Town of Westerly, Rhode Island

Site Investigation Report

Former Potter Hill Mill
198 Potter Hill Road
Westerly, Rhode Island 02891
Grant No. 4B-00A00985

May 30, 2025

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1 Introduction

Groundwater & Environmental Services, Inc. (GES) has prepared this *Site Investigation Report* (SIR) for the Former Potter Hill Mill property located at 198 Potter Hill Road in Westerly, RI (the "site") for the Town of Westerly, on behalf of Rhode Island Department of Environmental Management through the Targeted Brownfield Assessment program. This SIR was prepared to address the July 2024 *Phase I Environmental Site Assessment Report* prepared by GES, which documented the presence of Recognized Environmental Conditions (RECs) at the site. The SIR is being submitted concurrently with a Hazardous Material Release Notification Form (RNF) associated with the December 2024 subsurface investigation, per RIDEM guidance. The SIR Checklist is provided in **Appendix A**, and the RNF is included in **Appendix B**.

On October 30, 2024, a *Site-Specific Quality Assurance Project Plan Addendum* (QAPPA) was completed by Nobis Engineering, Inc. (Nobis) on behalf of GES and submitted to RIDEM. The QAPPA detailed site conditions and the subsurface investigation activities that would be completed as part of the SIR. The QAPPA also outlined the plan for sample collection, quality control procedures, and laboratory analytical requirements.

This SIR was prepared to document the activities completed to evaluate the nature and extent of potential soil and groundwater impacts at the site. Analytical parameters included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, and total petroleum hydrocarbon (TPH) diesel-range organics (DRO) and/or gasoline-range organics (GRO). SIR activities included the following:

- Advancement of 16 soil borings (SB-1 through SB-8, and MW-101 through MW-108)
- Installation of eight groundwater monitoring wells (MW-101 through MW-108)
- Monitoring well development, professional survey, gauging, purging, and sampling

A copy of the October 30, 2024 QAPPA is included as **Appendix C**.

2 Environmental Setting

2.1 Site Description

The site consists of a loosely rectangular-shaped parcel of land located at 198 Potter Hill Road in Westerly, Rhode Island, approximately 170 feet west of the intersection of Potter Hill Road and River Road. The parcel of land is identified by the Town of Westerly as Map 8, Block 23, is zoned RR-60 for rural residential use, and totals approximately 4.55 acres in size.

The site is a vacant former mill facility, developed for commercial/industrial use since at least the mid-1700s, that was historically utilized as the Potter Hill Mill between the mid-1800s and the early 1960s.

The site no longer appears to be connected to any active utilities. Available utilities in the area include public water, electricity, telephone, and natural gas services observed in the right-of-way

of Potter Hill Road. Based on available records, the site formerly utilized a private well and water storage tower for the fire suppression system. The water tower is no longer present at the site; however, the former private well is likely present in the western area of the site in overgrown vegetation.

The Pawcatuck River abuts the site to the north and east. A dam across the Pawcatuck River located to the east of the site channels river water under the site via a network of channels (raceway). No other surface water bodies were observed in the immediate vicinity of the site.

A Site Location Map derived from the U.S. Geological Survey (USGS) *7.5 Minute Series Topographical Quadrangle, 2021, Ashaway, Rhode Island* is provided as **Figure 1**. A Site Map depicting current site features is included as **Figure 2**.

2.2 Physical Setting

2.2.1 Topography

The site is located at approximately 41°24′53.50″ North, 71°47′49.76” West, and is approximately 70 feet above mean sea level. The topography at the site and local area is generally flat as illustrated on **Figure 1**. Regional topography generally slopes to the northeast towards the Pawcatuck River.

According to the Federal Emergency Management Agency (FEMA) *National Flood Hazard Layer FIRMette*, the site is located in an area of special flood hazard. The area directly bordering the Pawcatuck River, abutting the north and east of the site, is a Regulatory Floodway and is reported as Flood Zone AE. The southwestern section of the site is within a Without Base Flood Elevation area, and is reported as Zone BA.

2.2.2 Groundwater

According to the RIDEM *Summary of Rhode Island Groundwater Classification and Groundwater Standards* (RIDEM Office of Water Resources), the site is located in an area classified by RIDEM as “GAA.” Groundwater classified as GAA is groundwater that is presumed suitable for human consumption without treatment, and is located in an area defined by RIDEM as a major stratified drift aquifers capable of serving as a significant source for a public water supply, a wellhead protection area for public water system community water supply wells, or a groundwater-dependent area physically isolated from reasonable alternative water supplies.

According to the online *RIDEM Environmental Resource Map,* the site is located in an area classified by the United States Environmental Protection Agency as the Pawcatuck sole source aquifer. Sole source aquifers are defined as the sole or principal source of drinking water for the area above the aquifer and including those lands where the population served by the aquifer live; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should the aquifer become polluted.

2.2.3 Surface Water

A dam is present across the Pawcatuck River, located to the east of the site, which channels river water onto the site via a raceway. No other surface water bodies were observed on the site. The Pawcatuck River, which abuts the site to the north and east, eventually discharges into the Long Island Sound approximately seven miles to the southwest.

According to the online *RIDEM Environmental Resource Map*, the surface water quality of the Pawcatuck River is classified as "B". Class B waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation and irrigation and other agricultural uses. These waters shall have good aesthetic values. The Pawcatuck River is currently listed on the 303(d) list for impaired waters (Category 5). The Clean Water Act section 303(d) defines impaired waters as water bodies that require a total maximum daily load (TMDL) to address water quality. The Pawcatuck River is currently impaired by enterococcus bacteria (e.Coli) as of April 2024.

2.2.4 Geology

According to the *EDR Radius Map Report with GeoCheck* (June 21, 2024) the dominant soil complex underlying the site is classified as Rippowam. This series consists of poorly drained loamy soils in areas subject to frequent flooding. Soils encountered during the 2024 subsurface investigation activities consisted primarily of fine- to medium-grained sand at depths less than approximately 10 feet below grade (fbg), and fine- to coarse-grained silty sands in soils between approximately 10 and 18 fbg.

According to the *Bedrock Geologic Map of Rhode Island*, the bedrock stratigraphic unit underlying the site is a portion of the Sterling Igneous Suite Series mapped as "Zsgg," and defined as pale-pink to gray medium-grained granitic gneiss from the Ediacaran Period of the Neoproterozoic Era. Geoprobe refusal (not confirmed to be due to bedrock) was encountered at one location at approximately 18 fbg in the eastern portion of the site, close to the derelict structures.

2.2.5 Hydrogeology

Based upon the groundwater gauging results in December 2024, the depth to groundwater varied by approximately five feet across the site. Groundwater in the southern portion of the site (MW-101) was gauged at approximately 13.02 feet below top-of-casing (ft btoc), and in the northwestern corner of the site (MW-104) was gauged at approximately 8.44 ft btoc. Groundwater was calculated to flow in a northeasterly direction with a hydraulic gradient of approximately 0.006 feet per foot (ft/ft).

2.3 Adjacent Property Land Use

The site is located in a residential area. At the time of this submittal, the abutters to the property are as follows:

- North – The Pawcatuck River, across which is 72 Laurel Street, Hopkinton (Ashaway), Rhode Island (residence)
- South – 196 Potter Hill Road (residence), followed by 159 Potter Hill Road (Westerly Land Trust)
- East – The Pawcatuck River, across which is Laurel Street and Maxon Street in Hopkinton (Ashaway), followed by residential properties
- West – Several residential properties including 194 Potter Hill Road, 15 and 17 Post Office Lane, and undeveloped wooded land at 30 Post Office Lane owned by RIDEM

2.4 Potential Sensitive Receptors

The site is currently a vacant and abandoned mill facility. There are no current human receptors on-site other than trespassers, where applicable. Environmental receptors include typical flora and fauna associated with undeveloped and vegetated/forested land.

Based on available information, the local area consists primarily of residential properties. No schools, hospitals, daycare centers, or long-term healthcare facilities were identified within at least 500 feet of the site.

Based on available records, the site formerly utilized a private well and water storage tower for the fire suppression system. The water tower is no longer present at the site; however, the former private well is likely present in the western area of the site in overgrown vegetation.

According to the Westerly Water Department's *Annual Water Quality Report* (2023), the Town of Westerly's public drinking water supply comes from twelve gravel-packed wells located at seven well fields within the Pawcatuck River Aquifer Region. The wellfields are located on Bradford Road, Old Carriage Road, Pound Road and White Rock Road in the Town of Westerly. Based on correspondence with the Town of Westerly Water Department, public water is available along Potter Hill Road and the main ends at a hydrant to the west of the bridge over the Pawcatuck River. The abutting residence located at 196 Potter Hill Road is connected to public water. The Water Department also confirmed that the water main does not extend up Post Office Lane, and residences including 15, 17 and 23 Post Office Lane utilize private drinking water supply wells.

A wellhead protection area (WHPA) is the portion of an aquifer through which groundwater moves to a well. Community Wells serves year-round residents; at least 15 service connections or at least 25 individuals. Non-Transient Non-community Wels regularly serve at least 25 of the same persons (not residents) over 6 months of the year. Transient Non-Community Wells do not regularly serve the same persons, but does serve at least 25 people at least 60 days of the years.

The site is not located within a WHPA; however, WHPAs are present in the area. According to the online *RIDEM Environmental Resource Map,* the following WHPAs are located within 1 mile of the site:

- Community – Approximately 0.4 miles north of the site
- Non-Community – Approximately 0.03 and 0.4 miles east and south of the site, respectively

3 Site Background

3.1 Historical Use of Site

Based on available information, the site was formerly used as a gristmill and sawmill from approximately 1762 until 1810, a cotton mill and small-scale boat building from 1810 until 1844, and a woolen mill from 1844 until 1955 when activities on-site reportedly ceased. In the years since, the site has become vacant and the buildings have fallen into disrepair. The site is currently owned by the Town of Westerly, who acquired the property from Renewable Resources Inc. in August 2022. Renewable Resources Inc. had owned the property since October 1992.

3.2 Previous Environmental Assessments

On March 14, 2006, Jacques Whitford Company, Inc. (Jacques Whitford) completed a Phase I ESA for the site, identifying several recognized environmental conditions (RECs). A Phase II investigation was recommended pursuant to the findings of the Phase I ESA to assess whether the identified RECs had impacted soil and/or groundwater at the site.

On April 3, 2006, six test pits were completed on the site by Jacques Whitford to collect soil samples for analysis of Priority Pollutant 13 Metals and Polycyclic Aromatic Hydrocarbons (PAHs). Additional surface sampling was conducted between September 5 and November 8, 2007 for further analysis of arsenic, with some samples also analyzed for Resource Conservation and Recovery Act (RCRA) 8 Metals and/or PAHs.

On September 27, 2006, a *Hazardous Material Release Notification Form* (RNF) was submitted to RIDEM by Jacques Whitford on behalf of the property owner, Renewable Resources, Inc. The RNF documented the presence of arsenic and beryllium in soil above applicable RIDEM Direct Exposure Criteria. On October 16, 2006, RIDEM issued a *Letter of Responsibility* and requested the completion of a site investigation in accordance with the *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (the "Remediation Regulations").

On October 23, 2006, two (2) monitoring wells (MW-1 and MW-2) were installed on-site to assess whether the contaminants found in soil samples had impacted groundwater on the site. A *Site Investigation Report* (SIR) was completed and submitted to RIDEM on November 28, 2006. On January 26, 2007, RIDEM notified Renewable Resources, Inc. that the SIR did not meet the requirements of the Remediation Regulations, and directed further investigation.

