	Moisture	
410-60264-3	TWT-LOC-3	Total/NA	Solid	Moisture	
410-60264-4	TWT-LOC-4	Total/NA	Solid	Moisture	
410-60264-5	TWT-LOC-5	Total/NA	Solid	Moisture	
410-60264-6	TWT-LOC-6	Total/NA	Solid	Moisture	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	Moisture	

Prep Batch: 191352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	9012A	
410-60264-2	TWT-LOC-2	Total/NA	Solid	9012A	
410-60264-3	TWT-LOC-3	Total/NA	Solid	9012A	
410-60264-4	TWT-LOC-4	Total/NA	Solid	9012A	
410-60264-5	TWT-LOC-5	Total/NA	Solid	9012A	
410-60264-6	TWT-LOC-6	Total/NA	Solid	9012A	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	9012A	
MB 410-191352/2-A	Method Blank	Total/NA	Solid	9012A	
LCS 410-191352/1-A	Lab Control Sample	Total/NA	Solid	9012A	
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	9012A	

General Chemistry (Continued)

Prep Batch: 191352 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-5 DU	TWT-LOC-5	Total/NA	Solid	9012A	

Analysis Batch: 191513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	9012A	191352
410-60264-2	TWT-LOC-2	Total/NA	Solid	9012A	191352
410-60264-3	TWT-LOC-3	Total/NA	Solid	9012A	191352
410-60264-4	TWT-LOC-4	Total/NA	Solid	9012A	191352
410-60264-5	TWT-LOC-5	Total/NA	Solid	9012A	191352
410-60264-6	TWT-LOC-6	Total/NA	Solid	9012A	191352
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	9012A	191352
MB 410-191352/2-A	Method Blank	Total/NA	Solid	9012A	191352
LCS 410-191352/1-A	Lab Control Sample	Total/NA	Solid	9012A	191352
410-60264-5 MS	TWT-LOC-5	Total/NA	Solid	9012A	191352
410-60264-5 DU	TWT-LOC-5	Total/NA	Solid	9012A	191352

Analysis Batch: 191550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60264-1	TWT-LOC-1	Total/NA	Solid	9012A	
410-60264-2	TWT-LOC-2	Total/NA	Solid	9012A	
410-60264-3	TWT-LOC-3	Total/NA	Solid	9012A	
410-60264-4	TWT-LOC-4	Total/NA	Solid	9012A	
410-60264-5	TWT-LOC-5	Total/NA	Solid	9012A	
410-60264-6	TWT-LOC-6	Total/NA	Solid	9012A	
410-60264-8	TWT-LOC-5-D	Total/NA	Solid	9012A	

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-1
Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-1
Date Collected: 10/22/21 09:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-1
Matrix: Solid
Percent Solids: 83.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 16:24	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 14:28	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		10	188704	10/29/21 20:43	UWHS	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 12:46	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 12:58	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		5	189131	11/01/21 07:25	JC94	ELLE
Total/NA	Prep	8151A			189567	11/02/21 05:00	USL7	ELLE
Total/NA	Analysis	8151A		1	189660	11/02/21 14:08	WN7O	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 01:42	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 14:45	RGA5	ELLE
Total/NA	Prep	3050B			187227	10/26/21 12:52	UJLA	ELLE
Total/NA	Analysis	6020A		2	187964	10/27/21 19:05	UCIG	ELLE
Total/NA	Prep	3050B			187227	10/26/21 12:52	UJLA	ELLE
Total/NA	Analysis	6020A		10	187964	10/27/21 19:07	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		1	188487	10/28/21 19:06	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:00	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-LOC-2
Date Collected: 10/22/21 09:15
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-2

Lab Sample ID: 410-60264-2
Date Collected: 10/22/21 09:15
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 90.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 16:48	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 14:51	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	188704	10/29/21 22:15	UWHS	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 13:05	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 13:15	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		20	189131	11/01/21 07:36	JC94	ELLE
Total/NA	Prep	8151A			189567	11/02/21 05:00	USL7	ELLE
Total/NA	Analysis	8151A		1	189660	11/02/21 14:43	WN7O	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 02:31	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 15:33	RGA5	ELLE
Total/NA	Prep	3050B			187227	10/26/21 12:52	UJLA	ELLE
Total/NA	Analysis	6020A		2	187964	10/27/21 18:53	UCIG	ELLE
Total/NA	Prep	3050B			187227	10/26/21 12:52	UJLA	ELLE
Total/NA	Analysis	6020A		10	187964	10/27/21 18:55	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		1	188487	10/28/21 19:42	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:03	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-LOC-3

Lab Sample ID: 410-60264-3
Date Collected: 10/22/21 09:00
Matrix: Solid
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-3

Lab Sample ID: 410-60264-3
Date Collected: 10/22/21 09:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 87.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 17:11	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 15:14	DZ6A	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-3

Lab Sample ID: 410-60264-3
Date Collected: 10/22/21 09:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 87.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	188704	10/29/21 22:46	UWHS	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 13:25	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 13:32	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		20	189131	11/01/21 07:47	JC94	ELLE
Total/NA	Prep	8151A			187993	10/27/21 23:55	USL7	ELLE
Total/NA	Analysis	8151A		1	188009	10/28/21 14:25	UAMZ	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 03:20	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 16:22	RGA5	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		2	187908	10/27/21 17:44	UCIG	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		10	187908	10/27/21 17:46	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		10	188487	10/28/21 19:46	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:11	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-LOC-4

Lab Sample ID: 410-60264-4
Date Collected: 10/22/21 09:30
Matrix: Solid
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-4

Lab Sample ID: 410-60264-4
Date Collected: 10/22/21 09:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 17:35	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 15:38	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	188704	10/29/21 23:16	UWHS	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 13:44	LXF2	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-4

Lab Sample ID: 410-60264-4
Date Collected: 10/22/21 09:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 13:49	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		5	189131	11/01/21 07:58	JC94	ELLE
Total/NA	Prep	8151A			189108	11/01/21 04:05	USL7	ELLE
Total/NA	Analysis	8151A		1	189126	11/01/21 20:18	WN7O	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 04:10	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 17:10	RGA5	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		2	187908	10/27/21 17:11	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		1	188487	10/28/21 19:00	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:10	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-LOC-5

Lab Sample ID: 410-60264-5
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-5

Lab Sample ID: 410-60264-5
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 17:59	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 16:02	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	189558	11/02/21 10:56	UJM0	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 14:42	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 14:06	JC94	ELLE
Total/NA	Prep	3546			190434	11/03/21 16:08	D7SW	ELLE
Total/NA	Analysis	8081B		10	190782	11/04/21 12:59	WN7O	ELLE
Total/NA	Prep	8151A			187993	10/27/21 23:55	USL7	ELLE
Total/NA	Analysis	8151A		1	188009	10/28/21 15:36	UAMZ	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5

Lab Sample ID: 410-60264-5
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 04:59	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 17:59	RGA5	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		2	187908	10/27/21 17:03	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		10	188487	10/28/21 19:36	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 16:56	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-LOC-6

Lab Sample ID: 410-60264-6
Date Collected: 10/22/21 10:30
Matrix: Solid
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-6

Lab Sample ID: 410-60264-6
Date Collected: 10/22/21 10:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 88.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 18:22	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 16:25	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	189558	11/02/21 11:27	UJM0	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 15:39	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 14:23	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		10	189131	11/01/21 08:09	JC94	ELLE
Total/NA	Prep	8151A			187993	10/27/21 23:55	USL7	ELLE
Total/NA	Analysis	8151A		1	188009	10/28/21 16:11	UAMZ	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 05:48	GM5C	ELLE
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 18:47	RGA5	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		2	187908	10/27/21 16:51	UCIG	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-6

Lab Sample ID: 410-60264-6
Date Collected: 10/22/21 10:30
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 88.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		10	187908	10/27/21 16:53	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		10	188487	10/28/21 19:44	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:13	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Client Sample ID: TWT-TB-102221

Lab Sample ID: 410-60264-7
Date Collected: 10/22/21 06:00
Matrix: Water
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	190674	11/04/21 14:00	TQ4J	ELLE
Total/NA	Prep	8011			188507	10/29/21 03:50	UKQ8	ELLE
Total/NA	Analysis	8011		1	188679	10/29/21 15:23	JC94	ELLE

Client Sample ID: TWT-LOC-5-D

Lab Sample ID: 410-60264-8
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	186659	10/25/21 10:20	UWC1	ELLE

Client Sample ID: TWT-LOC-5-D

Lab Sample ID: 410-60264-8
Date Collected: 10/22/21 10:00
Matrix: Solid
Date Received: 10/22/21 16:22
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			186399	10/23/21 17:40	UK3O	ELLE
Total/NA	Analysis	8260C		1	187112	10/26/21 18:46	UCB5	ELLE
Total/NA	Prep	3546			188033	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D		1	188693	10/29/21 16:49	DZ6A	ELLE
Total/NA	Prep	3546			188032	10/28/21 09:41	U9KU	ELLE
Total/NA	Analysis	8270D SIM		1	189558	11/02/21 11:59	UJM0	ELLE
Soluble	Leach	DI Leach			187646	10/27/21 09:19	LXF2	ELLE
Soluble	Analysis	8015B		1	187676	10/27/21 15:58	LXF2	ELLE
Total/NA	Prep	8011			188951	10/30/21 09:28	A2VL	ELLE
Total/NA	Analysis	8011		1	189267	11/01/21 14:40	JC94	ELLE
Total/NA	Prep	3546			188383	10/28/21 16:43	D7SW	ELLE
Total/NA	Analysis	8081B		20	189131	11/01/21 08:20	JC94	ELLE
Total/NA	Prep	8151A			187993	10/27/21 23:55	USL7	ELLE
Total/NA	Analysis	8151A		1	188009	10/28/21 16:47	UAMZ	ELLE
Total/NA	Prep	8318_S_Prep			187977	10/27/21 22:11	K2IL	ELLE
Total/NA	Analysis	8318		20	188938	10/31/21 07:26	GM5C	ELLE

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Client Sample ID: TWT-LOC-5-D

Date Collected: 10/22/21 10:00
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60264-8

Matrix: Solid
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290A			187763	10/27/21 12:16	UJSZ	ELLE
Total/NA	Analysis	8290A		1	188469	10/29/21 19:36	RGA5	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		2	187908	10/27/21 17:32	UCIG	ELLE
Total/NA	Prep	3050B			187309	10/26/21 15:19	UJLA	ELLE
Total/NA	Analysis	6020A		10	187908	10/27/21 17:34	UCIG	ELLE
Total/NA	Prep	7471A			187271	10/26/21 14:09	UJLA	ELLE
Total/NA	Analysis	7471A		10	188487	10/28/21 19:48	UEFS	ELLE
Total/NA	Prep	9012A			191352	11/05/21 12:42	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:05	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B		Solid	Isobutyl alcohol (1C)
8015B		Solid	n-Butanol (1C)
8081B	3546	Solid	Total Endosulfans (I + II) (1C)
8081B	3546	Solid	Total Endosulfans (I + II) (2C)
8260C	5035	Solid	Ethyl ether
9012A		Solid	Cyanide, Amenable
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
8015B	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8081B	Organochlorine Pesticides (GC)	SW846	ELLE
8151A	Herbicides (GC)	SW846	ELLE
8318	Carbamate (HPLC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
7471A	Mercury (CVAA)	SW846	ELLE
9012A	Cyanide, Amenable	SW846	ELLE
9012A	Cyanide, Total and/or Amenable	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
7471A	Preparation, Mercury	SW846	ELLE
8011	Microextraction	SW846	ELLE
8151A	Extraction (Herbicides)	SW846	ELLE
8290A	Soxhlet Extraction of Dioxins and Furans	SW846	ELLE
8318_S_Prep	Preparation, Carbamate (HPLC)	SW846	ELLE
9012A	Cyanide, Total and/or Amenable, Distillation	SW846	ELLE
DI Leach	Deionized Water Leaching Procedure	ASTM	ELLE

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60264-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-60264-1	TWT-LOC-1	Solid	10/22/21 09:45	10/22/21 16:22
410-60264-2	TWT-LOC-2	Solid	10/22/21 09:15	10/22/21 16:22
410-60264-3	TWT-LOC-3	Solid	10/22/21 09:00	10/22/21 16:22
410-60264-4	TWT-LOC-4	Solid	10/22/21 09:30	10/22/21 16:22
410-60264-5	TWT-LOC-5	Solid	10/22/21 10:00	10/22/21 16:22
410-60264-6	TWT-LOC-6	Solid	10/22/21 10:30	10/22/21 16:22
410-60264-7	TWT-TB-102221	Water	10/22/21 06:00	10/22/21 16:22
410-60264-8	TWT-LOC-5-D	Solid	10/22/21 10:00	10/22/21 16:22