On October 26, 2007, an *Emergency Response Report* was issued by RIDEM following an anonymous report of materials from the mill falling into the Pawcatuck River. The Westerly Fire Department responded and indicated that no sheen was observed on the river. RIDEM also responded on October 29, 2007, and did not observe a sheen. Correspondence with the property owner revealed that a site investigation was in progress, the mill never utilized oil heat, and the buildings were slated for demolition in the near future. Coal ash remained on-site, and no other hazardous materials were identified at the site during the inspections.

On November 8, 2007, three (3) additional monitoring wells (MW-3 through MW-5) were installed at the site to further evaluate groundwater quality. On March 17, 2008, Jacques Whitford submitted a Revised SIR that further defined the nature and extent of potential contamination at the site to address RIDEM's concerns with the original SIR submitted in November 2006.

4 GES Phase I ESA – July 2024

On July 31, 2024, GES completed a Phase I ESA of the site on behalf of RIDEM. Based on the results of the assessment, several RECs were identified including the following:

- RIDEM Remediation Case SR-38-1074 historically issued to the site
- Observed coal piles and/or suspected buried coal areas
- Discarded demolition and solid waste pile
- Elevator area
- Electrical equipment possibly containing PCBs and/or mercury
- Painted surfaces possibly containing lead-based paint
- Asbestos-containing material (ACM) in the building materials
- Boiler room and chimney

A copy of the Phase I ESA (GES, July 31, 2024) is available upon request.

5 GES Subsurface Investigation – December 2024

5.1 Site-Specific QAPP Addendum

On October 30, 2024, GES completed a Site-Specific QAPPA for use during the requested SIR activities. The QAPPA outlined the following scope of work to be completed at the site:

- Advancement of 16 soil borings (MW-101 through MW-108 and SB-1 through SB-8), ranging in completion depth from approximately 15 to 18 fbg.
- Installation of eight (8) groundwater monitoring wells (MW-101 through MW-108), with installation depths ranging from approximately 13 to 18 fbg.
- Collection of discrete soil samples from the 16 soil boring and monitoring well locations, which were submitted to Eurofins Environmental Testing New England of North Kingston, Rhode Island (Eurofins) for one or more of the following analyses:
  - VOCs via EPA method 8260C
  - PAHs via EPA method 8270D
  - Total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via EPA method 8015D
  - Primary Pollutant Metals via EPA method 6010C/7471B

- Polychlorinated Biphenyls (PCBs) via EPA method 8082

5.2 Public Involvement

Prior to the conducting the subsurface investigation activities, notification of the proposed work was mailed to a total of 44 abutting property owners, tenants, easement holders, and the Town of Westerly on November 13, 2024. Electronic and hard copies of the notification were also provided to RIDEM.

Post-investigation public notice letters will be issued following receipt of the SIR program letter from RIDEM.

The site is not located in an Environmental Justice Area; therefore, additional associated public involvement is not required.

5.3 Dig Safe Mark-out

State law in Rhode Island requires that, at least 72 hours prior to the initiation of any subsurface work, a Dig Safe ticket be submitted for the site to initiate an inspection by Dig Safe personnel and marking of public underground utility locations. The Dig Safe mark-out was completed by GES personnel September 27, 2024, with Ticket No. 2024-480-3469 subsequently generated on November 26, 2024.

5.4 Soil Boring Advancement

Between December 5 and 12, 2024, Geologic Earth Exploration Inc. of Norfolk, Massachusetts (Geologic) advanced the 16 proposed soil borings, eight of which were completed as groundwater monitoring wells, under the supervision of GES. Soil samples were collected continuously during boring advancement and examined by GES for lithologic characterization, color, density, and moisture content. Additionally, soil samples were field screened for total volatile organic vapors (TVOVs) utilizing a MiniRae 3000 photoionization detector (PID) equipped with a 10.6 electron-Volt lamp calibrated to an isobutylene standard of 100 parts per million (ppm).

Each of the drilling locations was initially pre-cleared to a depth of approximately five fbg using an air-knife and vacuum truck to avoid damaging any subsurface structures that may have been present. During pre-clearing activities, soil samples were collected using a hand auger. Following pre-clearing procedures, soil samples were collected using a five-foot acetate sleeve sampler that was advanced via the track-mounted Geoprobe. Soil borings were advanced to depths of up to 18 fbg based on the target samples needed for delineation purposes and the depth to the groundwater table.

Soil boring locations are depicted on the Soil Sample Location Map provided as **Figure 3**. Soil boring and monitoring well installation logs that include all soil descriptions, PID field-screening results, and well construction details (where applicable) are presented in **Appendix D**.

Soil samples retained for analysis were collected utilizing laboratory provided glassware, placed on ice in a cooler, and submitted to Eurofins for analyses as indicated in the below Soil Sampling Matrix.

Soil Sampling Matrix

Soil Boring	Sample Interval (feet)	Analysis	Rationale for Sample
SB-1	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
SB-2	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	9-11	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
SB-3	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	7-9	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
SB-4	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	13-15	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
SB-5	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
MW-101	2-4	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
MW-102	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	13-15	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
MW-103	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	11-13	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
MW-104	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	7-9	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
MW-105	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
	9-11	TPH, VOCs, PAHs, PCBs, Metals	Potential for Urban Fill and hazardous substances, Lateral Delineation
SB-6	0-2	TPH, PAHs, PCBs, Metals	Potential for Urban Fill, Building Materials, and Combustion Byproducts
	5-6.5	TPH, PAHs, PCBs, Metals	Potential for Urban Fill, Building Materials, and Combustion Byproducts
SB-7	4-5	TPH, PAHs, Metals	Potential for Urban Fill, Building Materials, Metals, and Combustion Byproducts
SB-8	4-5	TPH, PAHs, Metals	Potential for Urban Fill, Building Materials, Coal Combustion Byproducts, and Automobile Debris

Soil Boring	Sample Interval (feet)	Analysis	Rationale for Sample
MW-106	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential for Coal Combustion Byproducts and Chlorinated VOCs
	9-11	TPH, VOCs, PAHs, PCBs, Metals	Potential for Coal Combustion Byproducts and Chlorinated VOCs
MW-107	13-15	TPH, VOCs, PAHs	Highest TVOV reading at location (3.5 ppm), Lateral Delineation
MW-108	0-2	TPH, VOCs, PAHs, PCBs, Metals	Potential Petroleum Constituents, Coal Combustion Byproducts, and Chlorinated VOCs
	13-15	TPH, VOCs, PAHs, PCBs, Metals	Potential Petroleum Constituents, Coal Combustion Byproducts, and Chlorinated VOCs

5.5 Groundwater Monitoring Well Installations

During the December 2024 subsurface investigation, groundwater was observed at depths ranging from approximately two to 14 fbg. Shallow groundwater was encountered during hand-clearing at around 2-3 fbg at the SB-1 and SB-5 soil boring locations. It is likely that groundwater at these locations is influenced by the adjacent river, as they are proximal to areas where shallow flowing surface water was observed.

Groundwater was encountered at approximately 6-7 fbg at the MW-104 (northernmost) and MW-106 (adjacent to river) locations. The water table at a majority of the drilling locations was between nine and 11 fbg, with one location (MW-108, adjacent to building remnants) exhibiting a lower groundwater interface at around 13-14 fbg.

Groundwater was not encountered in soil borings SB-6 (Geoprobe refusal at 6.5 fbg) and SB-8 (completion depth of 5.0 fbg).

Each monitoring well was constructed using 10 feet of two-inch diameter schedule 40 polyvinyl chloride (PVC) slotted screen installed at least five feet below the observed groundwater table, followed by solid PVC riser to approximately 3-4 feet above grade. Number two (2)-silica sand was installed in the annular space of each soil boring to at least one foot above the screened interval, and a one-foot hydrated bentonite seal was installed above the sand pack to prevent infiltration of surface water. The remaining upper annular space of each soil boring was backfilled with number two (2)-silica sand to grade. Each monitoring well was completed with a locking gripper plug and six-inch diameter steel protective casing with padlock installed surrounding the PVC riser.

The locations of the monitoring wells are depicted on the Site Map provided as **Figure 2** and Soil Sample Location Map included as **Figure 3**. Monitoring well installation logs are included in **Appendix D**.

5.6 Groundwater Monitoring Well Development

On December 16 and 18, 2024, monitoring wells MW-101 through MW-108 were developed using a disposable bailer to clear sediment from the wells and ensure proper groundwater flow through the screens. The purge water, which was confirmed to be free of odors and sheen at all locations, was discharged through perforated activated carbon buckets to the ground surface adjacent to the monitoring wells.

5.7 Groundwater Monitoring Well Elevation Surveys

On December 16 and 18, 2024, GES staff oversaw the completion of a professional survey of the site property and drilling locations by Hancock Associates of Marlborough, Massachusetts (Hancock).

Based on the wellhead elevations provided by Hancock and the gauging data collected by GES on December 26, 2024 and April 28, 2025, the groundwater flow direction at the site was determined to be to the northeast towards the Pawcatuck River. A Groundwater Contour Map from the December 2024 and April 2025 sampling events are provided as **Figure 4** and **Figure 5,** respectively.

5.8 Groundwater Sampling Events

On December 26, 2024, groundwater sampling was completed at the eight newly installed monitoring wells, MW-101 through MW-108. On April 28, 2025, groundwater sampling was completed at four of these monitoring wells, MW-105 through MW-108. During each event, the monitoring wells were gauged for depth to groundwater and to determine if light non-aqueous phase liquid (LNAPL) was present using a Solinst Model 122 oil-water interface probe. LNAPL was not detected in any of the monitoring wells gauged. Field equipment was decontaminated with a solution of distilled water and Alconox prior to use at each location.

Following gauging, each of the monitoring wells was purged and sampled using a peristaltic pump and disposable tubing in accordance with EPA low-flow sampling protocols. Field parameters including dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, pH, turbidity and conductivity were recorded using a properly calibrated multi-parameter water quality meter equipped with a flow-through cell. Groundwater samples were collected when stabilization criteria were achieved, and the purged groundwater was filtered through an activated carbon bucket to the ground surface adjacent to the wells. Groundwater samples were collected in laboratory-provided and preserved glassware and transported to Eurofins under proper chain-of-custody protocol. Following the December 2024 sampling event, groundwater samples were submitted for analysis of VOCs via United States Environmental Protection Agency (USEPA) method 8260, TPH DRO/GRO via USEPA method 8015D, PAHs via USEPA method 8270, Total Metals via USEPA method 6010D, and/or PCBs via USEPA method 8082A. The April 2025 groundwater samples were submitted for analysis of Total and Dissolved Arsenic via USEPA method 6010.

5.9 Waste Disposal

No investigation-derived wastes were generated during preparation of this SIR. Soils removed during drilling were placed back into the completed boreholes, and groundwater generated during purging of the monitoring wells was filtered through an activated carbon bucket to the ground surface adjacent to the well being sampled.

6 Site Investigation Results

Between December 5 and 12, 2024, five soil borings (SB-1 through SB-5) and five monitoring wells (MW-101 through MW-105) were installed to provide lateral delineation of potential impacts to help evaluate options for future site use. The locations of these borings and wells were selected to provide roughly equal coverage across the site footprint to laterally delineate any impacts identified during the investigation.

An additional three soil borings (SB-6 through SB-8) and three monitoring wells (MW-106 through MW-108) were installed to investigate the RECs identified during completion of the 2024 Phase I ESA.