410-60264 Chain of Custody

LLC

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Philip Chen	Lab PM: Badman, Vanessa	Carrier Tracking No(s):	COC No: 410-36350-11369.1
Client Contact: Ms. Sharon Nordstrom	Phone: 302 563 0917	E-Mail: vanessa.badman@eurofinset.com	State of Origin: DE	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:
Address: ADQM 4051 Ogletown Road Suite 300	Due Date Requested:			
City: Newark	TAT Requested (days):			
State, Zip: DE, 19713	Compliance Project: Δ Yes Δ No			
Phone: 302-781-5936(Tel)	PO #: 128221			
Email: sharon.nordstrom@aecom.com	WO #:			
Project Name: Experimental Station	Project #: 41003343			
Site: EXP	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	6020A, 7471A, 8015B_DAI, 8081B, 8151A, 8270D, 8270D_SIM, 8290A, 8318, 9012A, 9012A_Calc.	8260C - EXP Station Table 2 VOCs (High)	8011 - Ethylene Dibromide 8011	8260C - Furan 8260C (Sub to ETA Savannah)	531.1 - (MOD) Carbamates	8081B, 8270D, 8270D_SIM	6020A, 7470A	8260C - EXP Station Table 2 VOCs 8260C	8011 - Ethylene Dibromide	8290A, 8151A	8015B_DAI - (MOD) 8015B	9012A, 9012A_Calc	8260C - Furan 8260C (Sub to ETA Savannah)	The 8260C Furans were subcontracted from the field by the client.
			Preservation Code:		N	N	N	N	N	N	D	A	A	N	N	SE		
TWT-LOC-1	10/22/21	945	G	Solid	X	X	X	X										
TWT-LOC-2		915	G	Solid	X	X	X	X										
TWT-LOC-3		900	G	Solid	X	X	X	X										
TWT-LOC-4		930	G	Solid	X	X	X	X										
TWT-LOC-5		1000	G	Solid	X	X	X	X										
TWT-LOC-6		1030	G	Solid	X	X	X	X										
~~TWT-EB-102221~~		~~1145~~	~~G~~	~~Water~~					X	X	X	X	X	X	X	X	X	Placed in Separate Cooler
TWT-TB-102221	10/22/2021	600 AM	G	Water					X	X	X	X	X	X	X	X	X	
TWT-LOC-5-D	10/22/21	1000	G	Solid	X	X	X	X										

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/22/2021 1200 Noon	AECOM			
			[signature]	10/22/21 16:22	ECL

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.7-4.2

Ver: 01/16/2019

11/11/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: AECOM

Job Number: 410-60264-1

Login Number: 60264
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Did not receive all required containers.
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-60305-1
Client Project/Site: Experimental Station
Revision: 1

For:
AECOM
ADQM
4051 Ogletown Road
Suite 300
Newark, Delaware 19713

Attn: Ms. Sharon Nordstrom

Vanessa M. Badman

Authorized for release by:
11/12/2021 10:45:20 AM

Vanessa Badman, Project Manager
(717)556-9762
vanessa.badman@eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Vanessa Badman
Project Manager
11/12/2021 10:45:20 AM

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-60305-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-60305-1

REVISION

The report being provided is a revision of the original report sent on 11/8/2021. The report (revision 1) is being revised due to a client request to not show the isomers on the lab report for method 8290 and also to correct a units issue for methods 8260, 8270, and 8081.

Report revision history

Receipt
The sample was received on 10/22/2021 4:22 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

GC/MS VOA
Method 8260C: The preservative used in the sample containers provided is not compatible with the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid: TWT-EB-102221 (410-60305-1). The requested target analyte list includes Acrylonitrile, acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The continuing calibration verification (CCV) analyzed in batch 410-188586 was below the method criteria for the following analyte(s): 4-Nitrophenol and Hexachlorocyclopentadiene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270D: The continuing calibration verification (CCV) associated with batch 410-188586 recovered above the upper control limit for Methapyrilene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Hydrocarbons
Method 8015B_DAI: The continuing calibration verification (CCV) recovered above the upper control limit for Isobutanol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. TWT-EB-102221 (410-60305-1).

Method 8015B_DAI: The continuing calibration verification (CCV) recovered outside acceptance criteria, low biased, for Methanol on the confirmation column. The associated sample was non-detect and were reported from the primary column. TWT-EB-102221 (410-60305-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 410-60305-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

Pesticides
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Dioxin
Method 8290A: The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: (MB 410-187978/1-A). IDA passes all ratio and S/N criteria. IDA in all associated samples passes recovery criteria.

Method 8290A: The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: TWT-EB-102221 (410-60305-1). IDA passes all ratio and S/N criteria. IDA in all associated samples passes recovery criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221 — Lab Sample ID: 410-60305-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	1.7		1.0	0.30	ug/L	1		8260C	Total/NA
Total HxCDD	2.9	J I B	26	0.071	pg/L	1		8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Lab Sample ID: 410-60305-1

Date Collected: 10/22/21 11:45
Matrix: Water
Date Received: 10/22/21 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			11/04/21 14:20	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/L			11/04/21 14:20	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			11/04/21 14:20	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
1,4-Dioxane	ND		250	29	ug/L			11/04/21 14:20	1
2-Butanone	ND		10	0.50	ug/L			11/04/21 14:20	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			11/04/21 14:20	1
Acetone	ND		20	0.70	ug/L			11/04/21 14:20	1
Acrylonitrile	ND		20	0.30	ug/L			11/04/21 14:20	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Bromoform	ND		4.0	1.0	ug/L			11/04/21 14:20	1
Bromomethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Carbon disulfide	ND		5.0	0.30	ug/L			11/04/21 14:20	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Chlorobenzene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Chloroethane	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Chloroform	**1.7**		1.0	0.30	ug/L			11/04/21 14:20	1
Chloromethane	ND		1.0	0.20	ug/L			11/04/21 14:20	1
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Dibromomethane	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Dichlorodifluoromethane	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Ethyl acetate	ND		5.0	0.70	ug/L			11/04/21 14:20	1
Ethyl ether	ND		5.0	0.20	ug/L			11/04/21 14:20	1
Ethyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 14:20	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 14:20	1
Freon 113	ND		10	0.30	ug/L			11/04/21 14:20	1
Methacrylonitrile	ND		50	6.0	ug/L			11/04/21 14:20	1
Methyl iodide	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Methyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 14:20	1
Methylene Chloride	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Pentachloroethane	ND		5.0	0.20	ug/L			11/04/21 14:20	1
Tetrachloroethene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Toluene	ND		1.0	0.20	ug/L			11/04/21 14:20	1
trans-1,2-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Trichloroethene	ND		1.0	0.30	ug/L			11/04/21 14:20	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Vinyl chloride	ND		1.0	0.20	ug/L			11/04/21 14:20	1
Xylenes, Total	ND		1.0	0.40	ug/L			11/04/21 14:20	1
Tetrahydrofuran	ND		10	0.70	ug/L			11/04/21 14:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/04/21 14:20*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Date Collected: 10/22/21 11:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60305-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 14:20*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*11/04/21 14:20*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 14:20*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.33	0.11	ug/L		10/27/21 16:50	10/29/21 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*90*		*10 - 110*	*10/27/21 16:50*	*10/29/21 18:55*	*1*
1-Methylnaphthalene-d10 (Surr)	*74*		*36 - 111*	*10/27/21 16:50*	*10/29/21 18:55*	*1*
Fluoranthene-d10 (Surr)	*99*		*47 - 128*	*10/27/21 16:50*	*10/29/21 18:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
1,2,4-Trichlorobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
1,2-Dichlorobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
1,3-Dichlorobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
1,4-Dichlorobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
bis(2 chloro-1-methylethyl) ether	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4,5-Trichlorophenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4,6-Trichlorophenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4-Dichlorophenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4-Dimethylphenol	ND		11	3.3	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4-Dinitrophenol	ND		33	15	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,4-Dinitrotoluene	ND		5.5	1.1	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,6-Dichlorophenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2,6-Dinitrotoluene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2-Acetylaminofluorene	ND	*+	23	11	ug/L		10/27/21 16:50	10/29/21 13:45	1
2-Chloronaphthalene	ND		1.1	0.44	ug/L		10/27/21 16:50	10/29/21 13:45	1
2-Chlorophenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
2-Methylphenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
3-Methylcholanthrene	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
4,4'-Methylene bis(2-chloroaniline)	ND	*+	110	55	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Bromophenyl-phenylether	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Chloro-3-methylphenol	ND		5.5	1.1	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Chloroaniline	ND		11	4.4	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Methylphenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Nitroaniline	ND		3.3	0.98	ug/L		10/27/21 16:50	10/29/21 13:45	1
4-Nitrophenol	ND		33	11	ug/L		10/27/21 16:50	10/29/21 13:45	1
5-Nitro-o-toluidine	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Acetophenone	ND		5.5	1.1	ug/L		10/27/21 16:50	10/29/21 13:45	1
Aniline	ND		5.5	1.1	ug/L		10/27/21 16:50	10/29/21 13:45	1
Anthracene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Benzo[a]anthracene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Benzo[a]pyrene	ND		0.55	0.12	ug/L		10/27/21 16:50	10/29/21 13:45	1
Butylbenzylphthalate	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Chrysene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Di-n-butyl phthalate	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Date Collected: 10/22/21 11:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60305-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Dioctyl phthalate	ND		12	5.5	ug/L		10/27/21 16:50	10/29/21 13:45	1
Dibenz(a,h)anthracene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Dibenzofuran	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Diethyl phthalate	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Dimethyl phthalate	ND	*1	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Fluoranthene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Hexachlorobenzene	ND		0.55	0.12	ug/L		10/27/21 16:50	10/29/21 13:45	1
Hexachlorobutadiene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Hexachlorocyclopentadiene	ND	*1	12	5.5	ug/L		10/27/21 16:50	10/29/21 13:45	1
Hexachloroethane	ND		5.5	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Hexachloropropylene	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Indeno[1,2,3-cd]pyrene	ND		0.55	0.12	ug/L		10/27/21 16:50	10/29/21 13:45	1
Isosafrole	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Methapyrilene	ND	*+	55	16	ug/L		10/27/21 16:50	10/29/21 13:45	1
N-Nitrosodi-n-propylamine	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
N-Nitrosodi-n-butylamine	ND	*+	12	5.5	ug/L		10/27/21 16:50	10/29/21 13:45	1
N-Nitrosodiethylamine	ND	*+	2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
N-Nitrosopiperidine	ND	*+	2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
N-Nitrosopyrrolidine	ND	*+	2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Naphthalene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Nitrobenzene	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pentachlorobenzene	ND	*+	2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pentachloronitrobenzene	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Phenacetin	ND	*+	5.5	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pentachlorophenol	ND		5.5	1.1	ug/L		10/27/21 16:50	10/29/21 13:45	1
Phenanthrene	ND		0.55	0.12	ug/L		10/27/21 16:50	10/29/21 13:45	1
Phenol	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pronamide	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pyrene	ND		0.55	0.11	ug/L		10/27/21 16:50	10/29/21 13:45	1
Pyridine	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Safrole, Total	ND	*+	5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1
Bis(2-chloroethoxy)methane	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Bis(2-chloroethyl)ether	ND		2.2	0.55	ug/L		10/27/21 16:50	10/29/21 13:45	1
Bis(2-ethylhexyl) phthalate	ND		5.5	2.2	ug/L		10/27/21 16:50	10/29/21 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*77*		*10 - 150*	*10/27/21 16:50*	*10/29/21 13:45*	*1*
2-Fluorobiphenyl (Surr)	*58*		*35 - 100*	*10/27/21 16:50*	*10/29/21 13:45*	*1*
2-Fluorophenol (Surr)	*41*		*10 - 78*	*10/27/21 16:50*	*10/29/21 13:45*	*1*
Nitrobenzene-d5 (Surr)	*65*		*22 - 117*	*10/27/21 16:50*	*10/29/21 13:45*	*1*
p-Terphenyl-d14 (Surr)	*73*		*31 - 119*	*10/27/21 16:50*	*10/29/21 13:45*	*1*
Phenol-d5 (Surr)	*31*		*10 - 67*	*10/27/21 16:50*	*10/29/21 13:45*	*1*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Butanol (1C)	ND		1000	140	ug/L		10/25/21 11:42	10/25/21 15:07	1
Isobutanol (1C)	ND		1000	150	ug/L		10/25/21 11:42	10/25/21 15:07	1
Methanol (2C)	ND		1000	220	ug/L		10/25/21 11:42	10/25/21 15:07	1

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Date Collected: 10/22/21 11:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60305-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*107*		*58 - 149*	*10/25/21 11:42*	*10/25/21 15:07*	*1*
Acetone (2C)	*92*		*58 - 149*	*10/25/21 11:42*	*10/25/21 15:07*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.028	0.0094	ug/L		10/29/21 03:50	10/29/21 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*111*		*46 - 136*	*10/29/21 03:50*	*10/29/21 15:39*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*95*		*46 - 136*	*10/29/21 03:50*	*10/29/21 15:39*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		0.022	0.0034	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
alpha-Chlordane (1C)	ND		0.022	0.0034	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
beta-BHC (1C)	ND		0.022	0.0038	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
delta-BHC (1C)	ND		0.022	0.0038	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Endosulfan I (1C)	ND		0.022	0.0048	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Endosulfan II (1C)	ND		0.045	0.017	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Endosulfan sulfate (1C)	ND		0.034	0.0065	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Endrin (1C)	ND		0.034	0.0091	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
gamma-BHC (Lindane) (1C)	ND		0.022	0.0022	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
gamma-Chlordane (1C)	ND		0.045	0.0079	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Heptachlor (2C)	ND		0.022	0.0022	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Heptachlor epoxide (1C)	ND		0.022	0.0026	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Methoxychlor (1C)	ND		0.12	0.034	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Total Endosulfans (I + II) (1C)	ND		0.022	0.0048	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Toxaphene (1C)	ND		1.1	0.34	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
4,4'-DDD (1C)	ND		0.034	0.0056	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
4,4'-DDE (1C)	ND		0.034	0.0056	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
4,4'-DDT (1C)	ND		0.034	0.0058	ug/Kg		10/27/21 09:07	10/28/21 06:53	1
Chlordane (n.o.s.) (1C)	ND		0.56	0.18	ug/Kg		10/27/21 09:07	10/28/21 06:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr) (1C)	*25*		*20 - 149*	*10/27/21 09:07*	*10/28/21 06:53*	*1*
DCB Decachlorobiphenyl (Surr) (2C)	*28*		*20 - 149*	*10/27/21 09:07*	*10/28/21 06:53*	*1*
Tetrachloro-m-xylene (Surr) (1C)	*67*		*20 - 129*	*10/27/21 09:07*	*10/28/21 06:53*	*1*
Tetrachloro-m-xylene (Surr) (2C)	*62*		*20 - 129*	*10/27/21 09:07*	*10/28/21 06:53*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		0.051	0.010	ug/L		10/28/21 19:19	10/29/21 11:25	1
2,4-D (1C)	ND		0.62	0.26	ug/L		10/28/21 19:19	10/29/21 11:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*86*		*34 - 142*	*10/28/21 19:19*	*10/29/21 11:25*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*68*		*34 - 142*	*10/28/21 19:19*	*10/29/21 11:25*	*1*

Client Sample Results

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Date Collected: 10/22/21 11:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60305-1

Matrix: Water

Method: 531.1 - Carbamate Pesticides (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 08:47	1
Carbofuran	ND		2.0	0.80	ug/L		10/27/21 14:42	10/30/21 08:47	1
Methiocarb	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 08:47	1
Methomyl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 08:47	1
Oxamyl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 08:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*106*		*80 - 120*	*10/27/21 14:42*	*10/30/21 08:47*	*1*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		5.2	0.094	pg/L		10/27/21 15:00	10/29/21 04:41	1
Total HxCDD	**2.9**	**J I B**	26	0.071	pg/L		10/27/21 15:00	10/29/21 04:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*41*		*40 - 135*	*10/27/21 15:00*	*10/29/21 04:41*	*1*
13C-1,2,3,6,7,8-HxCDD	*40*		*40 - 135*	*10/27/21 15:00*	*10/29/21 04:41*	*1*
13C-1,2,3,7,8,9-HxCDD	*39*	**5-*	*40 - 135*	*10/27/21 15:00*	*10/29/21 04:41*	*1*
13C-2,3,7,8-TCDD	*41*		*40 - 135*	*10/27/21 15:00*	*10/29/21 04:41*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.68	ug/L		10/27/21 21:59	10/29/21 12:36	1
Barium	ND		2.0	0.75	ug/L		10/27/21 21:59	10/29/21 12:36	1
Cadmium	ND		0.50	0.15	ug/L		10/27/21 21:59	10/29/21 12:36	1
Calcium	ND		100	74	ug/L		10/27/21 21:59	10/29/21 12:36	1
Chromium	ND		2.0	0.33	ug/L		10/27/21 21:59	10/29/21 12:36	1
Lead	ND		0.50	0.071	ug/L		10/27/21 21:59	10/29/21 12:36	1
Nickel	ND		1.0	0.60	ug/L		10/27/21 21:59	10/29/21 12:36	1
Selenium	ND		1.0	0.28	ug/L		10/27/21 21:59	10/29/21 12:36	1
Silver	ND		0.50	0.17	ug/L		10/27/21 21:59	10/29/21 12:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		10/28/21 05:06	10/28/21 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Amenable	ND		0.010	0.0050	mg/L			11/05/21 20:34	1
Cyanide, Total	ND		0.010	0.0050	mg/L		11/05/21 14:28	11/05/21 17:34	1

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-60305-1	TWT-EB-102221	104	100	109	102
LCS 410-190674/5	Lab Control Sample	104	102	108	103
LCS 410-190674/7	Lab Control Sample	100	100	106	101
LCSD 410-190674/6	Lab Control Sample Dup	103	103	107	102
LCSD 410-190674/8	Lab Control Sample Dup	105	101	105	101
MB 410-190674/11	Method Blank	101	100	108	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	TPHd14	PHL
Lab Sample ID	Client Sample ID	(10-150)	(35-100)	(10-78)	(22-117)	(31-119)	(10-67)
410-60305-1	TWT-EB-102221	77	58	41	65	73	31
LCS 410-187842/2-A	Lab Control Sample	99	77	54	82	90	45
LCS 410-187842/4-A	Lab Control Sample	92	73	49	77	87	38
LCSD 410-187842/3-A	Lab Control Sample Dup	100	79	57	78	90	46
LCSD 410-187842/5-A	Lab Control Sample Dup	96	74	55	81	90	43
MB 410-187842/1-A	Method Blank	89	71	47	77	86	34

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	MNPd10	FLN10
Lab Sample ID	Client Sample ID	(10-110)	(36-111)	(47-128)
410-60305-1	TWT-EB-102221	90	74	99
LCS 410-187843/2-A	Lab Control Sample	99	83	98
LCSD 410-187843/3-A	Lab Control Sample Dup	100	91	102
MB 410-187843/1-A	Method Blank	101	93	113

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)
FLN10 = Fluoranthene-d10 (Surr)

Surrogate Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		Acetone1	Acetone2
Lab Sample ID	Client Sample ID	(58-149)	(58-149)
410-60305-1	TWT-EB-102221	107	92
410-60305-1 MS	TWT-EB-102221	97	94
410-60305-1 MSD	TWT-EB-102221	86	85
LCS 410-186703/2-A	Lab Control Sample	96	92
MB 410-186703/1-A	Method Blank	104	95

Surrogate Legend

Acetone = Acetone

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-60305-1	TWT-EB-102221	111	95
LCS 410-188507/2-A	Lab Control Sample	124	105
LCSD 410-188507/3-A	Lab Control Sample Dup	120	104
MB 410-188507/1-A	Method Blank	122	106

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(20-149)	(20-149)	(20-129)	(20-129)
410-60305-1	TWT-EB-102221	25	28	67	62
LCS 410-187537/2-A	Lab Control Sample	35	36	57	53
LCSD 410-187537/3-A	Lab Control Sample Dup	64	68	64	61
MB 410-187537/1-A	Method Blank	36	40	61	58

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
410-60305-1	TWT-EB-102221	86	68
LCS 410-188438/2-A	Lab Control Sample	93	89
LCSD 410-188438/3-A	Lab Control Sample Dup	77	78
MB 410-188438/1-A	Method Blank	85	77

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Surrogate Summary

Client: AECOM
Job ID: 410-60305-1
Project/Site: Experimental Station

Method: 531.1 - Carbamate Pesticides (HPLC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**BDMC (80-120)**							
410-60305-1	TWT-EB-102221	106							
410-60305-1 MS	TWT-EB-102221	106							
410-60305-1 MSD	TWT-EB-102221	104							
LCS 410-187823/2-A	Lab Control Sample	103							
MB 410-187823/1-A	Method Blank	98							

Surrogate Legend

BDMC = 4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate

Isotope Dilution Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	**Client Sample ID**	**HxCDD (40-135)**	**HxDD (40-135)**	**13CHxCD (40-135)**	**TCDD (40-135)**
410-60305-1	TWT-EB-102221	41	40	39 *5-	41
LCS 410-187978/2-A	Lab Control Sample	64	65	63	59
MB 410-187978/1-A	Method Blank	38 *5-	38 *5-	37 *5-	38 *5-

Surrogate Legend

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
13CHxCD = 13C-1,2,3,7,8,9-HxCDD
TCDD = 13C-2,3,7,8-TCDD

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-190674/11
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			11/04/21 12:16	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/L			11/04/21 12:16	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
1,4-Dioxane	ND		250	29	ug/L			11/04/21 12:16	1
2-Butanone	ND		10	0.50	ug/L			11/04/21 12:16	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			11/04/21 12:16	1
Acetone	ND		20	0.70	ug/L			11/04/21 12:16	1
Acrylonitrile	ND		20	0.30	ug/L			11/04/21 12:16	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Bromoform	ND		4.0	1.0	ug/L			11/04/21 12:16	1
Bromomethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Carbon disulfide	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chlorobenzene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chloroethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Chloroform	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Chloromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Dibromomethane	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Dichlorodifluoromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Ethyl acetate	ND		5.0	0.70	ug/L			11/04/21 12:16	1
Ethyl ether	ND		5.0	0.20	ug/L			11/04/21 12:16	1
Ethyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 12:16	1
Freon 113	ND		10	0.30	ug/L			11/04/21 12:16	1
Methacrylonitrile	ND		50	6.0	ug/L			11/04/21 12:16	1
Methyl iodide	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Methyl methacrylate	ND		5.0	0.30	ug/L			11/04/21 12:16	1
Methylene Chloride	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Pentachloroethane	ND		5.0	0.20	ug/L			11/04/21 12:16	1
Tetrachloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Toluene	ND		1.0	0.20	ug/L			11/04/21 12:16	1
trans-1,2-Dichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Trichloroethene	ND		1.0	0.30	ug/L			11/04/21 12:16	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Vinyl chloride	ND		1.0	0.20	ug/L			11/04/21 12:16	1
Xylenes, Total	ND		1.0	0.40	ug/L			11/04/21 12:16	1
Tetrahydrofuran	ND		10	0.70	ug/L			11/04/21 12:16	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-190674/11
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		11/04/21 12:16	1
4-Bromofluorobenzene (Surr)	100		80 - 120		11/04/21 12:16	1
Dibromofluoromethane (Surr)	108		80 - 120		11/04/21 12:16	1
Toluene-d8 (Surr)	102		80 - 120		11/04/21 12:16	1