6.1 Soil Analytical Results

TVOV concentrations in the soil samples ranged from below the PID detection limit to a maximum of 2,203 ppm. The highest TVOV concentration was detected between approximately 7 and 9 fbg at the SB-3 soil boring location. This sample, and other samples exhibiting elevated PID readings during boring advancement, were submitted for laboratory analysis with no exceedances of applicable RIDEM soil criteria for VOCs identified.

The soil analytical results from the December 2024 site investigation were compared to the RIDEM Residential Direct Exposure Criteria (RDEC) and Industrial/Commercial Direct Exposure Criteria (I/CDEC) outlined in the Remediation Regulations. Results were also compared to the RIDEM GA Leachability Criteria, where established for the constituents analyzed.

Based on the laboratory analytical results, the following exceedances of applicable or potentially applicable RIDEM criteria were identified:

- SB-4 (0-2 fbg)
  [approximate center of property]
  - Arsenic was detected at a concentration above the RDEC and I/CDEC.

- SB-6 (0-2 fbg)
  [adjacent to southern edge of building remnants]
  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)pyrene concentration was also above the I/CDEC.

- SB-6 (5-6.5 fbg)
  [adjacent to southern edge of building remnants]

  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)pyrene and dibenzo(a,h)anthracene concentrations were also above the I/CDEC.

- MW-101 (2-4 fbg)
  [west/southwest of building remnants – southern portion of former building]
  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)pyrene concentration was also above the I/CDEC.

- MW-102 (0-2 fbg)
  [west of building remnants – central/southern portion of former building]
  - Lead was detected at a concentration above the RDEC and I/CDEC.
  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)pyrene concentration was also above the I/CDEC.

- MW-103 (0-2 fbg)
  [approximate center of property]
  - Arsenic was detected at a concentration above the RDEC and I/CDEC.

- MW-106 (0-2 fbg)
  [adjacent to northern edge of building remnants]
  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)-anthracene and indeno(1,2,3-cd)pyrene concentrations were also above the I/CDEC.

- MW-108 (0-2 fbg)
  [adjacent to western edge of building remnants]
  - Arsenic was detected at a concentration above the RDEC and I/CDEC.

- MW-108 (13-15 fbg) – including duplicate sample
  [adjacent to western edge of building remnants]
  - Several PAHs were detected at concentrations above the RDEC.
  - The detected benzo(a)pyrene and dibenzo(a,h)anthracene concentrations were also above the I/CDEC.

A summary of soil laboratory analytical results from the December 2024 subsurface investigation is included in **Table 1**. The soil laboratory analytical reports from the subject investigation are included in **Appendix E**.

6.2 Groundwater Analytical Results

Based on the results of the December 26, 2024 and April 28, 2025 groundwater monitoring events, the depth to groundwater ranged from 7.99 (MW-106) to 13.02 (MW-101) ft btoc, and 7.97 (MW-106) to 11.04 (MW-108), respectively. LNAPL was not detected in any of the wells gauged and sampled. As indicated in section 5.7, the groundwater flow direction during these events were

determined to be to the northeast towards the Pawcatuck River, as shown in **Figure 4** and **Figure 5**.

Groundwater analytical results were compared to the RIDEM GA Groundwater Objectives (GOs) presented in the Remediation Regulations. The results of the December 2024 event indicated that exceedances of RIDEM GA GOs were limited to arsenic detections in the samples collected from monitoring wells MW-105, MW-106 (duplicate sample: MW-106-DUP), and MW-107. The detected arsenic concentrations in these samples ranged from 0.0105 to 0.0156 milligrams per liter (mg/L), above the RIDEM GA GO of 0.01 mg/L. MW-105 and MW-106 are located directly north of the former buildings in the area of observed coal residuals, while MW-107 is located west of the buildings in the area of the historic oil house.

Although arsenic was detected in shallow soil samples at the site, it is the opinion of GES that the elevated arsenic concentrations in groundwater may also have been the result of suspended solids in the samples. Due to these detections, on April 28, 2025, GES returned to the site to re-sample monitoring wells MW-105, MW-106, MW-107 and MW-108 for total and dissolved arsenic. Total and dissolved arsenic were not detected in the monitoring wells sampled above laboratory reporting limits or RIDEM GA GOs.

A summary of monitoring well gauging data and groundwater analytical results from the December 2024 and April 2025 sampling events are included as **Tables 2A**, **2B** and **2C**. The groundwater laboratory analytical report for this event is included as **Appendix F**.

6.3 Data Validation

In January 2025, the GES Environmental Informatics Group performed a Stage 2A Data Validation for the soil and groundwater laboratory analytical reports. The organic and inorganic data were reviewed in accordance with the EPA documents 542-R-20-005 and 542-R-20-006, respectively.

Based on the results of the validation, the samples were handled, prepared, and measured in the same manner under similar prescribed conditions. Overall, based on the quality control (QC) parameters, the data, as qualified, are usable for meeting project objectives per the specified analytical requirements for the project. A copy of the Data Validation Summary is Provided in **Appendix G**.

7 Conceptual Site Model

7.1 Setting

The site is located along Potter Hill Road, next to the Pawcatuck River in a residential area of Westerly. The nearest cross street is River Road to the east. The site is currently comprised of vacant land with remnants of the historic mill buildings present along the western edge of the Pawcatuck River. The site was utilized as a gristmill and sawmill from approximately 1762 until 1810, a cotton mill and small-scale boat building from 1810 until 1844, and a woolen mill from

1844 until 1955 when activities on-site reportedly ceased. The property has remained vacant since, and the site buildings have fallen into disrepair.

7.2 Constituents of Concern

Constituents detected in soil at concentrations at or above associated RIDEM RDEC and/or I/CDEC include the following:

- Arsenic – maximum detection 27.1 milligrams per kilogram (mg/kg)
- Lead – maximum detection 723 mg/kg
- Benzo(a)anthracene – maximum detection 39,400 mg/kg
- Benzo(a)pyrene – maximum detection 38,300 mg/kg
- Benzo(b)fluoranthene – maximum detection 47,500 mg/kg
- Benzo(g,h,i)perylene – maximum detection 26,100 mg/kg
- Benzo(k)fluoranthene – maximum detection 26,700 mg/kg
- Chrysene – maximum detection 44,800 mg/kg
- Dibenzo(a,h)anthracene – maximum detection 11,600 mg/kg
- Fluoranthene – maximum detection 79,600 mg/kg
- Indeno(1,2,3-cd)pyrene – maximum detection 25,200 mg/kg
- Phenanthrene – maximum detection 47,700 mg/kg
- Pyrene – maximum detection 78,500 mg/kg

Constituents detected in groundwater at concentrations above applicable RIDEM GA GOs include the following:

- Arsenic – maximum detection 0.0156 milligrams per liter (mg/L)

7.3 Potential Release and Transport Mechanisms

Based on the known site history and the distribution of hazardous substances in soil and groundwater, there are a combination of release mechanisms that may have occurred at the site:

7.3.1 PAHs

- Emplacement of fill material containing PAHs directly to the ground surface. Polluted fill would have initially impacted surrounding shallow soils through erosion or mechanical dispersion. Due to the low solubility of PAHs in water, it is unlikely that PAHs would have migrated via downward infiltration from rainwater to deeper site soils.

- The introduction of coal combustion byproducts to surface soils. During site reconnaissance, slag and coal pieces were observed in the vicinity of the former boiler house and to the north of the former buildings.

7.3.2 Arsenic

- Usage of pesticides containing arsenic applied directly to the ground surface. Pesticides would have initially impacted the surrounding shallow soils via downward infiltration from gravity or rainwater infiltration.
- Usage of arsenic-preserved lumber potentially associated with former mill operations. Arsenic would have initially impacted surrounding soils.
- Emplacement of fill material containing arsenic. Polluted fill would have initially impacted surrounding soils through erosion or mechanical dispersion.
- Naturally-occurring arsenic in the soil formation.
- Arsenic found in groundwater is typically due to natural sources, however, may also be present due to a release(s) to soil. If from a release to soil, dissolved phase arsenic would be mobilized from soil to the groundwater table via percolation.

7.3.3 Lead

- Emplacement of fill material containing lead. Polluted fill would have initially impacted surrounding soils through erosion or mechanical dispersion.
- A historic release of leaded gasoline to the ground surface. Gasoline would have initially impacted the surrounding shallow soils via downward infiltration from gravity as well as rainwater infiltration.

7.4 Potential Exposure Pathways

Exposure to lead, arsenic and/or PAH-impacted soil would likely be through ingestion or dermal contact for any person engaging directly with surficial and shallow soils on-site. In areas with limited ground cover at the site (i.e. access roads and around buildings), surficial materials can also become entrained by wind or erosion activities.

Exposure to arsenic through ingestion of impacted groundwater is a possibility due to the local groundwater classification as GAA, where groundwater is presumed safe for drinking. The site formerly utilized a private well and water storage tower for the fire suppression system. The water tower is no longer present at the site; however, the former private well is likely present in the western area of the site in overgrown vegetation. The site is currently fenced in, vacant, and buildings are in ruins, therefore it is unlikely that the onsite private well could presently be utilized for drinking water. Additional private drinking water supply wells are located at the residences along Post Office Lane.

Due to the physical properties of the site contaminants (metals and PAHs), the potential for volatilization and inhalation of associated vapors is unlikely.

7.5 Extent of Soil and Groundwater Impacts

Based on the findings of the December 2024 subsurface investigation activities, GES presents the following conclusions:

- Arsenic: Concentrations of arsenic exceeding the RIDEM RDEC and I/CDEC were limited to three samples collected at 0-2 fbg in the approximate center of the property (SB-4, MW-103 and MW-108). Other than the area underlying the former buildings and eastern edge of the property, the surficial arsenic impacts are delineated in all directions on-site.
- Lead: One sample, MW-102 (0-2′) contained lead at a concentration exceeding the RIDEM RDEC and I/CDEC. Surficial lead impacts are not fully delineated to the east (towards building remnants) or west (towards abutting residence), but do not appear to extend significantly to the north or south based on the locations of the data points.
- PAHs: With the exception of MW-102 (approximately 75 feet west of former buildings), the locations of samples exhibiting PAHs above the RIDEM RDEC and/or I/CDEC were directly adjacent to the southern, western and northern edges of the former buildings. These impacts are likely related to the historic use of coal on-site and associated combustion byproducts, which typically contain high levels of PAHs. The PAH impacts are not fully delineated to the east or west/southwest of the former buildings, or vertically in the vicinity of MW-108 (former boiler and engine room area).
- Site Groundwater: VOCs, TPH DRO/GRO, PAHs, Total Lead, and PCBs were not detected above the laboratory reporting limits in any of the groundwater monitoring wells sampled in December 2024. Total arsenic was detected above the RIDEM GA GO of 0.01 mg/L in three of the monitoring wells sampled, MW-105, MW-106 (duplicate sample) and MW-107. As discussed above, this may be attributable to suspended solids in the samples. Due to these detections, in April 2025, GES returned to the site to re-sample monitoring wells MW-105, MW-106, MW-107 and MW-108 for total and dissolved arsenic, which were not detected in the monitoring wells sampled above laboratory reporting limits or RIDEM GA GOs.

8 Evaluation of Remedial Alternatives

In accordance with Section 1.8.4 of the Remediation Regulations, GES evaluated relevant remedial alternatives based upon their risk, technical feasibility, compliance with state and local laws and regulations, and the ability of the Performing Party to complete the work.

It is noted that the special requirements for managing arsenic in soil described in Section 1.13 of the Remediation Regulations cannot be applied to the site, as not all detections were below 15 ppm. Arsenic is therefore included as a site contaminant of concern.

Based on the detections of total arsenic in groundwater exceeding the RIDEM GA GO during the December 2024 sampling event, groundwater monitoring for total and dissolved arsenic should continue until at least three consecutive quarters of compliance with the RIDEM GA GOs has been demonstrated for monitoring wells MW-105, MW-106, MW-107 and MW-108. Groundwater monitoring should be completed in additional to the selected remedial alternative.

8.1 Alternative #1 – No Action

In some cases, no action might be an acceptable alternative due to lack of potential exposures or other conditions. However, for this site, future use of the property is unknown and may include scenarios that involve direct contact with surficial soils since the site is unpaved. As such, at least one remedial approach is necessary to reduce the risk of exposure to residual arsenic, lead and/or PAH impacts at the site. No action is not recommended.

8.2 Alternative #2 – Soil Excavation with Off-Site Disposal

This approach would involve the removal and off-site disposal of impacted soils in the areas of drilling locations SB-4, SB-6, MW-101, MW-102, MW-103, MW-106, and MW-108. Confirmatory soil sampling would be used to verify that all impacts above RIDEM RDEC and I/CDEC have been successfully removed.

Risk Management

By removing contaminated source materials from the Site, long-term risks to human health and the environment would be significantly reduced. During the excavation, loading and off-Site disposal of the impacted soils, there would be a temporary increased risk of direct exposure to the contaminated material. To minimize the risk of exposures, soil excavation and loading activities would be conducted in accordance with a Site-specific Health and Safety Plan (HASP) and Soil Management Plan (SMP).

Technical Feasibility

The excavation and off-Site disposal of impacted soil is considered to be technically feasible. With the exception of the MW-108 location, the identified soil impacts were at depths of 6.5 fbg and above, which is above the water table under expected normal conditions. The MW-108 (duplicate sample) PAH exceedance was detected at approximately 13-15 fbg, and would thus require excavation dewatering to ensure the successful removal of all impacts. The impacts at depth are considered otherwise accessible for excavation in this area based on site conditions.

Compliance with Applicable Laws and Regulations

The soil excavation and disposal activities would be completed as outlined in a Remedial Action Work Plan (RAWP), and would comply with the RIDEM Remediation Regulations and other applicable state and local laws.

Financial Feasibility

The costs for the construction equipment and personnel (excavation and site restoration), soil disposal, laboratory analyses, and site closure reporting are considered financially feasible for the Performing Party, the Town of Westerly.

8.3 Alternative #3 – Engineering and Institutional Controls

This approach is associated with the installation of a soil cap to prevent exposure to surficial soils, and application of an Environmental Land Use Restriction (ELUR) to the site. The encapsulation of the impacted soils would render contaminants exceeding the RIDEM RDEC and I/CDEC

inaccessible beneath the engineered controls designed for the site. An ELUR and accompanying SMP would be recorded at the Westerly Land Records Office. Annual ELUR inspections and associated certification submittals would ensure that the engineered controls remain in good condition and meet the requirements set forth in the ELUR. Any observed deficiencies would be maintained and repaired on an as needed basis.

Risk Management

By removing surficial contaminated source materials to install the soil cap, long-term risks to human health and the environment would be reduced. During the excavation, loading and off-Site disposal of the shallow soils, there would be a temporary increased risk of direct exposure to contaminated material in the impacted areas. To minimize the risk of exposures, soil excavation and loading activities would be conducted in accordance with a Site-specific HASP and SMP.

Technical Feasibility

The capping of shallow impacted soils (engineering controls) and implementation of an ELUR (institutional controls) at the site is considered to be technically feasible.

Compliance with Applicable Laws and Regulations

The soil removal/disposal and capping activities would be completed as outlined in the RAWP, and would comply with the RIDEM Remediation Regulations and other applicable state and local laws.

Financial Feasibility

The costs for the construction equipment and personnel, soil disposal, clean fill and/or other capping materials, ELUR preparation, and subsequent annual compliance inspections are considered financially feasible for the Town of Westerly.

9 Recommendations

Based on the site investigation results, evaluation of potential migration and exposure pathways, and the current/potential future use of the site, GES recommends Alternative #3 – Engineering and Institutional Controls. Given the uneven ground surface across much of the site, the soil cap installation(s) could be performed in conjunction with any site redevelopment work that may be performed in the future. The RIDEM-compliant soil cap(s) will consist of two feet of clean fill material, one foot of clean fill underlain by a geotextile liner, or four inches of pavement underlain with at least six inches of clean sub-base material. Additionally, an ELUR will be applied to the entire Site to document site use restrictions, inspection and maintenance requirements. A soil management plan (SMP) will accompany the ELUR, which will document for any future activities which may require disturbance of the cap(s), how work will be conducted and soil managed to prevent exposure to site receptors.

Proposed next steps are as follows:

- Continued groundwater monitoring until at least 3 consecutive quarters compliance with the RIDEM GA GO can be demonstrated for total and dissolved arsenic at monitoring wells MW-105, MW-106, MW-107 and MW-108.

- Following receipt of a Program Letter from RIDEM, GES recommends proceeding with Alternative #3 including the preparation of a RAWP, submittal of $1,000.00 Remedial Action Approval fee, and completion of post-Site Investigation Public Notice as required by the Remediation Regulations. A draft post-Site Investigation Public Notice will be submitted for RIDEM approval prior to distribution.

10 Certification Requirements

This Site Investigation Report was certified by GES in accordance with Section 1.8.5 of the Remediation Regulations. The certification letters from GES and the Town of Westerly are provided in **Appendix H**.

References

Groundwater and Environmental Services, Inc. *Site Specific Quality Assurance Project Plan Addendum,* October 30, 2024

Groundwater and Environmental Services, Inc., *Phase I Environmental Site Assessment,* July 31, 2024

Rhode Island Department of Environmental Management, *A Summary of Rhode Island Groundwater Classification and Groundwater Standards*, September 2009

Rhode Island Department of Environmental Management, *Groundwater Classification Wellhead Protection Areas and Drinking Water Reservoir Watersheds for Rhode Island*, 2012

Rhode Island Department of Environmental Management, *Environmental Resource Map,* accessed February 2025

Rhode Island Department of Environmental Management, *Rhode Island Bedrock Formations Map,* 1994

Rhode Island Department of Environmental Management, *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases*, April 22, 2020

City of Westerly, Rhode Island, *GIS Database,* accessed December 2024

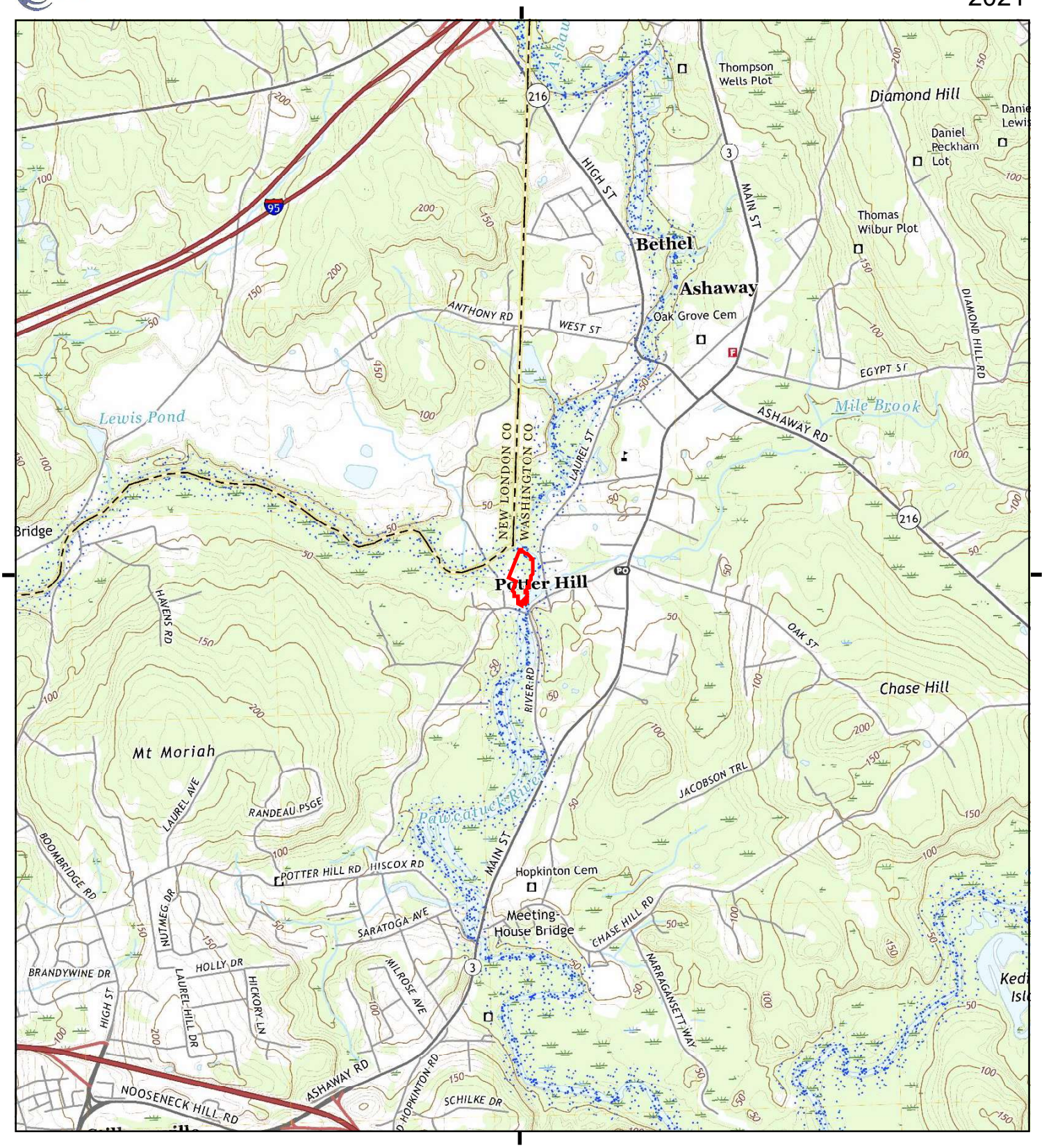
City of Westerly, Rhode Island, *Tax Assessor Database*, accessed December 2024

United States Geological Survey, *7.5 Minute Series Topographical Quadrangle, Ashaway, Rhode Island,* 2021

Figures

Figure 1 - Site Location Map

2021



This report includes information from the following map sheet(s).