Lab Sample ID: LCS 410-190674/5
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	20.0	19.0		ug/L		95	78 - 120
1,1,1-Trichloroethane	20.0	19.8		ug/L		99	67 - 126
1,1,2,2-Tetrachloroethane	20.0	19.8		ug/L		99	72 - 120
1,1,2-Trichloroethane	20.0	19.9		ug/L		99	80 - 120
1,1-Dichloroethane	20.0	18.7		ug/L		93	80 - 120
1,1-Dichloroethene	20.0	19.2		ug/L		96	80 - 131
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	18.4		ug/L		92	47 - 131
1,2-Dibromoethane	20.0	19.7		ug/L		98	77 - 120
1,2-Dichloroethane	20.0	20.5		ug/L		103	73 - 124
1,2-Dichloropropane	20.0	19.3		ug/L		97	80 - 120
1,4-Dioxane	500	523		ug/L		105	63 - 146
2-Butanone	250	262		ug/L		105	59 - 135
4-Methyl-2-pentanone	250	263		ug/L		105	62 - 133
Acetone	250	240		ug/L		96	54 - 157
Acrylonitrile	100	104		ug/L		104	60 - 129
Benzene	20.0	19.1		ug/L		95	80 - 120
Bromoform	20.0	19.4		ug/L		97	51 - 120
Bromomethane	20.0	17.5		ug/L		87	53 - 128
Carbon disulfide	20.0	18.0		ug/L		90	65 - 128
Carbon tetrachloride	20.0	19.5		ug/L		98	64 - 134
Chlorobenzene	20.0	19.0		ug/L		95	80 - 120
Chloroethane	20.0	18.2		ug/L		91	55 - 123
Chloroform	20.0	20.0		ug/L		100	80 - 120
Chloromethane	20.0	17.9		ug/L		90	56 - 121
cis-1,3-Dichloropropene	20.0	19.1		ug/L		95	75 - 120
Dibromomethane	20.0	20.5		ug/L		102	80 - 120
Dichlorodifluoromethane	20.0	20.3		ug/L		101	41 - 127
Ethyl ether	20.0	20.0		ug/L		100	59 - 141
Ethyl methacrylate	20.0	18.7		ug/L		93	59 - 141
Ethylbenzene	20.0	18.7		ug/L		93	80 - 120
Freon 113	20.0	18.0		ug/L		90	73 - 139
Methacrylonitrile	150	153		ug/L		102	73 - 124
Methyl iodide	20.0	19.0		ug/L		95	73 - 125
Methyl methacrylate	20.0	19.5		ug/L		97	61 - 121
Methylene Chloride	20.0	19.4		ug/L		97	80 - 120
Tetrachloroethene	20.0	19.1		ug/L		96	80 - 120
Toluene	20.0	18.5		ug/L		93	80 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-190674/5
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	80 - 126
trans-1,3-Dichloropropene	20.0	19.1		ug/L		96	67 - 120
Trichloroethene	20.0	19.1		ug/L		95	80 - 120
Trichlorofluoromethane	20.0	18.3		ug/L		92	55 - 135
Vinyl chloride	20.0	16.9		ug/L		85	56 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
Tetrahydrofuran	100	96.0		ug/L		96	54 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*108*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-190674/7
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl acetate	20.0	19.6		ug/L		98	67 - 131
Pentachloroethane	20.0	17.2		ug/L		86	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-190674/6
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	20.0	19.5		ug/L		97	78 - 120	2	30
1,1,1-Trichloroethane	20.0	19.5		ug/L		98	67 - 126	2	30
1,1,2,2-Tetrachloroethane	20.0	19.6		ug/L		98	72 - 120	1	30
1,1,2-Trichloroethane	20.0	19.8		ug/L		99	80 - 120	0	30
1,1-Dichloroethane	20.0	18.8		ug/L		94	80 - 120	1	30
1,1-Dichloroethene	20.0	19.0		ug/L		95	80 - 131	1	30
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	63 - 120	0	30
1,2-Dibromo-3-Chloropropane	20.0	18.8		ug/L		94	47 - 131	2	30
1,2-Dibromoethane	20.0	19.5		ug/L		98	77 - 120	1	30
1,2-Dichloroethane	20.0	20.4		ug/L		102	73 - 124	1	30
1,2-Dichloropropane	20.0	19.1		ug/L		95	80 - 120	1	30
1,4-Dioxane	500	524		ug/L		105	63 - 146	0	30
2-Butanone	250	256		ug/L		102	59 - 135	3	30
4-Methyl-2-pentanone	250	257		ug/L		103	62 - 133	2	30
Acetone	250	253		ug/L		101	54 - 157	5	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-190674/6
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile			100	102		ug/L		102	60 - 129	2	30
Benzene			20.0	19.1		ug/L		96	80 - 120	0	30
Bromoform			20.0	19.3		ug/L		97	51 - 120	0	30
Bromomethane			20.0	17.4		ug/L		87	53 - 128	1	30
Carbon disulfide			20.0	17.9		ug/L		90	65 - 128	1	30
Carbon tetrachloride			20.0	19.8		ug/L		99	64 - 134	1	30
Chlorobenzene			20.0	19.0		ug/L		95	80 - 120	0	30
Chloroethane			20.0	18.3		ug/L		91	55 - 123	0	30
Chloroform			20.0	20.0		ug/L		100	80 - 120	0	30
Chloromethane			20.0	18.3		ug/L		92	56 - 121	2	30
cis-1,3-Dichloropropene			20.0	18.8		ug/L		94	75 - 120	1	30
Dibromomethane			20.0	19.8		ug/L		99	80 - 120	3	30
Dichlorodifluoromethane			20.0	19.8		ug/L		99	41 - 127	2	30
Ethyl ether			20.0	19.7		ug/L		98	59 - 141	2	30
Ethyl methacrylate			20.0	18.5		ug/L		92	59 - 141	1	30
Ethylbenzene			20.0	18.9		ug/L		95	80 - 120	1	30
Freon 113			20.0	18.3		ug/L		91	73 - 139	1	30
Methacrylonitrile			150	151		ug/L		100	73 - 124	1	30
Methyl iodide			20.0	19.2		ug/L		96	73 - 125	1	30
Methyl methacrylate			20.0	18.7		ug/L		94	61 - 121	4	30
Methylene Chloride			20.0	19.6		ug/L		98	80 - 120	1	30
Tetrachloroethene			20.0	18.8		ug/L		94	80 - 120	2	30
Toluene			20.0	18.7		ug/L		93	80 - 120	1	30
trans-1,2-Dichloroethene			20.0	19.2		ug/L		96	80 - 126	0	30
trans-1,3-Dichloropropene			20.0	19.4		ug/L		97	67 - 120	1	30
Trichloroethene			20.0	18.8		ug/L		94	80 - 120	1	30
Trichlorofluoromethane			20.0	18.6		ug/L		93	55 - 135	2	30
Vinyl chloride			20.0	17.2		ug/L		86	56 - 120	2	30
Xylenes, Total			60.0	56.3		ug/L		94	80 - 120	1	30
Tetrahydrofuran			100	95.9		ug/L		96	54 - 144	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-190674/8
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethyl acetate			20.0	19.3		ug/L		97	67 - 131	1	30
Pentachloroethane			20.0	17.2		ug/L		86	70 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-190674/8
Matrix: Water
Analysis Batch: 190674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-187842/1-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
1,2,4-Trichlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
1,2-Dichlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
1,3-Dichlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
1,4-Dichlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
bis(2 chloro-1-methylethyl) ether	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4,5-Trichlorophenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4,6-Trichlorophenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4-Dichlorophenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4-Dimethylphenol	ND		10	3.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4-Dinitrophenol	ND		30	14	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,4-Dinitrotoluene	ND		5.0	1.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,6-Dichlorophenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2,6-Dinitrotoluene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2-Acetylaminofluorene	ND		21	10	ug/L		10/27/21 16:50	10/29/21 09:53	1
2-Chloronaphthalene	ND		1.0	0.40	ug/L		10/27/21 16:50	10/29/21 09:53	1
2-Chlorophenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
2-Methylphenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
3-Methylcholanthrene	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
4,4'-Methylene bis(2-chloroaniline)	ND		100	50	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Bromophenyl-phenylether	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Chloro-3-methylphenol	ND		5.0	1.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Chloroaniline	ND		10	4.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Methylphenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Nitroaniline	ND		3.0	0.90	ug/L		10/27/21 16:50	10/29/21 09:53	1
4-Nitrophenol	ND		30	10	ug/L		10/27/21 16:50	10/29/21 09:53	1
5-Nitro-o-toluidine	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Acetophenone	ND		5.0	1.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Aniline	ND		5.0	1.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Anthracene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		10/27/21 16:50	10/29/21 09:53	1
Butylbenzylphthalate	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Chrysene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Di-n-butyl phthalate	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Dioctyl phthalate	ND		11	5.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Dibenz(a,h)anthracene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Dibenzofuran	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Diethyl phthalate	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-187842/1-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dimethyl phthalate	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Fluoranthene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Hexachlorobenzene	ND		0.50	0.11	ug/L		10/27/21 16:50	10/29/21 09:53	1
Hexachlorobutadiene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Hexachlorocyclopentadiene	ND		11	5.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Hexachloroethane	ND		5.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Hexachloropropylene	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Indeno[1,2,3-cd]pyrene	ND		0.50	0.11	ug/L		10/27/21 16:50	10/29/21 09:53	1
Isosafrole	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Methapyrilene	ND		50	15	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Nitrosodi-n-propylamine	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Nitrosodi-n-butylamine	ND		11	5.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Nitrosodiethylamine	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Nitrosopiperidine	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
N-Nitrosopyrrolidine	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Naphthalene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Nitrobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pentachlorobenzene	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pentachloronitrobenzene	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Phenacetin	ND		5.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pentachlorophenol	ND		5.0	1.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Phenanthrene	ND		0.50	0.11	ug/L		10/27/21 16:50	10/29/21 09:53	1
Phenol	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pronamide	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pyrene	ND		0.50	0.10	ug/L		10/27/21 16:50	10/29/21 09:53	1
Pyridine	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Safrole, Total	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1
Bis(2-chloroethoxy)methane	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Bis(2-chloroethyl)ether	ND		2.0	0.50	ug/L		10/27/21 16:50	10/29/21 09:53	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.0	ug/L		10/27/21 16:50	10/29/21 09:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*89*		*10 - 150*	*10/27/21 16:50*	*10/29/21 09:53*	*1*
2-Fluorobiphenyl (Surr)	*71*		*35 - 100*	*10/27/21 16:50*	*10/29/21 09:53*	*1*
2-Fluorophenol (Surr)	*47*		*10 - 78*	*10/27/21 16:50*	*10/29/21 09:53*	*1*
Nitrobenzene-d5 (Surr)	*77*		*22 - 117*	*10/27/21 16:50*	*10/29/21 09:53*	*1*
p-Terphenyl-d14 (Surr)	*86*		*31 - 119*	*10/27/21 16:50*	*10/29/21 09:53*	*1*
Phenol-d5 (Surr)	*34*		*10 - 67*	*10/27/21 16:50*	*10/29/21 09:53*	*1*

Lab Sample ID: LCS 410-187842/2-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4,5-Tetrachlorobenzene	50.0	35.6		ug/L		71	39 - 120
1,2,4-Trichlorobenzene	50.0	32.2		ug/L		64	40 - 120
1,2-Dichlorobenzene	50.0	31.1		ug/L		62	35 - 120
1,3-Dichlorobenzene	50.0	29.2		ug/L		58	28 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-187842/2-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	29.1		ug/L		58	29 - 120
bis(2 chloro-1-methylethyl) ether	50.0	34.7		ug/L		69	48 - 120
2,4,5-Trichlorophenol	50.0	45.8		ug/L		92	66 - 120
2,4,6-Trichlorophenol	50.0	46.3		ug/L		93	63 - 120
2,4-Dichlorophenol	50.0	46.3		ug/L		93	64 - 120
2,4-Dimethylphenol	50.0	46.0		ug/L		92	64 - 107
2,4-Dinitrophenol	100	84.1		ug/L		84	33 - 132
2,4-Dinitrotoluene	50.0	47.4		ug/L		95	71 - 120
2,6-Dichlorophenol	50.0	45.3		ug/L		91	71 - 120
2,6-Dinitrotoluene	50.0	49.7		ug/L		99	72 - 120
2-Chloronaphthalene	50.0	37.2		ug/L		74	51 - 120
2-Chlorophenol	50.0	41.6		ug/L		83	57 - 120
2-Methylphenol	50.0	42.7		ug/L		85	51 - 120
4-Bromophenyl-phenylether	50.0	47.3		ug/L		95	66 - 120
4-Chloro-3-methylphenol	50.0	46.6		ug/L		93	60 - 120
4-Chloroaniline	50.0	36.9		ug/L		74	36 - 120
4-Methylphenol	50.0	41.0		ug/L		82	44 - 120
4-Nitroaniline	50.0	40.6		ug/L		81	60 - 120
4-Nitrophenol	100	43.4		ug/L		43	19 - 120
Acetophenone	50.0	43.1		ug/L		86	62 - 120
Aniline	50.0	32.6		ug/L		65	25 - 120
Anthracene	50.0	45.7		ug/L		91	73 - 120
Benzo[a]anthracene	50.0	47.2		ug/L		94	74 - 120
Benzo[a]pyrene	50.0	42.3		ug/L		85	60 - 116
Butylbenzylphthalate	50.0	36.1		ug/L		72	11 - 125
Chrysene	50.0	46.4		ug/L		93	76 - 120
Di-n-butyl phthalate	50.0	44.4		ug/L		89	53 - 120
N-Dioctyl phthalate	50.0	45.1		ug/L		90	59 - 120
Dibenz(a,h)anthracene	50.0	34.6		ug/L		69	62 - 120
Dibenzofuran	50.0	44.2		ug/L		88	60 - 112
Diethyl phthalate	50.0	43.5		ug/L		87	27 - 120
Dimethyl phthalate	50.0	36.2		ug/L		72	10 - 124
Fluoranthene	50.0	47.6		ug/L		95	74 - 120
Hexachlorobenzene	50.0	44.7		ug/L		89	65 - 120
Hexachlorobutadiene	50.0	29.4		ug/L		59	24 - 120
Hexachlorocyclopentadiene	50.0	9.56	J	ug/L		19	10 - 120
Hexachloroethane	50.0	27.3		ug/L		55	22 - 120
Indeno[1,2,3-cd]pyrene	50.0	34.8		ug/L		70	52 - 121
N-Nitrosodi-n-propylamine	50.0	44.5		ug/L		89	63 - 120
Naphthalene	50.0	39.0		ug/L		78	51 - 102
Nitrobenzene	50.0	42.1		ug/L		84	59 - 120
Pentachlorophenol	100	92.6		ug/L		93	48 - 123
Phenanthrene	50.0	45.0		ug/L		90	72 - 120
Phenol	50.0	23.7		ug/L		47	22 - 120
Pyrene	50.0	44.8		ug/L		90	73 - 120
Pyridine	100	45.7		ug/L		46	23 - 120
Bis(2-chloroethoxy)methane	50.0	46.7		ug/L		93	62 - 120
Bis(2-chloroethyl)ether	50.0	43.2		ug/L		86	62 - 120
Bis(2-ethylhexyl) phthalate	50.0	46.2		ug/L		92	60 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	99		10 - 150
2-Fluorobiphenyl (Surr)	77		35 - 100
2-Fluorophenol (Surr)	54		10 - 78
Nitrobenzene-d5 (Surr)	82		22 - 117
p-Terphenyl-d14 (Surr)	90		31 - 119
Phenol-d5 (Surr)	45		10 - 67