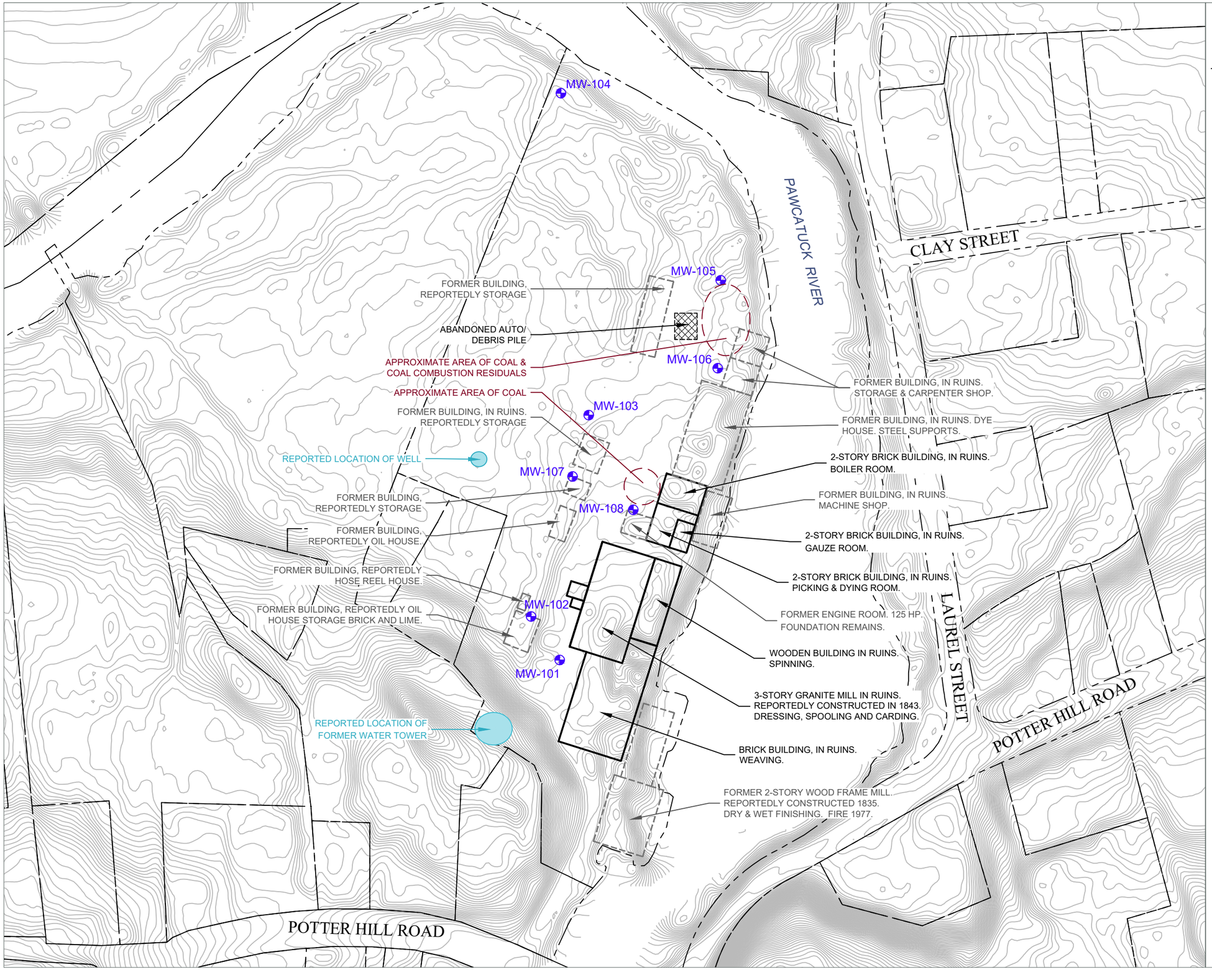
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Ashaway, 2021, 7.5-minute

SITE NAME: Potter Hill Mill
ADDRESS: 198 Potter Hill Road
Westerly, RI 02891
CLIENT: GES, Inc.

N



LEGEND

PROPERTY BOUNDARY (APPROXIMATE)

MONITORING WELL

Source:
Hancock Associates, Monitoring Well Plan, Sheet: 1, Date: 12/23/24.

Site Map

Rhode Island Department of Environmental Management
198 Potter Hill Road
Westerly, Rhode Island

Drawn
E.V.
Designed
M.J.
Approved
H.W.

Date
01/06/25
Figure
2

N

Scale In Feet
0 100

Groundwater & Environmental Services, Inc.

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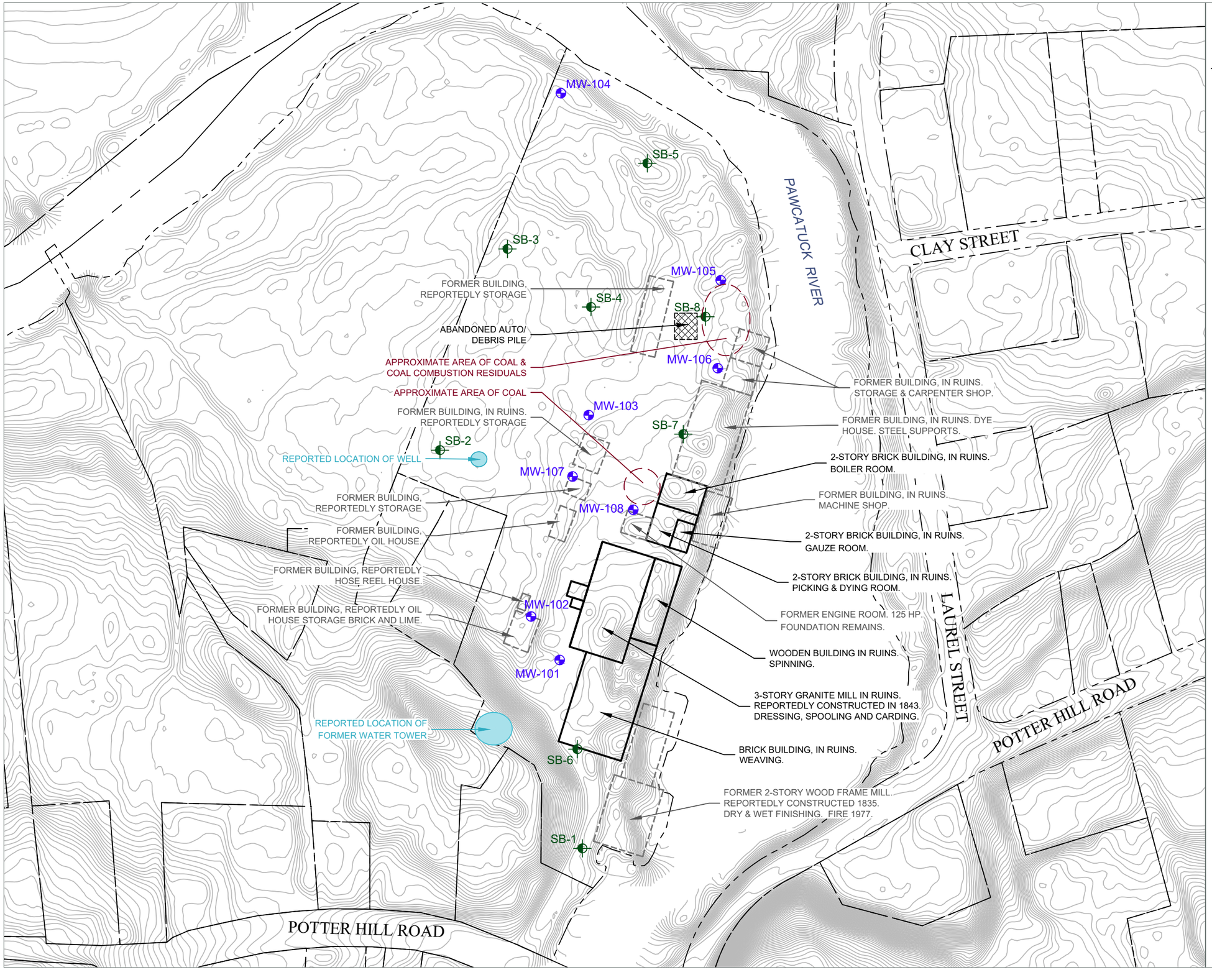

LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- MONITORING WELL
- SOIL BORING

Source:
Hancock Associates, Monitoring Well Plan, Sheet: 1, Date: 12/23/24.

Soil Sample Location Map

Rhode Island Department of Environmental Management
198 Potter Hill Road
Westerly, Rhode Island

Drawn: E.V.
Designed:
Approved:
Date: 01/06/25
Figure: 3

Scale In Feet
0 100

Groundwater & Environmental Services, Inc.

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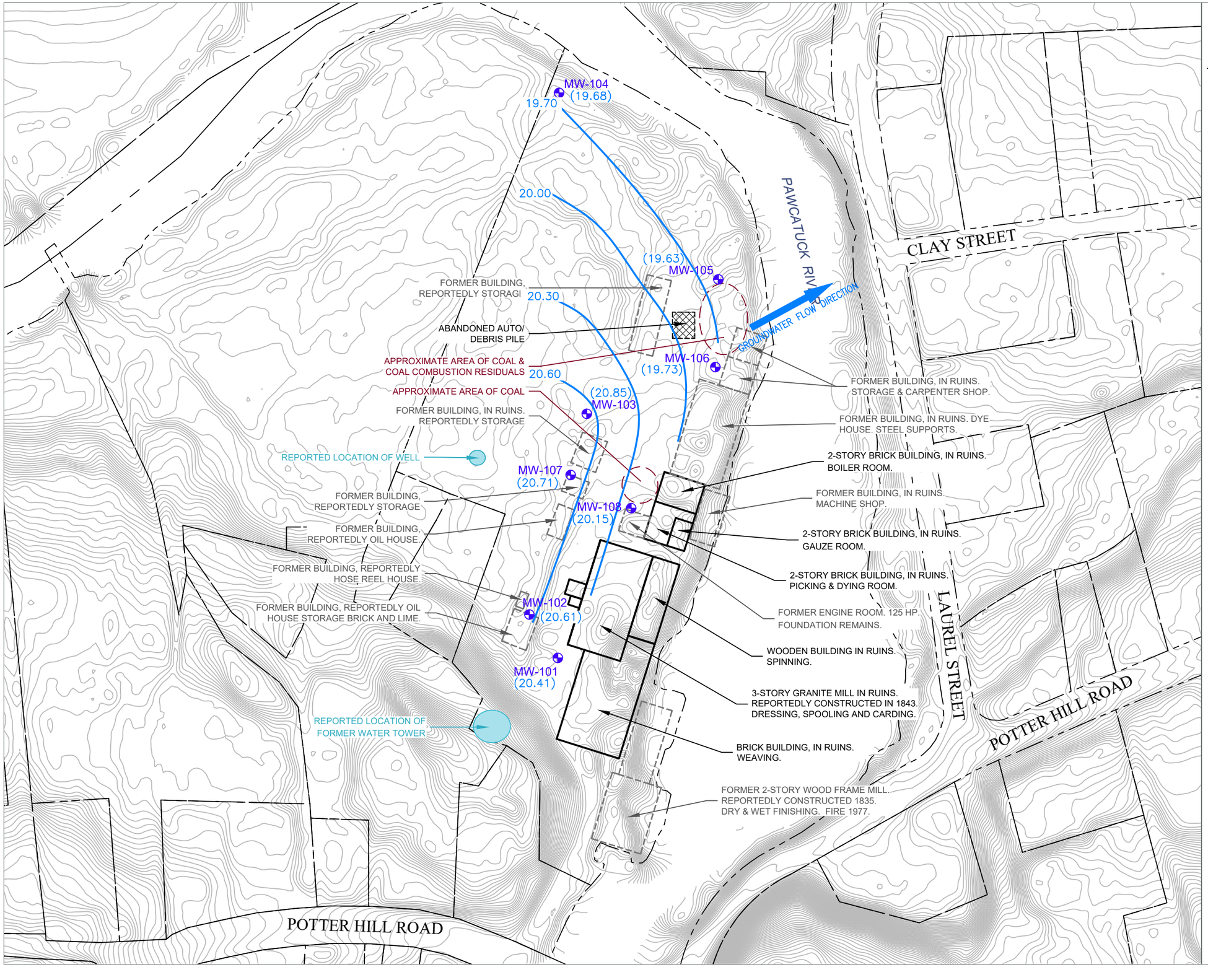

LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- MONITORING WELL
- (19.68) GROUNDWATER ELEVATION (feet)
- GROUNDWATER CONTOUR (feet)

Source:
Hancock Associates, Monitoring Well Plan, Sheet: 1, Date: 12/23/24.