Lab Sample ID: LCS 410-187842/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188586 — **Prep Batch: 187842**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Acetylaminofluorene	50.0	103	*+	ug/L		205	79 - 132
3-Methylcholanthrene	50.0	93.2	*+	ug/L		186	79 - 118
4,4'-Methylene bis(2-chloroaniline)	50.0	77.2	J *+	ug/L		154	36 - 109
5-Nitro-o-toluidine	50.0	75.7	*+	ug/L		151	67 - 109
Hexachloropropylene	50.0	40.8		ug/L		82	10 - 120
Isosafrole	50.0	82.6	*+	ug/L		165	69 - 102
Methapyrilene	100	125	E	ug/L		125	70 - 130
N-Nitrosodi-n-butylamine	50.0	78.7	*+	ug/L		157	64 - 101
N-Nitrosodiethylamine	50.0	87.5	*+	ug/L		175	74 - 120
N-Nitrosopiperidine	50.0	88.8	*+	ug/L		178	77 - 120
N-Nitrosopyrrolidine	50.0	85.7	*+	ug/L		171	75 - 120
Pentachlorobenzene	50.0	78.1	*+	ug/L		156	22 - 120
Pentachloronitrobenzene	50.0	77.6	*+	ug/L		155	64 - 120
Phenacetin	50.0	86.3	*+	ug/L		173	80 - 120
Pronamide	50.0	92.6	*+	ug/L		185	79 - 116
Safrole, Total	50.0	83.6	*+	ug/L		167	62 - 104

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	92		10 - 150
2-Fluorobiphenyl (Surr)	73		35 - 100
2-Fluorophenol (Surr)	49		10 - 78
Nitrobenzene-d5 (Surr)	77		22 - 117
p-Terphenyl-d14 (Surr)	87		31 - 119
Phenol-d5 (Surr)	38		10 - 67

Lab Sample ID: LCSD 410-187842/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188586 — **Prep Batch: 187842**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	50.0	38.4		ug/L		77	39 - 120	7	30
1,2,4-Trichlorobenzene	50.0	34.4		ug/L		69	40 - 120	7	30
1,2-Dichlorobenzene	50.0	34.4		ug/L		69	35 - 120	10	30
1,3-Dichlorobenzene	50.0	32.9		ug/L		66	28 - 120	12	30
1,4-Dichlorobenzene	50.0	32.5		ug/L		65	29 - 120	11	30
bis(2 chloro-1-methylethyl) ether	50.0	34.8		ug/L		70	48 - 120	0	30
2,4,5-Trichlorophenol	50.0	47.2		ug/L		94	66 - 120	3	30
2,4,6-Trichlorophenol	50.0	47.3		ug/L		95	63 - 120	2	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-187842/3-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187842

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dichlorophenol	50.0	45.1		ug/L		90	64 - 120	3	30
2,4-Dimethylphenol	50.0	44.8		ug/L		90	64 - 107	3	30
2,4-Dinitrophenol	100	88.4		ug/L		88	33 - 132	5	30
2,4-Dinitrotoluene	50.0	46.5		ug/L		93	71 - 120	2	30
2,6-Dichlorophenol	50.0	44.5		ug/L		89	71 - 120	2	30
2,6-Dinitrotoluene	50.0	47.9		ug/L		96	72 - 120	4	30
2-Chloronaphthalene	50.0	37.9		ug/L		76	51 - 120	2	30
2-Chlorophenol	50.0	42.5		ug/L		85	57 - 120	2	30
2-Methylphenol	50.0	42.9		ug/L		86	51 - 120	0	30
4-Bromophenyl-phenylether	50.0	45.9		ug/L		92	66 - 120	3	30
4-Chloro-3-methylphenol	50.0	46.4		ug/L		93	60 - 120	1	30
4-Chloroaniline	50.0	33.3		ug/L		67	36 - 120	10	30
4-Methylphenol	50.0	40.2		ug/L		80	44 - 120	2	30
4-Nitroaniline	50.0	38.6		ug/L		77	60 - 120	5	30
4-Nitrophenol	100	46.7		ug/L		47	19 - 120	7	30
Acetophenone	50.0	42.0		ug/L		84	62 - 120	3	30
Aniline	50.0	32.2		ug/L		64	25 - 120	1	30
Anthracene	50.0	44.8		ug/L		90	73 - 120	2	30
Benzo[a]anthracene	50.0	47.9		ug/L		96	74 - 120	1	30
Benzo[a]pyrene	50.0	44.1		ug/L		88	60 - 116	4	30
Butylbenzylphthalate	50.0	28.9		ug/L		58	11 - 125	22	30
Chrysene	50.0	47.0		ug/L		94	76 - 120	1	30
Di-n-butyl phthalate	50.0	40.4		ug/L		81	53 - 120	9	30
N-Dioctyl phthalate	50.0	45.5		ug/L		91	59 - 120	1	30
Dibenz(a,h)anthracene	50.0	35.0		ug/L		70	62 - 120	1	30
Dibenzofuran	50.0	43.6		ug/L		87	60 - 112	1	30
Diethyl phthalate	50.0	36.2		ug/L		72	27 - 120	18	30
Dimethyl phthalate	50.0	24.8	*1	ug/L		50	10 - 124	37	30
Fluoranthene	50.0	46.0		ug/L		92	74 - 120	3	30
Hexachlorobenzene	50.0	44.7		ug/L		89	65 - 120	0	30
Hexachlorobutadiene	50.0	32.0		ug/L		64	24 - 120	8	30
Hexachlorocyclopentadiene	50.0	15.7	*1	ug/L		31	10 - 120	49	30
Hexachloroethane	50.0	29.8		ug/L		60	22 - 120	9	30
Indeno[1,2,3-cd]pyrene	50.0	35.0		ug/L		70	52 - 121	1	30
N-Nitrosodi-n-propylamine	50.0	43.4		ug/L		87	63 - 120	2	30
Naphthalene	50.0	39.7		ug/L		79	51 - 102	2	30
Nitrobenzene	50.0	40.6		ug/L		81	59 - 120	4	30
Pentachlorophenol	100	94.7		ug/L		95	48 - 123	2	30
Phenanthrene	50.0	43.9		ug/L		88	72 - 120	3	30
Phenol	50.0	24.1		ug/L		48	22 - 120	1	30
Pyrene	50.0	44.5		ug/L		89	73 - 120	1	30
Pyridine	100	48.7		ug/L		49	23 - 120	6	30
Bis(2-chloroethoxy)methane	50.0	44.5		ug/L		89	62 - 120	5	30
Bis(2-chloroethyl)ether	50.0	42.6		ug/L		85	62 - 120	2	30
Bis(2-ethylhexyl) phthalate	50.0	47.4		ug/L		95	60 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*100*		*10 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-187842/3-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187842

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*79*		*35 - 100*
2-Fluorophenol (Surr)	*57*		*10 - 78*
Nitrobenzene-d5 (Surr)	*78*		*22 - 117*
p-Terphenyl-d14 (Surr)	*90*		*31 - 119*
Phenol-d5 (Surr)	*46*		*10 - 67*

Lab Sample ID: LCSD 410-187842/5-A
Matrix: Water
Analysis Batch: 188586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187842

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Acetylaminofluorene	50.0	112	*+	ug/L		224	79 - 132	9	30
3-Methylcholanthrene	50.0	97.8	*+	ug/L		196	79 - 118	5	30
4,4'-Methylene bis(2-chloroaniline)	50.0	80.8	J *+	ug/L		162	36 - 109	5	30
5-Nitro-o-toluidine	50.0	77.5	*+	ug/L		155	67 - 109	2	30
Hexachloropropylene	50.0	43.1		ug/L		86	10 - 120	5	30
Isosafrole	50.0	88.5	*+	ug/L		177	69 - 102	7	30
Methapyrilene	100	157	E *+	ug/L		157	70 - 130	22	30
N-Nitrosodi-n-butylamine	50.0	83.4	*+	ug/L		167	64 - 101	6	30
N-Nitrosodiethylamine	50.0	92.6	*+	ug/L		185	74 - 120	6	30
N-Nitrosopiperidine	50.0	94.2	*+	ug/L		188	77 - 120	6	30
N-Nitrosopyrrolidine	50.0	92.8	*+	ug/L		186	75 - 120	8	30
Pentachlorobenzene	50.0	81.0	*+	ug/L		162	22 - 120	4	30
Pentachloronitrobenzene	50.0	82.3	*+	ug/L		165	64 - 120	6	30
Phenacetin	50.0	90.2	*+	ug/L		180	80 - 120	4	30
Pronamide	50.0	97.3	*+	ug/L		195	79 - 116	5	30
Safrole, Total	50.0	88.7	*+	ug/L		177	62 - 104	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*96*		*10 - 150*
2-Fluorobiphenyl (Surr)	*74*		*35 - 100*
2-Fluorophenol (Surr)	*55*		*10 - 78*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*
p-Terphenyl-d14 (Surr)	*90*		*31 - 119*
Phenol-d5 (Surr)	*43*		*10 - 67*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-187843/1-A
Matrix: Water
Analysis Batch: 188536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187843

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.30	0.10	ug/L		10/27/21 16:50	10/29/21 09:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*101*		*10 - 110*	*10/27/21 16:50*	*10/29/21 09:42*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 410-187843/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188536 — **Prep Batch: 187843**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Methylnaphthalene-d10 (Surr)	*93*		*36 - 111*	*10/27/21 16:50*	*10/29/21 09:42*	*1*
Fluoranthene-d10 (Surr)	*113*		*47 - 128*	*10/27/21 16:50*	*10/29/21 09:42*	*1*

Lab Sample ID: LCS 410-187843/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188536 — **Prep Batch: 187843**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.00	0.537		ug/L		54	23 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*99*		*10 - 110*
1-Methylnaphthalene-d10 (Surr)	*83*		*36 - 111*
Fluoranthene-d10 (Surr)	*98*		*47 - 128*

Lab Sample ID: LCSD 410-187843/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188536 — **Prep Batch: 187843**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	1.00	0.511		ug/L		51	23 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*100*		*10 - 110*
1-Methylnaphthalene-d10 (Surr)	*91*		*36 - 111*
Fluoranthene-d10 (Surr)	*102*		*47 - 128*

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 410-186703/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 186713 — **Prep Batch: 186703**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Butanol (1C)	ND		1000	140	ug/L		10/25/21 11:42	10/25/21 14:28	1
Isobutanol (1C)	ND		1000	150	ug/L		10/25/21 11:42	10/25/21 14:28	1
Methanol (2C)	ND		1000	220	ug/L		10/25/21 11:42	10/25/21 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Acetone (1C)	*104*		*58 - 149*	*10/25/21 11:42*	*10/25/21 14:28*	*1*
Acetone (2C)	*95*		*58 - 149*	*10/25/21 11:42*	*10/25/21 14:28*	*1*

Lab Sample ID: LCS 410-186703/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 186713 — **Prep Batch: 186703**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Butanol (1C)	2580	2610		ug/L		101	60 - 153

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Lab Sample ID: LCS 410-186703/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 186713 — **Prep Batch: 186703**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Isobutanol (1C)	2570	2520		ug/L		98	71 - 130
Methanol (2C)	2510	2230		ug/L		89	74 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Acetone (1C)	*96*		*58 - 149*
Acetone (2C)	*92*		*58 - 149*

Lab Sample ID: 410-60305-1 MS — **Client Sample ID: TWT-EB-102221**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 186713 — **Prep Batch: 186703**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Butanol (1C)	ND		2580	2570		ug/L		99	60 - 153
Isobutanol (1C)	ND		2570	2750		ug/L		107	71 - 130
Methanol (2C)	ND		2510	2460		ug/L		98	74 - 134

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Acetone (1C)	*97*		*58 - 149*
Acetone (2C)	*94*		*58 - 149*

Lab Sample ID: 410-60305-1 MSD — **Client Sample ID: TWT-EB-102221**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 186713 — **Prep Batch: 186703**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Butanol (1C)	ND		2580	2550		ug/L		99	60 - 153	1	30
Isobutanol (1C)	ND		2570	2770		ug/L		108	71 - 130	1	30
Methanol (2C)	ND		2510	2520		ug/L		101	74 - 134	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Acetone (1C)	*86*		*58 - 149*
Acetone (2C)	*85*		*58 - 149*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-188507/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188679 — **Prep Batch: 188507**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (1C)	ND		0.030	0.010	ug/L		10/29/21 03:50	10/29/21 12:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*122*		*46 - 136*	*10/29/21 03:50*	*10/29/21 12:52*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*10/29/21 03:50*	*10/29/21 12:52*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-188507/2-A
Matrix: Water
Analysis Batch: 188679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188507

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (1C)			0.128	0.177		ug/L		139	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*124*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*

Lab Sample ID: LCSD 410-188507/3-A
Matrix: Water
Analysis Batch: 188679

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 188507

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (1C)			0.128	0.178		ug/L		139	60 - 140	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 410-187537/1-A
Matrix: Water
Analysis Batch: 188010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC (1C)	ND		0.020	0.0030	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
alpha-Chlordane (1C)	ND		0.020	0.0030	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
beta-BHC (1C)	ND		0.020	0.0034	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
delta-BHC (1C)	ND		0.020	0.0034	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Endosulfan I (1C)	ND		0.020	0.0043	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Endosulfan II (1C)	ND		0.040	0.015	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Endosulfan sulfate (1C)	ND		0.030	0.0058	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Endrin (1C)	ND		0.030	0.0081	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
gamma-BHC (Lindane) (1C)	ND		0.020	0.0020	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
gamma-Chlordane (1C)	ND		0.040	0.0070	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Heptachlor (1C)	ND		0.020	0.0020	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Heptachlor epoxide (1C)	ND		0.020	0.0023	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Methoxychlor (1C)	ND		0.11	0.030	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Total Endosulfans (I + II) (1C)	ND		0.020	0.0043	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Toxaphene (1C)	ND		1.0	0.30	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
4,4'-DDD (1C)	ND		0.030	0.0050	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
4,4'-DDE (1C)	ND		0.030	0.0050	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
4,4'-DDT (1C)	ND		0.030	0.0052	ug/Kg		10/27/21 09:07	10/28/21 06:16	1
Chlordane (n.o.s.) (1C)	ND		0.50	0.16	ug/Kg		10/27/21 09:07	10/28/21 06:16	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 410-187537/1-A
Matrix: Water
Analysis Batch: 188010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187537

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr) (1C)	36		20 - 149	10/27/21 09:07	10/28/21 06:16	1
DCB Decachlorobiphenyl (Surr) (2C)	40		20 - 149	10/27/21 09:07	10/28/21 06:16	1
Tetrachloro-m-xylene (Surr) (1C)	61		20 - 129	10/27/21 09:07	10/28/21 06:16	1
Tetrachloro-m-xylene (Surr) (2C)	58		20 - 129	10/27/21 09:07	10/28/21 06:16	1

Lab Sample ID: LCS 410-187537/2-A
Matrix: Water
Analysis Batch: 188010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC (1C)	0.101	0.0880		ug/Kg		87	47 - 132
alpha-Chlordane (2C)	0.100	0.0882		ug/Kg		88	28 - 136
beta-BHC (1C)	0.100	0.0919		ug/Kg		92	65 - 139
delta-BHC (1C)	0.100	0.0874		ug/Kg		87	56 - 141
Endosulfan I (1C)	0.101	0.0845		ug/Kg		83	40 - 138
Endosulfan II (2C)	0.201	0.175		ug/Kg		87	61 - 138
Endosulfan sulfate (1C)	0.201	0.174		ug/Kg		87	41 - 133
Endrin (2C)	0.200	0.193		ug/Kg		97	63 - 131
gamma-BHC (Lindane) (1C)	0.100	0.0861		ug/Kg		86	61 - 139
gamma-Chlordane (1C)	0.100	0.0806		ug/Kg		81	33 - 141
Heptachlor (2C)	0.101	0.0793		ug/Kg		78	35 - 136
Heptachlor epoxide (1C)	0.100	0.0858		ug/Kg		86	59 - 146
Methoxychlor (2C)	1.01	1.10		ug/Kg		109	66 - 148
Total Endosulfans (I + II) (1C)	0.303	0.259		ug/Kg		85	
4,4'-DDD (2C)	0.201	0.179		ug/Kg		89	42 - 148
4,4'-DDE (1C)	0.201	0.159		ug/Kg		79	20 - 140
4,4'-DDT (2C)	0.201	0.202		ug/Kg		100	40 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr) (1C)	35		20 - 149
DCB Decachlorobiphenyl (Surr) (2C)	36		20 - 149
Tetrachloro-m-xylene (Surr) (1C)	57		20 - 129
Tetrachloro-m-xylene (Surr) (2C)	53		20 - 129

Lab Sample ID: LCSD 410-187537/3-A
Matrix: Water
Analysis Batch: 188010

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 187537

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC (1C)	0.101	0.103		ug/Kg		101	47 - 132	15	30
alpha-Chlordane (1C)	0.100	0.104		ug/Kg		104	28 - 136	22	30
beta-BHC (1C)	0.100	0.105		ug/Kg		105	65 - 139	14	30
delta-BHC (1C)	0.100	0.105		ug/Kg		105	56 - 141	18	30
Endosulfan I (1C)	0.101	0.100		ug/Kg		99	40 - 138	17	30
Endosulfan II (1C)	0.201	0.211		ug/Kg		105	61 - 138	19	30

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 410-187537/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188010 — **Prep Batch: 187537**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endosulfan sulfate (1C)			0.201	0.205		ug/Kg		102	41 - 133	16	30
Endrin (1C)			0.200	0.212		ug/Kg		106	63 - 131	20	30
gamma-BHC (Lindane) (1C)			0.100	0.0984		ug/Kg		98	61 - 139	13	30
gamma-Chlordane (1C)			0.100	0.0944		ug/Kg		94	33 - 141	16	30
Heptachlor (1C)			0.101	0.0928		ug/Kg		92	35 - 136	17	30
Heptachlor epoxide (1C)			0.100	0.102		ug/Kg		102	59 - 146	17	30
Methoxychlor (1C)			1.01	1.04		ug/Kg		103	66 - 148	7	30
Total Endosulfans (I + II) (1C)			0.303	0.311		ug/Kg		103		18	
4,4'-DDD (1C)			0.201	0.210		ug/Kg		105	42 - 148	19	30
4,4'-DDE (1C)			0.201	0.195		ug/Kg		97	20 - 140	20	30
4,4'-DDT (1C)			0.201	0.213		ug/Kg		106	40 - 145	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr) (1C)	*64*		*20 - 149*
DCB Decachlorobiphenyl (Surr) (2C)	*68*		*20 - 149*
Tetrachloro-m-xylene (Surr) (1C)	*64*		*20 - 129*
Tetrachloro-m-xylene (Surr) (2C)	*61*		*20 - 129*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-188438/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188588 — **Prep Batch: 188438**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP) (1C)	ND		0.050	0.010	ug/L		10/28/21 19:19	10/29/21 09:38	1
2,4-D (1C)	ND		0.60	0.25	ug/L		10/28/21 19:19	10/29/21 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*85*		*34 - 142*	*10/28/21 19:19*	*10/29/21 09:38*	*1*
2,4-Dichlorophenylacetic acid (Surr) (2C)	*77*		*34 - 142*	*10/28/21 19:19*	*10/29/21 09:38*	*1*

Lab Sample ID: LCS 410-188438/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188588 — **Prep Batch: 188438**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Silvex (2,4,5-TP) (1C)			0.250	0.276		ug/L		110	62 - 170		
2,4-D (2C)			2.51	2.46		ug/L		98	53 - 159		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid (Surr) (1C)	*93*		*34 - 142*

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-188438/2-A
Matrix: Water
Analysis Batch: 188588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188438

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (2C)	89		34 - 142

Lab Sample ID: LCSD 410-188438/3-A
Matrix: Water
Analysis Batch: 188588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 188438

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silvex (2,4,5-TP) (2C)	0.250	0.287		ug/L		115	62 - 170	4	30
2,4-D (2C)	2.51	2.46		ug/L		98	53 - 159	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr) (1C)	77		34 - 142
2,4-Dichlorophenylacetic acid (Surr) (2C)	78		34 - 142

Method: 531.1 - Carbamate Pesticides (HPLC)

Lab Sample ID: MB 410-187823/1-A
Matrix: Water
Analysis Batch: 188936

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 187823

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbaryl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 04:36	1
Carbofuran	ND		2.0	0.80	ug/L		10/27/21 14:42	10/30/21 04:36	1
Methiocarb	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 04:36	1
Methomyl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 04:36	1
Oxamyl	ND		2.0	1.0	ug/L		10/27/21 14:42	10/30/21 04:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	98		80 - 120	10/27/21 14:42	10/30/21 04:36	1

Lab Sample ID: LCS 410-187823/2-A
Matrix: Water
Analysis Batch: 188936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbaryl	2.01	2.02		ug/L		101	80 - 120
Carbofuran	2.01	2.09		ug/L		104	80 - 120
Methiocarb	2.00	2.03		ug/L		101	80 - 120
Methomyl	2.01	2.13		ug/L		106	80 - 120
Oxamyl	2.01	2.04		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	103		80 - 120

Method: 531.1 - Carbamate Pesticides (HPLC) (Continued)

Lab Sample ID: 410-60305-1 MS — **Client Sample ID: TWT-EB-102221**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188936 — **Prep Batch: 187823**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbaryl	ND		2.01	1.88	J	ug/L		94	80 - 120
Carbofuran	ND		2.01	1.94	J	ug/L		96	80 - 120
Methiocarb	ND		2.00	1.69	J	ug/L		84	80 - 120
Methomyl	ND		2.01	1.92	J	ug/L		96	80 - 120
Oxamyl	ND		2.01	1.94	J	ug/L		97	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*106*		*80 - 120*

Lab Sample ID: 410-60305-1 MSD — **Client Sample ID: TWT-EB-102221**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188936 — **Prep Batch: 187823**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbaryl	ND		2.01	2.25		ug/L		112	80 - 120	18	30
Carbofuran	ND		2.01	2.24		ug/L		111	80 - 120	15	30
Methiocarb	ND		2.00	2.20		ug/L		110	80 - 120	26	30
Methomyl	ND		2.01	2.32		ug/L		116	80 - 120	19	30
Oxamyl	ND		2.01	2.23		ug/L		111	80 - 120	14	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*104*		*80 - 120*

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-187978/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188204 — **Prep Batch: 187978**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		5.0	0.099	pg/L		10/27/21 15:00	10/28/21 22:10	1
Total HxCDD	6.34	J I	25	0.047	pg/L		10/27/21 15:00	10/28/21 22:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*38*	**5-*	*40 - 135*	*10/27/21 15:00*	*10/28/21 22:10*	*1*
13C-1,2,3,6,7,8-HxCDD	*38*	**5-*	*40 - 135*	*10/27/21 15:00*	*10/28/21 22:10*	*1*
13C-1,2,3,7,8,9-HxCDD	*37*	**5-*	*40 - 135*	*10/27/21 15:00*	*10/28/21 22:10*	*1*
13C-2,3,7,8-TCDD	*38*	**5-*	*40 - 135*	*10/27/21 15:00*	*10/28/21 22:10*	*1*

Lab Sample ID: LCS 410-187978/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188204 — **Prep Batch: 187978**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	192		pg/L		96	51 - 163
1,2,3,7,8,9-HxCDD	0.00100	0.00102		pg/uL		102	56 - 139
1,2,3,6,7,8-HxCDD	0.00100	0.00101		pg/uL		101	57 - 139