Groundwater Monitoring Map
December 26, 2024

Rhode Island Department of Environmental Management
198 Potter Hill Road
Westerly, Rhode Island

Drawn M.H.
Designed M.J.
Approved

Date 02/21/25
Figure 4

Scale In Feet
0 100

Groundwater & Environmental Services, Inc.

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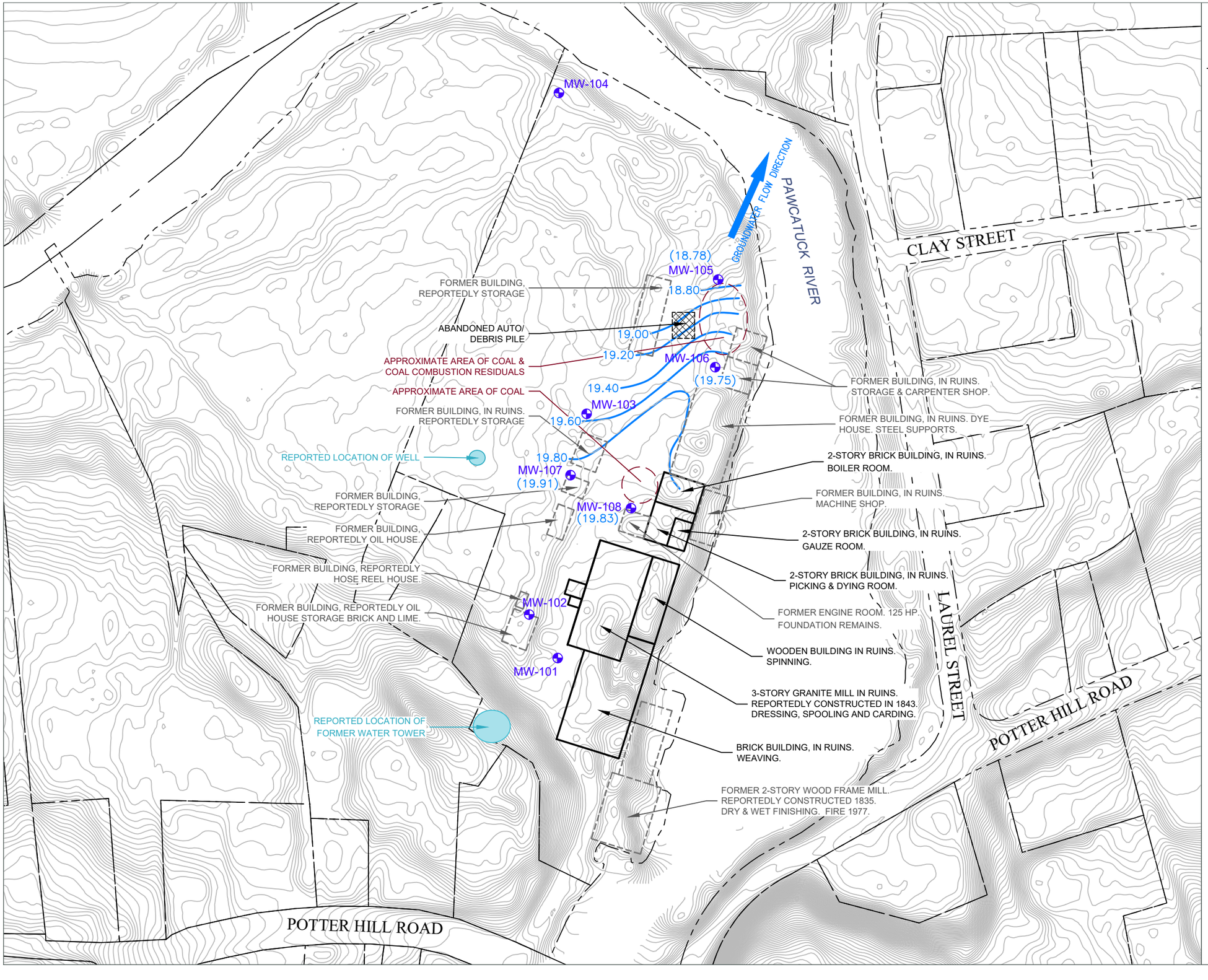

LEGEND

- PROPERTY BOUNDARY (APPROXIMATE)
- MONITORING WELL
- (18.75) GROUNDWATER ELEVATION (feet)
- GROUNDWATER CONTOUR (feet)

Source:
Hancock Associates, Monitoring Well Plan, Sheet: 1, Date: 12/23/24.

Groundwater Monitoring Map
April 28, 2025

Rhode Island Department of Environmental Management
198 Potter Hill Road
Westerly, Rhode Island

Drawn M.H.
Designed R.K.
Approved H.P.

Date 05/06/25
Figure 5

N

Scale In Feet
0 100

Groundwater & Environmental Services, Inc.

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Tables

Former Potter Hill Mill
198 Potter Hill Road
Westerly, RI

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	SB-1 (0-2)	SB-2 (0-2)	SB-2 (9-11)	SB-3 (0-2)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	0-2	0-2	9-11	0-2
				Sample Date:	12/5/2024	12/9/2024	12/12/2024	12/6/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<9.34)	ND (<11.86)	ND (<5.58)	ND (<12.20)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<46.7)	ND (<59.3)	ND (<27.9)	ND (<61.0)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Bromoform	81,000	720,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Chloroform	1,200	940,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Chloromethane	NE	NE	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<4.67)*	*ND (<5.93)*	*ND (<2.79)*	*ND (<6.10)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<9.33)	ND (<11.9)	ND (<5.58)	ND (<12.2)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Vinyl chloride	20	3,000	300	ug/kg	ND (<4.67)	ND (<5.93)	ND (<2.79)	ND (<6.10)
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<3.61)	ND (<6.51)	ND (<4.06)	ND (<6.25)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	28.1	61.2	ND (<15.0)	35.6
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<9.98)	ND (<9.57)	ND (<11.5)	ND (<9.84)
Arsenic	7	7	NE	mg/kg	ND (<2.99)	ND (<2.87)	ND (<3.46)	ND (<2.95)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.998)	ND (<0.957)	ND (<1.15)	ND (<0.984)
Cadmium	39	1,000	NE	mg/kg	ND (<0.998)	ND (<0.957)	ND (<1.15)	ND (<0.984)
Chromium	NE	NE	NE	mg/kg	2.25	11.2	ND (<2.31)	4.84
Copper	3,100	10,000	NE	mg/kg	3.73	11.7	ND (<2.31)	10.7
Lead	150	500	NE	mg/kg	4.18	58.9	ND (<3.46)	6.44
Nickel	1,000	10,000	NE	mg/kg	ND (<2.00)	2.80	ND (<2.31)	ND (<1.97)
Mercury	23	610	NE	mg/kg	ND (<0.0513)	0.0644	ND (<0.0467)	0.0527
Selenium	390	10,000	NE	mg/kg	ND (<2.99)	ND (<2.87)	ND (<3.46)	ND (<2.95)
Silver	200	10,000	NE	mg/kg	ND (<2.99)	ND (<2.87)	ND (<3.46)	ND (<2.95)
Thallium	5.5	140	NE	mg/kg	*ND (<5.99)*	ND (<5.74)	ND (<6.93)	*ND (<5.91)*
Zinc	6,000	10,000	NE	mg/kg	ND (<5.99)	75.9	ND (<6.93)	21.5
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<23.3)	72.5	ND (<23.2)	ND (<23.1)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<23.3)	ND (<23.3)	ND (<23.2)	ND (<23.1)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<23.3)	ND (<23.3)	ND (<23.2)	ND (<23.1)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<376)	ND (<78.9)	ND (<75.4)	ND (<72.0)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Benzo(a)anthracene	900	7,800	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Benzo(a)pyrene	400	800	240,000	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Benzo(b)flouranthene	900	7,800	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Chrysene	400	780,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Flouranthene	20,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Phenanthrene	40,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)
Pyrene	13,000	10,000,000	NE	ug/kg	ND (<76.0)	ND (<78.9)	ND (<75.4)	ND (<72.0)

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	SB-3 (7-9)	SB-4 (0-2)	SB-4 (13-15)	SB-5 (0-2)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	7-9	0-2	13-15	0-2
				Sample Date:	12/12/2024	12/9/2024	12/12/2024	12/6/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<10.52)	ND (<13.96)	ND (<13.58)	ND (<16.28)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<52.6)	ND (<69.8)	ND (<67.9)	ND (<81.4)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Bromoform	81,000	720,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Chloroform	1,200	940,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Chloromethane	NE	NE	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<5.26)*	*ND (<6.98)*	*ND (<6.79)*	*ND (<8.14)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<10.5)	ND (<14.0)	ND (<13.6)	ND (<16.3)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Vinyl chloride	20	3,000	300	ug/kg	ND (<5.26)	ND (<6.98)	ND (<6.79)	ND (<8.14)
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<3.12)	ND (<8.57)	ND (<4.88)	ND (<8.36)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	ND (<14..6)	710	ND (<14.4)	116
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<5.34)	ND (<9.90)	ND (<11.7)	ND (<9.34)
Arsenic	7	7	NE	mg/kg	ND (<1.60)	**27.1**	ND (<3.50)	ND (<2.80)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.534)	ND (<0.990)	ND (<1.17)	ND (<0.934)
Cadmium	39	1,000	NE	mg/kg	ND (<0.534)	ND (<0.990)	ND (<1.17)	ND (<0.934)
Chromium	NE	NE	NE	mg/kg	ND (<1.07)	719	3.55	41.8
Copper	3,100	10,000	NE	mg/kg	3.07	157	ND (<2.34)	24.0
Lead	150	500	NE	mg/kg	ND (<1.60)	82.4	ND (<3.50)	73.1
Nickel	1,000	10,000	NE	mg/kg	ND (<1.07)	2.06	3.63	2.11
Mercury	23	610	NE	mg/kg	ND (<0.0436)	0.0767	ND (<0.0531)	0.386
Selenium	390	10,000	NE	mg/kg	ND (<1.60)	7.02	ND (<3.50)	ND (<2.80)
Silver	200	10,000	NE	mg/kg	ND (<1.60)	ND (<2.97)	ND (<3.50)	ND (<2.80)
Thallium	5.5	140	NE	mg/kg	ND (<3.20)	ND (<5.94)	ND (<7.01)	*ND (<5.61)*
Zinc	6,000	10,000	NE	mg/kg	11.7	34.2	19.0	28.0
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<21.8)	ND (<23.2)	ND (<23.0)	ND (<23.2)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<21.8)	ND (<23.2)	ND (<23.0)	ND (<23.2)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<21.8)	ND (<23.2)	ND (<23.0)	ND (<23.2)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Benzo(a)anthracene	900	7,800	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Benzo(a)pyrene	400	800	240,000	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	81.2
Benzo(b)flouranthene	900	7,800	NE	ug/kg	ND (<345)	502	ND (<78.6)	112
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	ND (<345)	498	ND (<78.6)	ND (<76.7)
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Chrysene	400	780,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	84.7
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Flouranthene	20,000	10,000,000	NE	ug/kg	ND (<345)	407	ND (<78.6)	145
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Phenanthrene	40,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	ND (<76.7)
Pyrene	13,000	10,000,000	NE	ug/kg	ND (<345)	ND (<377)	ND (<78.6)	136