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-187978/2-A
Matrix: Water
Analysis Batch: 188204

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 187978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,4,7,8-HxCDD	0.00100	0.00106		pg/uL		106	58 - 139

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-1,2,3,4,7,8-HxCDD	*64*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*65*		*40 - 135*
13C-1,2,3,7,8,9-HxCDD	*63*		*40 - 135*
13C-2,3,7,8-TCDD	*59*		*40 - 135*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-187974/1-A
Matrix: Water
Analysis Batch: 188863

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 187974

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.68	ug/L		10/27/21 21:59	10/29/21 09:44	1
Barium	ND		2.0	0.75	ug/L		10/27/21 21:59	10/29/21 09:44	1
Cadmium	ND		0.50	0.15	ug/L		10/27/21 21:59	10/29/21 09:44	1
Calcium	ND		100	74	ug/L		10/27/21 21:59	10/29/21 09:44	1
Chromium	ND		2.0	0.33	ug/L		10/27/21 21:59	10/29/21 09:44	1
Lead	ND		0.50	0.071	ug/L		10/27/21 21:59	10/29/21 09:44	1
Nickel	ND		1.0	0.60	ug/L		10/27/21 21:59	10/29/21 09:44	1
Selenium	ND		1.0	0.28	ug/L		10/27/21 21:59	10/29/21 09:44	1
Silver	ND		0.50	0.17	ug/L		10/27/21 21:59	10/29/21 09:44	1

Lab Sample ID: LCS 410-187974/2-A
Matrix: Water
Analysis Batch: 188863

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 187974

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	500	432		ug/L		86	85 - 120
Barium	500	477		ug/L		95	80 - 120
Cadmium	50.0	48.4		ug/L		97	86 - 113
Calcium	5000	4650		ug/L		93	85 - 120
Chromium	500	470		ug/L		94	90 - 115
Lead	50.0	49.6		ug/L		99	90 - 115
Nickel	500	448		ug/L		90	90 - 114
Selenium	100	93.9		ug/L		94	80 - 120
Silver	49.9	47.8		ug/L		96	88 - 113

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-188002/1-A
Matrix: Water
Analysis Batch: 188376

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188002

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		10/28/21 05:06	10/28/21 15:23	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 410-188002/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188376 — **Prep Batch: 188002**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	0.928		ug/L		93	80 - 118

Lab Sample ID: LCSD 410-188002/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 188376 — **Prep Batch: 188002**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.00	0.967		ug/L		97	80 - 118	4	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 410-191410/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191513 — **Prep Batch: 191410**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0050	mg/L		11/05/21 14:28	11/05/21 17:22	1

Lab Sample ID: LCS 410-191410/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191513 — **Prep Batch: 191410**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.200	0.217		mg/L		108	90 - 110

QC Association Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

GC/MS VOA

Analysis Batch: 190674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8260C	
MB 410-190674/11	Method Blank	Total/NA	Water	8260C	
LCS 410-190674/5	Lab Control Sample	Total/NA	Water	8260C	
LCS 410-190674/7	Lab Control Sample	Total/NA	Water	8260C	
LCSD 410-190674/6	Lab Control Sample Dup	Total/NA	Water	8260C	
LCSD 410-190674/8	Lab Control Sample Dup	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 187842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	3510C	
MB 410-187842/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-187842/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 410-187842/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-187842/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 410-187842/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 187843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	3510C	
MB 410-187843/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-187843/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-187843/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 188536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8270D SIM	187843
MB 410-187843/1-A	Method Blank	Total/NA	Water	8270D SIM	187843
LCS 410-187843/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	187843
LCSD 410-187843/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	187843

Analysis Batch: 188586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8270D	187842
MB 410-187842/1-A	Method Blank	Total/NA	Water	8270D	187842
LCS 410-187842/2-A	Lab Control Sample	Total/NA	Water	8270D	187842
LCS 410-187842/4-A	Lab Control Sample	Total/NA	Water	8270D	187842
LCSD 410-187842/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	187842
LCSD 410-187842/5-A	Lab Control Sample Dup	Total/NA	Water	8270D	187842

GC VOA

Prep Batch: 186703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8015 DAI	
MB 410-186703/1-A	Method Blank	Total/NA	Water	8015 DAI	
LCS 410-186703/2-A	Lab Control Sample	Total/NA	Water	8015 DAI	
410-60305-1 MS	TWT-EB-102221	Total/NA	Water	8015 DAI	
410-60305-1 MSD	TWT-EB-102221	Total/NA	Water	8015 DAI	

QC Association Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

GC VOA

Analysis Batch: 186713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8015B	186703
MB 410-186703/1-A	Method Blank	Total/NA	Water	8015B	186703
LCS 410-186703/2-A	Lab Control Sample	Total/NA	Water	8015B	186703
410-60305-1 MS	TWT-EB-102221	Total/NA	Water	8015B	186703
410-60305-1 MSD	TWT-EB-102221	Total/NA	Water	8015B	186703

GC Semi VOA

Prep Batch: 187537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	3510C	
MB 410-187537/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-187537/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-187537/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 188010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8081B	187537
MB 410-187537/1-A	Method Blank	Total/NA	Water	8081B	187537
LCS 410-187537/2-A	Lab Control Sample	Total/NA	Water	8081B	187537
LCSD 410-187537/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	187537

Prep Batch: 188438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8151A	
MB 410-188438/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-188438/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-188438/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Prep Batch: 188507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8011	
MB 410-188507/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-188507/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-188507/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 188588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8151A	188438
MB 410-188438/1-A	Method Blank	Total/NA	Water	8151A	188438
LCS 410-188438/2-A	Lab Control Sample	Total/NA	Water	8151A	188438
LCSD 410-188438/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	188438

Analysis Batch: 188679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8011	188507
MB 410-188507/1-A	Method Blank	Total/NA	Water	8011	188507
LCS 410-188507/2-A	Lab Control Sample	Total/NA	Water	8011	188507
LCSD 410-188507/3-A	Lab Control Sample Dup	Total/NA	Water	8011	188507

QC Association Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

HPLC/IC

Prep Batch: 187823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	531	
MB 410-187823/1-A	Method Blank	Total/NA	Water	531	
LCS 410-187823/2-A	Lab Control Sample	Total/NA	Water	531	
410-60305-1 MS	TWT-EB-102221	Total/NA	Water	531	
410-60305-1 MSD	TWT-EB-102221	Total/NA	Water	531	

Analysis Batch: 188936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	531.1	187823
MB 410-187823/1-A	Method Blank	Total/NA	Water	531.1	187823
LCS 410-187823/2-A	Lab Control Sample	Total/NA	Water	531.1	187823
410-60305-1 MS	TWT-EB-102221	Total/NA	Water	531.1	187823
410-60305-1 MSD	TWT-EB-102221	Total/NA	Water	531.1	187823

Specialty Organics

Prep Batch: 187978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8290A	
MB 410-187978/1-A	Method Blank	Total/NA	Water	8290A	
LCS 410-187978/2-A	Lab Control Sample	Total/NA	Water	8290A	

Analysis Batch: 188204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	8290A	187978
MB 410-187978/1-A	Method Blank	Total/NA	Water	8290A	187978
LCS 410-187978/2-A	Lab Control Sample	Total/NA	Water	8290A	187978

Metals

Prep Batch: 187974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total Recoverable	Water	3005A	
MB 410-187974/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-187974/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 188002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	7470A	
MB 410-188002/1-A	Method Blank	Total/NA	Water	7470A	
LCS 410-188002/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 410-188002/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 188376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	7470A	188002
MB 410-188002/1-A	Method Blank	Total/NA	Water	7470A	188002
LCS 410-188002/2-A	Lab Control Sample	Total/NA	Water	7470A	188002
LCSD 410-188002/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	188002

QC Association Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Metals

Analysis Batch: 188863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total Recoverable	Water	6020A	187974
MB 410-187974/1-A	Method Blank	Total Recoverable	Water	6020A	187974
LCS 410-187974/2-A	Lab Control Sample	Total Recoverable	Water	6020A	187974

General Chemistry

Prep Batch: 191410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	9012A	
MB 410-191410/2-A	Method Blank	Total/NA	Water	9012A	
LCS 410-191410/1-A	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 191513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	9012A	191410
MB 410-191410/2-A	Method Blank	Total/NA	Water	9012A	191410
LCS 410-191410/1-A	Lab Control Sample	Total/NA	Water	9012A	191410

Analysis Batch: 191550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60305-1	TWT-EB-102221	Total/NA	Water	9012A	

Lab Chronicle

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Client Sample ID: TWT-EB-102221

Date Collected: 10/22/21 11:45
Date Received: 10/22/21 16:22

Lab Sample ID: 410-60305-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	190674	11/04/21 14:20	TQ4J	ELLE
Total/NA	Prep	3510C			187842	10/27/21 16:50	QQ3P	ELLE
Total/NA	Analysis	8270D		1	188586	10/29/21 13:45	P7EB	ELLE
Total/NA	Prep	3510C			187843	10/27/21 16:50	QQ3P	ELLE
Total/NA	Analysis	8270D SIM		1	188536	10/29/21 18:55	DZ6A	ELLE
Total/NA	Prep	8015 DAI			186703	10/25/21 11:42	LXF2	ELLE
Total/NA	Analysis	8015B		1	186713	10/25/21 15:07	LXF2	ELLE
Total/NA	Prep	8011			188507	10/29/21 03:50	UKQ8	ELLE
Total/NA	Analysis	8011		1	188679	10/29/21 15:39	JC94	ELLE
Total/NA	Prep	3510C			187537	10/27/21 09:07	BLX5	ELLE
Total/NA	Analysis	8081B		1	188010	10/28/21 06:53	UAMZ	ELLE
Total/NA	Prep	8151A			188438	10/28/21 19:19	UKL2	ELLE
Total/NA	Analysis	8151A		1	188588	10/29/21 11:25	UAMZ	ELLE
Total/NA	Prep	531			187823	10/27/21 14:42	GM5C	ELLE
Total/NA	Analysis	531.1		1	188936	10/30/21 08:47	GM5C	ELLE
Total/NA	Prep	8290A			187978	10/27/21 15:00	CPV9	ELLE
Total/NA	Analysis	8290A		1	188204	10/29/21 04:41	UMA9	ELLE
Total Recoverable	Prep	3005A			187974	10/27/21 21:59	UAMX	ELLE
Total Recoverable	Analysis	6020A		1	188863	10/29/21 12:36	S4PD	ELLE
Total/NA	Prep	7470A			188002	10/28/21 05:06	UAMX	ELLE
Total/NA	Analysis	7470A		1	188376	10/28/21 15:36	UEFS	ELLE
Total/NA	Prep	9012A			191410	11/05/21 14:28	UJE2	ELLE
Total/NA	Analysis	9012A		1	191513	11/05/21 17:34	JCG7	ELLE
Total/NA	Analysis	9012A		1	191550	11/05/21 20:34	N3PD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
531.1	531	Water	Carbaryl
531.1	531	Water	Carbofuran
531.1	531	Water	Oxamyl
8081B	3510C	Water	Total Endosulfans (I + II) (1C)
9012A		Water	Cyanide, Amenable

Method Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
8015B	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8081B	Organochlorine Pesticides (GC)	SW846	ELLE
8151A	Herbicides (GC)	SW846	ELLE
531.1	Carbamate Pesticides (HPLC)	EPA	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
9012A	Cyanide, Amenable	SW846	ELLE
9012A	Cyanide, Total and/or Amenable	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
531	Carbamates Pesticides (HPLC)	EPA	ELLE
7470A	Preparation, Mercury	SW846	ELLE
8011	Microextraction	SW846	ELLE
8015 DAI	Prepartion, Direct Aqueous Injection	SW846	ELLE
8151A	Extraction (Herbicides)	SW846	ELLE
8290A	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	ELLE
9012A	Cyanide, Total and/or Amenable, Distillation	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: AECOM
Project/Site: Experimental Station

Job ID: 410-60305-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-60305-1	TWT-EB-102221	Water	10/22/21 11:45	10/22/21 16:22