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	SB-6 (0-2)	SB-6 (5-6.5)	SB-7 (4-5)	SB-8 (4-5)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	0-2	5-6.5	4-5	4-5
				Sample Date:	12/5/2024	12/10/2024	12/5/2024	12/6/2025
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<12.66)	ND (<12.94)	NA	NA
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<63.3)	ND (<64.7)	NA	NA
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Bromoform	81,000	720,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Carbon disulfide	NE	NE	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Chloroform	1,200	940,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Chloromethane	NE	NE	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<6.33)*	*ND (<6.47)*	NA	NA
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<12.7)	ND (<12.9)	NA	NA
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Trichloroethene	13,000	520,000	200	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Vinyl chloride	20	3,000	300	ug/kg	ND (<6.33)	ND (<6.47)	NA	NA
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	NA	NA
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<5.96)	ND (<5.52)	ND (<4.61)	ND (<5.61)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	152	462	73.1	ND (<75.1)
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<9.53)	ND (<9.62)	ND (<8.50)	ND (<9.22)
Arsenic	7	7	NE	mg/kg	4.00	ND (<2.89)	2.91	ND (<2.76)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.953)	ND (<0.962)	ND (<0.850)	ND (<0.922)
Cadmium	39	1,000	NE	mg/kg	ND (<0.953)	ND (<0.962)	1.55	ND (<0.922)
Chromium	NE	NE	NE	mg/kg	4.12	5.83	61.8	4.83
Copper	3,100	10,000	NE	mg/kg	22.6	6.20	24.8	9.46
Lead	150	500	NE	mg/kg	20.6	19.3	72.6	2.76
Nickel	1,000	10,000	NE	mg/kg	8.72	2.96	3.49	2.04
Mercury	23	610	NE	mg/kg	ND (<0.0490)	ND (<0.0494)	ND (<0.0527)	ND (<0.0398)
Selenium	390	10,000	NE	mg/kg	ND (<2.86)	ND (<2.89)	ND (<2.55)	ND (<2.76)
Silver	200	10,000	NE	mg/kg	ND (<2.86)	ND (<2.89)	ND (<2.55)	ND (<2.76)
Thallium	5.5	140	NE	mg/kg	*ND (<5.72)*	ND (<5.77)	ND (<5.10)	*ND (<5.53)*
Zinc	6,000	10,000	NE	mg/kg	10.3	52.3	137	17.1
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<23.4)	ND (<22.3)	NA	NA
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<23.4)	ND (<22.3)	NA	NA
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<23.4)	ND (<22.3)	NA	NA
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<395)	ND (<380)	ND (<76.0)	ND (<73.5)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<395)	ND (<380)	ND (<76.0)	ND (<73.5)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<395)	413	ND (<76.0)	ND (<73.5)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<395)	1,800	ND (<76.0)	ND (<73.5)
Anthracene	35,000	10,000,000	NE	ug/kg	501	2,040	ND (<76.0)	106
Benzo(a)anthracene	900	7,800	NE	ug/kg	**942**	**3,660**	ND (<76.0)	268
Benzo(a)pyrene	400	800	240,000	ug/kg	**876**	**3,610**	ND (<76.0)	304
Benzo(b)flouranthene	900	7,800	NE	ug/kg	**1,140**	**3,440**	78.6	325
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	567	**2,440**	ND (<76.0)	217
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	889	**3,970**	ND (<76.0)	310
Chrysene	400	780,000	NE	ug/kg	**1,190**	**3,600**	82.0	297
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<395)	**854**	ND (<76.0)	86.0
Flouranthene	20,000	10,000,000	NE	ug/kg	**2,120**	9,200	106	583
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<395)	672	ND (<76.0)	ND (<73.5)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	566	**2,270**	ND (<76.0)	206
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<395)	ND (<380)	ND (<76.0)	ND (<73.5)
Phenanthrene	40,000	10,000,000	NE	ug/kg	2,080	6,920	133	360
Pyrene	13,000	10,000,000	NE	ug/kg	1,900	7,920	100	494

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	SB-8 (4-5)-DUP	MW-101 (2-4)	MW-102 (0-2)	MW-102 (13-15)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	4-5	2-4	0-2	13-15
				Sample Date:	12/6/2025	12/5/2024	12/9/2024	12/10/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Toluene	190,000	10,000,000	32,000	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	NA	NA	ND (<10.06)	ND (<6.58)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Acetone	7,800,000	10,000,000	NE	ug/kg	NA	NA	ND (<50.3)	ND (<32.9)
Bromodichloromethane	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Bromoform	81,000	720,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
2-Butanone (MEK)	NE	NE	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
n-Butylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
sec-Butylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
tert-Butylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Carbon disulfide	NE	NE	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Chloroform	1,200	940,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Chloromethane	NE	NE	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
Dibromochloromethane	7,600	68,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	NA	NA	*ND (<5.03)*	*ND (<3.29)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
1,2-Dichloroethane	900	63,000	100	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
p-Isopropyltoluene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
Methylene chloride	45,000	760,000	NE	ug/kg	NA	NA	ND (<10.1)	ND (<6.58)
Naphthalene	54,000	10,000,000	800	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
n-Propylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Tetrachloroethene	12,000	110,000	100	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Trichloroethene	13,000	520,000	200	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Vinyl chloride	20	3,000	300	ug/kg	NA	NA	ND (<5.03)	ND (<3.29)
Other VOCs	Various	Various	Various	ug/kg	NA	NA	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<5.67)	ND (<5.83)	ND (<7.37)	ND (<4.33)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	210	91.9	358	ND (<14.2)
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<9.70)	*ND (<11.9)*	ND (<10.0)	ND (<9.75)
Arsenic	7	7	NE	mg/kg	ND (<2.91)	ND (<3.57)	ND (<3.00)	ND (<2.92)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.970)	ND (<1.19)	ND (<1.00)	ND (<0.975)
Cadmium	39	1,000	NE	mg/kg	ND (<0.970)	ND (<1.19)	ND (<1.00)	ND (<0.975)
Chromium	NE	NE	NE	mg/kg	4.87	7.46	14.5	ND (<1.95)
Copper	3,100	10,000	NE	mg/kg	8.80	10.8	16.7	ND (<1.95)
Lead	150	500	NE	mg/kg	ND (<2.91)	32.4	**723**	ND (<2.92)
Nickel	1,000	10,000	NE	mg/kg	ND (<1.94)	3.65	3.38	ND (<1.95)
Mercury	23	610	NE	mg/kg	ND (<0.0457)	0.0643	0.321	ND (<0.0450)
Selenium	390	10,000	NE	mg/kg	ND (<2.91)	ND (<3.57)	ND (<3.00)	ND (<2.92)
Silver	200	10,000	NE	mg/kg	ND (<2.91)	ND (<3.57)	ND (<3.00)	ND (<2.92)
Thallium	5.5	140	NE	mg/kg	*ND (<5.82)*	*ND (<7.13)*	ND (<6.00)	ND (<5.85)
Zinc	6,000	10,000	NE	mg/kg	16.4	31.7	129	ND (<5.85)
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	NA	ND (<23.9)	ND (<23.1)	ND (<22.3)
PCB-1260	10,000	10,000	10,000	ug/kg	NA	ND (<23.9)	ND (<23.1)	ND (<22.3)
Other PCBs	10,000	10,000	10,000	ug/kg	NA	ND (<23.9)	ND (<23.1)	ND (<22.3)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<72.6)	ND (<80.2)	ND (<372)	ND (<75.4)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<72.6)	ND (<80.2)	ND (<372)	ND (<75.4)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<72.6)	81.5	ND (<372)	ND (<75.4)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<72.6)	229	415	ND (<75.4)
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<72.6)	406	904	ND (<75.4)
Benzo(a)anthracene	900	7,800	NE	ug/kg	157	**1,190**	**2,180**	ND (<75.4)
Benzo(a)pyrene	400	800	240,000	ug/kg	158	**1,140**	**2,340**	ND (<75.4)
Benzo(b)flouranthene	900	7,800	NE	ug/kg	168	**1,150**	**2,120**	ND (<75.4)
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	106	723	**1,590**	ND (<75.4)
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	154	**1,040**	**2,220**	ND (<75.4)
Chrysene	400	780,000	NE	ug/kg	158	**1,410**	**2,500**	ND (<75.4)
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<72.6)	282	**558**	ND (<75.4)
Flouranthene	20,000	10,000,000	NE	ug/kg	348	2,270	5,170	ND (<75.4)
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<72.6)	ND (<80.2)	ND (<372)	ND (<75.4)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	104	655	**1,400**	ND (<75.4)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<72.6)	ND (<80.2)	ND (<372)	ND (<75.4)
Phenanthrene	40,000	10,000,000	NE	ug/kg	173	1,330	4,230	ND (<75.4)
Pyrene	13,000	10,000,000	NE	ug/kg	289	2,650	5,190	ND (<75.4)

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	MW-103 (0-2)	MW-103 (11-13)	MW-103 (11-13)-DUP	MW-104 (0-2)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	0-2	11-13	11-13	0-2
				Sample Date:	12/6/2024	12/11/2024	12/11/2024	12/6/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<11.40)	ND (<8.26)	ND (<7.40)	ND (<13.40)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<57.0)	ND (<41.3)	ND (<37.0)	ND (<67.0)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Bromoform	81,000	720,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Chloroform	1,200	940,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Chloromethane	NE	NE	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<5.70)*	*ND (<4.13)*	*ND (<3.70)*	*ND (<6.70)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<11.4)	ND (<8.26)	ND (<7.41)	ND (<13.4)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Vinyl chloride	20	3,000	300	ug/kg	ND (<5.70)	ND (<4.13)	ND (<3.70)	ND (<6.70)
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<6.47)	ND (<5.10)	ND (<4.42)	ND (<7.65)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	77.1	ND (<16.4)	ND (<15.7)	109
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	*ND (<19.9)*	ND (<5.25)	ND (<4.92)	ND (<9.99)
Arsenic	7	7	NE	mg/kg	**10.3**	ND (<1.57)	ND (<1.48)	ND (<3.00)
Beryllium	1.5	1.5	NE	mg/kg	*ND (<1.99)*	ND (<0.525)	ND (<0.492)	ND (<0.999)
Cadmium	39	1,000	NE	mg/kg	ND (<1.99)	ND (<0.525)	ND (<0.492)	ND (<0.999)
Chromium	NE	NE	NE	mg/kg	40.7	11.2	7.43	21.0
Copper	3,100	10,000	NE	mg/kg	37.8	15.9	12.5	14.8
Lead	150	500	NE	mg/kg	82.0	2.93	2.18	39.2
Nickel	1,000	10,000	NE	mg/kg	11.9	8.14	4.23	ND (<2.00)
Mercury	23	610	NE	mg/kg	ND (<0.0531)	ND (<0.0451)	ND (<0.0489)	0.158
Selenium	390	10,000	NE	mg/kg	ND (<5.97)	ND (<1.57)	ND (<1.48)	ND (<3.00)
Silver	200	10,000	NE	mg/kg	ND (<5.97)	ND (<1.57)	ND (<1.48)	ND (<3.00)
Thallium	5.5	140	NE	mg/kg	*ND (<11.9)*	ND (<3.15)	ND (<2.95)	*ND (<5.99)*
Zinc	6,000	10,000	NE	mg/kg	40.9	27.6	13.9	17.8
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<22.2)	ND (<24.7)	ND (<23.0)	ND (<22.4)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<22.2)	ND (<24.7)	ND (<23.0)	ND (<22.4)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<22.2)	ND (<24.7)	ND (<23.0)	ND (<22.4)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Benzo(a)anthracene	900	7,800	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Benzo(a)pyrene	400	800	240,000	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	76.7
Benzo(b)flouranthene	900	7,800	NE	ug/kg	105	ND (<81.3)	ND (<77.9)	93.5
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	76.1
Chrysene	400	780,000	NE	ug/kg	200	ND (<81.3)	ND (<77.9)	83.9
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Flouranthene	20,000	10,000,000	NE	ug/kg	97.8	ND (<81.3)	ND (<77.9)	133
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<74.9)	ND (<81.3)	ND (<77.9)	ND (<73.5)
Phenanthrene	40,000	10,000,000	NE	ug/kg	240	ND (<81.3)	ND (<77.9)	ND (<73.5)
Pyrene	13,000	10,000,000	NE	ug/kg	97.3	ND (<81.3)	ND (<77.9)	129