.LC

Chain of Custody Record

eurofins Environment Testing America

410-60305 Chain of Custody

Sampler: Philip Chen	Lab PM: Badman, Vanessa	Carrier Tracking No(s):	COC No: 410-36350-11369.1
Client Contact: Ms. Sharon Nordstrom	Phone: 302 563 0917	E-Mail: vanessa.badman@eurofinset.com	State of Origin: DE	Page: Page 1 of 1
Company: AECOM	PWSID:		Job #:
Address: ADOM 4051 Ogletown Road Suite 300	Due Date Requested:		
City: Newark	TAT Requested (days):		
State, Zip: DE, 19713	Compliance Project: Δ Yes Δ No		
Phone: 302-781-5936(Tel)	PO #: 128221		
Email: sharon.nordstrom@aecom.com	WO #:		
Project Name: Experimental Station	Project #: 41003343		
Site: EXP	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A, 7471A, 8015B_DAI, 8081B, 8151A, 8270D, 8270D_SIM, 8290A, 8318, 9012A, 9012A_Calc,	8260C - EXP Station Table 2 VOCs (High)	8011 - Ethylene Dibromide 8011	8260C - Furan 8260C (Sub to ETA Savannah)	531.1 - (MOD) Carbamates	8081B, 8270D, 8270D_SIM	6020A, 7470A	8260C - EXP Station Table 2 VOCs 8260C	8011 - Ethylene Dibromide	8290A, 8151A	8015B_DAI - (MOD) 8015B	9012A, 9012A_Calc	8260C - Furan 8260C (Sub to ETA Savannah)	Total Number of containers	The 8260C Furans were subcontracted from the field by the client.
			Preservation Code:				N	N	N	N	VR	N	D	A	A	N	N	HB	A		
TWT-LOC-1	10/22/21	945	G	Solid			X	X	X	X											
TWT-LOC-2		915	G	Solid			X	X	X	X											
TWT-LOC-3		900	G	Solid			X	X	X	X											
TWT-LOC-4		930	G	Solid			X	X	X	X											
TWT-LOC-5		1000	G	Solid			X	X	X	X											
~~TWT-LOC-6~~		1030	G	Solid			X	X	X	X	?										
TWT-EB-102221		1145	G	Water							X	X	X	X	X	X	X	X	X		In its own Cooler
~~TWT-TB-102221~~			G	Water							X	X	X	X	X	X	X	X	X		
~~TWT-LOC-5-D~~	~~10/22/21~~	~~1000~~	~~G~~	~~Solid~~			~~X~~	~~X~~	~~X~~	~~X~~											

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/22/2021 1200 Noon	AECOM			
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by: [signature]	Date/Time 10/22/21 1622	Company ERE

Custody Seals Intact: | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.7

Login Sample Receipt Checklist

Client: AECOM

Job Number: 410-60305-1

Login Number: 60305
List Number: 1
Creator: Phillips, Ann-Marie E

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

Appendix G

RAIS Supporting Tables

Table G-1
Site-Specific Risk
Outdoor Worker Soil Inputs

Variable	Outdoor Worker Soil Default Value	Form-input Value
A (PEF Dispersion Constant)	16.2302	16.2302
A (VF Dispersion Constant)	11.911	11.911
A (VF Dispersion Constant - mass limit)	11.911	11.911
B (PEF Dispersion Constant)	18.7762	18.7762
B (VF Dispersion Constant)	18.4385	18.4385
B (VF Dispersion Constant - mass limit)	18.4385	18.4385
City (PEF Climate Zone) Selection	Default	Default
City (VF Climate Zone) Selection	Default	Default
C (PEF Dispersion Constant)	216.108	216.108
C (VF Dispersion Constant)	209.7845	209.7845
C (VF Dispersion Constant - mass limit)	209.7845	209.7845
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.194
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
PEF (particulate emission factor) m^3/kg	1359344438	1359344438
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	93.77
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	68.18
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	68.18
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AF_{ow} (skin adherence factor - outdoor worker) mg/cm^2	0.12	0.12
AT_{ow} (averaging time - outdoor worker)	365	365
BW_{ow} (body weight - outdoor worker)	80	80
ED_{ow} (exposure duration - outdoor worker) y	25	25
EF_{ow} (exposure frequency - outdoor worker) day/y	225	50
ET_{ow} (exposure time - outdoor worker) hr	8	8
IRS_{ow} (soil ingestion rate - outdoor worker) mg/day	100	100
LT (lifetime) yr	70	70
SA_{ow} (surface area - outdoor worker) cm^2/day	3527	3527
T_w (groundwater temperature) Celsius	25	25
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

Table G-2
Site-Specific Risk
Outdoor Worker for Soil

Chemical	CAS Number	Mutagen?	VOC?	Chronic RfD (mg/kg-day)	RfD Ref	Chronic RfC (mg/m^3)	RfC Ref	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	ABS_{gi}	ABS_{derm}	Volatilization Factor (m^3/kg)
Arsenic, Inorganic	7440-38-2	No	No	3.00E-04	U	1.50E-05	U	1.50E+00	U	4.30E-03	U	1.00E+00	3.00E-02	-
**Total Risk/HI*				-		-		-		-		-	-	-

Chemical	CAS Number	DA	Particulate Emission Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	H` and HLC Ref	Henry's Law Constant Used in Calcs (unitless)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C (K)	T_C Ref	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)
Arsenic, Inorganic	7440-38-2	-	1.36E+09	-	-	-		-	8.88E+02	U	1.67E+03	U	-	-
**Total Risk/HI*		-	-	-	-	-		-	-		-		-	-

Table G-2
Site-Specific Risk
Outdoor Worker for Soil

Chemical	CAS Number	Soil Concentration (mg/kg)	Ingestion Noncarcinogenic CDI (mg/kg-day)	Dermal Noncarcinogenic CDI (mg/kg-day)	Inhalation Noncarcinogenic CDI (mg/m^3)	Ingestion Carcinogenic CDI (mg/kg-day)	Dermal Carcinogenic CDI (mg/kg-day)	Inhalation Carcinogenic CDI (ug/m^3)
Arsenic, Inorganic	7440-38-2	5.97E+01	6.14E-06	1.30E-06	2.01E-09	2.19E-06	4.64E-07	7.17E-07
**Total Risk/HI*		-	-	-	-	-	-	-

Chemical	CAS Number	Ingestion HQ	Dermal HQ	Inhalation HQ	Total HI	Ingestion Risk	Dermal Risk	Inhalation Risk	Total Risk
Arsenic, Inorganic	7440-38-2	2.05E-02	4.33E-03	1.34E-04	2.49E-02	3.29E-06	6.96E-07	3.08E-09	3.99E-06
**Total Risk/HI*		*2.05E-02*	*4.33E-03*	*1.34E-04*	*2E-02*	*3.29E-06*	*6.96E-07*	*3.08E-09*	*3.99E-06*

Table G-3
Site-Specific Risk
Excavation Worker Soil Inputs

Variable	Excavation Worker Soil Default Value	Form-input Value
A (PEF Dispersion Constant)	16.2302	16.2302
A (VF Dispersion Constant)	11.911	11.911
A (VF Dispersion Constant - mass limit)	11.911	11.911
B (PEF Dispersion Constant)	18.7762	18.7762
B (VF Dispersion Constant)	18.4385	18.4385
B (VF Dispersion Constant - mass limit)	18.4385	18.4385
City (PEF Climate Zone) Selection	Default	Default
City (VF Climate Zone) Selection	Default	Default
C (PEF Dispersion Constant)	216.108	216.108
C (VF Dispersion Constant)	209.7845	209.7845
C (VF Dispersion Constant - mass limit)	209.7845	209.7845
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.194
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
PEF (particulate emission factor) m^3/kg	1359344438	1359344438
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	93.77
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	68.18
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	68.18
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AF_{ew} (skin adherence factor - excavation worker) mg/cm^2	0.3	0.3
AT_{ew} (averaging time - excavation worker)	365	365
BW_{ew} (body weight - excavation worker) kg	80	80
ED_{ew} (exposure duration - excavation worker) yr	1	1
EF_{ew} (exposure frequency - excavation worker) day/yr	20	20
ET_{ew} (exposure time - excavation worker) hr	8	8
IR_{ew} (soil ingestion rate - excavation worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{ew} (surface area - excavation worker) cm^2/day	3527	3527
T_w (groundwater temperature) Celsius	25	25
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

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Table G-4
Site-Specific Risk
Excavation Worker for Soil

Chemical	CAS Number	Mutagen?	VOC?	Subchronic RfD (mg/kg-day)	SRfD Ref	Subchronic RfC (mg/m^3)	SRfC Ref	$SF_o(mg/kg\text{-}day)^{-1}$	SF_oRef	IUR $(ug/m^3)^{-1}$	IUR Ref
Arsenic, Inorganic	7440-38-2	No	No	5.00E-03	PPRTV Archive	-		1.50E+00	IRIS	4.30E-03	IRIS
*Total Risk/HI				-		-		-		-	

Chemical	CAS Number	ABS_{gi}	ABS_{derm}	Volatilization Factor (m^3/kg)	DA	Particulate Emission Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	H` and HLC Ref
Arsenic, Inorganic	7440-38-2	1.00E+00	3.00E-02	-	-	1.36E+09	-	-	-	
*Total Risk/HI		-	-	-	-	-	-	-	-	

Chemical	CAS Number	Henry's Law Constant Used in Calcs (unitless)	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_C (K)	T_C Ref	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)
Arsenic, Inorganic	7440-38-2	-	8.88E+02	PHYSPROP	1.67E+03	CRC	-	-
*Total Risk/HI		-	-		-		-	-

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Table G-4
Site-Specific Risk
Excavation Worker for Soil

Chemical	CAS Number	Soil Concentration (mg/kg)	Ingestion Noncarcinogenic CDI (mg/kg-day)	Dermal Noncarcinogenic CDI (mg/kg-day)	Inhalation Noncarcinogenic CDI (mg/m^3)	Ingestion Carcinogenic CDI (mg/kg-day)	Dermal Carcinogenic CDI (mg/kg-day)	Inhalation Carcinogenic CDI (ug/m^3)
Arsenic, Inorganic	7440-38-2	5.97E+01	8.10E-06	1.30E-06	8.03E-10	1.16E-07	1.86E-08	1.15E-08
**Total Risk/HI*		-	-	-	-	-	-	-

Chemical	CAS Number	Ingestion HQ	Dermal HQ	Inhalation HQ	Total HI	Ingestion Risk	Dermal Risk	Inhalation Risk	Total Risk
Arsenic, Inorganic	7440-38-2	1.62E-03	2.60E-04	5.35E-05	1.93E-03	1.74E-07	2.78E-08	4.93E-11	2.01E-07
**Total Risk/HI*		*1.62E-03*	*2.60E-04*	*5.35E-05*	*1.93E-03*	*1.74E-07*	*2.78E-08*	*4.93E-11*	*2.01E-07*

Table G-5
ProUCL (Version 5.1) Outpt for Soil in mg/kg

UCL Statistics for Uncensored Full Data Sets			
User Selected Options			
Date/Time of Computation	ProUCL 5.111/22/2021 10:46:12 AM		
From File	ProUCL_Input_Soil_TWT_mgkg.xls		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Arsenic

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3	Mean	36.06
Maximum	82	Median	40
SD	28.77	Std. Error of Mean	11.75
Coefficient of Variation	0.798	Skewness	0.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test		
Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.73	95% Adjusted-CLT UCL (Chen-1995)	57.83
		95% Modified-t UCL (Johnson-1978)	60.11

Gamma GOF Test		
A-D Test Statistic	0.452	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.712	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.299	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.34	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	1.19	k star (bias corrected MLE)	0.706
Theta hat (MLE)	30.3	Theta star (bias corrected MLE)	51.07
nu hat (MLE)	14.28	nu star (bias corrected)	8.473

Table G-5
ProUCL (Version 5.1) Outpt for Soil in mg/kg

MLE Mean (bias corrected)	36.06	MLE Sd (bias corrected)	42.91
		Approximate Chi Square Value (0.05)	3.012
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	1.966
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	101.4	95% Adjusted Gamma UCL (use when n<50)	155.4
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.32	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.099	Mean of logged Data	3.109
Maximum of Logged Data	4.407	SD of logged Data	1.273
Assuming Lognormal Distribution			
95% H-UCL	902.8	90% Chebyshev (MVUE) UCL	104.3
95% Chebyshev (MVUE) UCL	132.7	97.5% Chebyshev (MVUE) UCL	172
99% Chebyshev (MVUE) UCL	249.3		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	55.38	95% Jackknife UCL	59.73
95% Standard Bootstrap UCL	53.83	95% Bootstrap-t UCL	62.26
95% Hall's Bootstrap UCL	59.1	95% Percentile Bootstrap UCL	55
95% BCA Bootstrap UCL	55.17		
90% Chebyshev(Mean, Sd) UCL	71.3	95% Chebyshev(Mean, Sd) UCL	87.26
97.5% Chebyshev(Mean, Sd) UCL	109.4	99% Chebyshev(Mean, Sd) UCL	152.9
Suggested UCL to Use			
95% Student's-t UCL	59.73		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			