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	MW-104 (7-9)	MW-105 (0-2)	MW-105 (9-11)	MW-106 (0-2)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	7-9	0-2	9-11	0-2
				Sample Date:	12/11/2024	12/6/2024	12/11/2024	12/6/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<8.86)	ND (<16.68)	ND (<9.20)	ND (<12.86)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<44.3)	ND (<83.4)	ND (<46.0)	ND (<64.3)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Bromoform	81,000	720,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Chloroform	1,200	940,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Chloromethane	NE	NE	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<4.43)*	*ND (<8.34)*	*ND (<4.60)*	*ND (<6.43)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<8.86)	ND (<16.7)	ND (<9.20)	ND (<12.9)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Vinyl chloride	20	3,000	300	ug/kg	ND (<4.43)	ND (<8.34)	ND (<4.60)	ND (<6.43)
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<4.57)	ND (<16.9)	ND (<4.12)	ND (<11.1)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	58.7	762	ND (<15.2)	892
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<16.1)	ND (<9.95)	ND (<5.76)	*ND (<11.5)*
Arsenic	7	7	NE	mg/kg	ND (<4.83)	ND (<2.98)	ND (<1.73)	ND (<3.46)
Beryllium	1.5	1.5	NE	mg/kg	ND (<1.61)	ND (<0.995)	ND (<0.576)	ND (<1.15)
Cadmium	39	1,000	NE	mg/kg	ND (<1.61)	ND (<0.995)	ND (<0.576)	ND (<1.15)
Chromium	NE	NE	NE	mg/kg	3.52	62.7	3.97	10.1
Copper	3,100	10,000	NE	mg/kg	ND (<3.22)	24.9	7.08	18.1
Lead	150	500	NE	mg/kg	ND (<4.83)	76.2	1.83	36.9
Nickel	1,000	10,000	NE	mg/kg	ND (<3.22)	4.35	1.24	4.99
Mercury	23	610	NE	mg/kg	ND (<0.0658)	0.106	ND (<0.0426)	ND (<0.0487)
Selenium	390	10,000	NE	mg/kg	ND (<4.83)	ND (<2.98)	ND (<1.73)	ND (<3.46)
Silver	200	10,000	NE	mg/kg	ND (<4.83)	ND (<2.98)	ND (<1.73)	ND (<3.46)
Thallium	5.5	140	NE	mg/kg	ND (<9.66)	*ND (<5.97)*	ND (<3.46)	*ND (<6.92)*
Zinc	6,000	10,000	NE	mg/kg	23.9	31.9	17.0	30.2
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<29.2)	162	ND (<24.0)	ND (<22.7)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<29.2)	49.9	ND (<24.0)	ND (<22.7)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<29.2)	ND (<22.9)	ND (<24.0)	ND (<22.7)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	ND (<1,820)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	ND (<1,820)
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	3,610
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	ND (<1,820)
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	12,000
Benzo(a)anthracene	900	7,800	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**39,400**
Benzo(a)pyrene	400	800	240,000	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**38,300**
Benzo(b)flouranthene	900	7,800	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**47,500**
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**26,100**
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**26,700**
Chrysene	400	780,000	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**44,800**
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**11,600**
Flouranthene	20,000	10,000,000	NE	ug/kg	ND (<88.3)	1,700	ND (<81.2)	**79,600**
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	3,880
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	ND (<88.3)	*ND (<1,450)*	ND (<81.2)	**25,200**
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	1,820
Phenanthrene	40,000	10,000,000	NE	ug/kg	ND (<88.3)	ND (<1,450)	ND (<81.2)	**47,700**
Pyrene	13,000	10,000,000	NE	ug/kg	ND (<88.3)	1,650	ND (<81.2)	**78,500**

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Former Potter Hill Mill
198 Potter Hill Road
Westerly, RI

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	MW-106 (9-11)	MW-107 (13-15)	MW-108 (0-2)	MW-108 (13-15)
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	9-11	13-15	0-2	13-15
				Sample Date:	12/11/2024	12/10/2024	12/5/2024	12/10/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260								
Benzene	2,500	200,000	200	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.72)	ND (<7.80)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<44.3)	ND (<50.5)	ND (<58.6)	ND (<39.0)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Bromoform	81,000	720,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Chloroform	1,200	940,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Chloromethane	NE	NE	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<4.43)*	*ND (<5.05)*	*ND (<5.86)*	*ND (<3.90)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<8.86)	ND (<10.1)	ND (<11.7)	ND (<7.80)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Vinyl chloride	20	3,000	300	ug/kg	ND (<4.43)	ND (<5.05)	ND (<5.86)	ND (<3.90)
Other VOCs	Various	Various	Various	ug/kg	BRL	BRL	BRL	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics								
C6-C10	NE	NE	NE	mg/kg	ND (<4.88)	ND (<4.62)	ND (<11.9)	ND (<5.07)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics								
C10-C28	NE	NE	NE	mg/kg	ND (<17.0)	ND (<14.3)	944	62.5
Total PP13 Metals via EPA method 6010D/7471B								
Antimony	10	820	NE	mg/kg	ND (<5.67)	NA	ND (<9.94)	ND (<9.88)
Arsenic	7	7	NE	mg/kg	ND (<1.70)	NA	**20.5**	ND (<2.97)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.567)	NA	ND (<0.994)	ND (<0.988)
Cadmium	39	1,000	NE	mg/kg	ND (<0.567)	NA	ND (<0.994)	ND (<0.988)
Chromium	NE	NE	NE	mg/kg	12.1	NA	8.82	3.03
Copper	3,100	10,000	NE	mg/kg	14.9	NA	21.5	3.42
Lead	150	500	NE	mg/kg	2.14	NA	94.5	3.89
Nickel	1,000	10,000	NE	mg/kg	7.19	NA	4.85	3.62
Mercury	23	610	NE	mg/kg	ND (<0.0568)	NA	0.0801	ND (<0.0497)
Selenium	390	10,000	NE	mg/kg	ND (<1.70)	NA	ND (<2.98)	ND (<2.97)
Silver	200	10,000	NE	mg/kg	ND (<1.70)	NA	ND (<2.98)	ND (<2.97)
Thallium	5.5	140	NE	mg/kg	ND (<3.40)	NA	*ND (<5.96)*	ND (<5.93)
Zinc	6,000	10,000	NE	mg/kg	23.7	NA	20.0	23.8
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A								
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<24.6)	NA	ND (<24.1)	ND (<21.9)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<24.6)	NA	ND (<24.1)	ND (<21.9)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<24.6)	NA	ND (<24.1)	ND (<21.9)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270								
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	389
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	472
Acenapthene	43,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	ND (<76.2)
Acenapthylene	23,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	86.4
Anthracene	35,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	209
Benzo(a)anthracene	900	7,800	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	446
Benzo(a)pyrene	400	800	240,000	ug/kg	ND (<78.9)	ND (<74.6)	*ND (<618)*	345
Benzo(b)flouranthene	900	7,800	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	345
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	221
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	324
Chrysene	400	780,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	*ND (<618)*	**470**
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	ND (<78.9)	ND (<74.6)	*ND (<618)*	107
Flouranthene	20,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	916
Fluorene	28,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	ND (<76.2)
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	200
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	427
Phenanthrene	40,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	880
Pyrene	13,000	10,000,000	NE	ug/kg	ND (<78.9)	ND (<74.6)	ND (<618)	993

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
I/CDEC - Industrial/Commercial Direct Exposure Criteria
ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Former Potter Hill Mill
198 Potter Hill Road
Westerly, RI

Table 1

Summary of Soil Analytical Data

Analysis	RIDEM Remediation Regulations Criteria			Sample ID:	MW-108 (13-15)-DUP
	RDEC	I/C DEC	GA Leachability Criteria	Depth (fbg):	13-15
				Sample Date:	12/10/2024
Volatile Organic Compounds (VOCs) via EPA Method 8260					
Benzene	2,500	200,000	200	ug/kg	ND (<3.57)
Toluene	190,000	10,000,000	32,000	ug/kg	ND (<3.57)
Ethylbenzene	71,000	10,000,000	27,000	ug/kg	ND (<3.57)
Xylenes	220,000	20,000,000	1,080,000	ug/kg	ND (<7.13)
Methyl tert-Butyl Ether (MTBE)	390,000	10,000,000	900	ug/kg	ND (<3.57)
Acetone	7,800,000	10,000,000	NE	ug/kg	ND (<35.7)
Bromodichloromethane	NE	NE	NE	ug/kg	ND (<3.57)
Bromoform	81,000	720,000	NE	ug/kg	ND (<3.57)
2-Butanone (MEK)	NE	NE	NE	ug/kg	ND (<7.13)
n-Butylbenzene	NE	NE	NE	ug/kg	ND (<7.13)
sec-Butylbenzene	NE	NE	NE	ug/kg	ND (<3.57)
tert-Butylbenzene	NE	NE	NE	ug/kg	ND (<3.57)
Carbon disulfide	NE	NE	NE	ug/kg	ND (<7.13)
Carbon Tetrachloride	1,500	44,000	400	ug/kg	ND (<3.57)
Chlorobenzene	210,000	10,000,000	3,200	ug/kg	ND (<3.57)
Chloroform	1,200	940,000	NE	ug/kg	ND (<3.57)
Chloromethane	NE	NE	NE	ug/kg	ND (<7.13)
1,2-Dibromo-3-chloropropane	500.00	4,100	NE	ug/kg	ND (<7.13)
Dibromochloromethane	7,600	68,000	NE	ug/kg	ND (<3.57)
1,2-Dibromoethane (EDB)	10	70	1	ug/kg	*ND (<3.57)*
1,2-Dichlorobenzene	510,000	10,000,000	41,000	ug/kg	ND (<3.57)
Dichlorodifluoromethane (Freon 12)	NE	NE	NE	ug/kg	ND (<7.13)
1,2-Dichloroethane	900	63,000	100	ug/kg	ND (<3.57)
1,2-Dichloropropane	1,900	84,000	100	ug/kg	ND (<3.57)
Isopropylbenzene	27,000	10,000,000	NE	ug/kg	ND (<3.57)
p-Isopropyltoluene	NE	NE	NE	ug/kg	ND (<3.57)
4-Methyl-2-Pentanone (MIBK)	1,200,000	10,000,000	NE	ug/kg	ND (<7.13)
Methylene chloride	45,000	760,000	NE	ug/kg	ND (<7.13)
Naphthalene	54,000	10,000,000	800	ug/kg	ND (<3.57)
n-Propylbenzene	NE	NE	NE	ug/kg	ND (<3.57)
1,1,1,2-Tetrachloroethane	2,200	220,000	NE	ug/kg	ND (<3.57)
1,1,2,2-Tetrachloroethane	1,300	29,000	NE	ug/kg	ND (<3.57)
Tetrachloroethene	12,000	110,000	100	ug/kg	ND (<3.57)
1,2,3-Trichlorobenzene	NE	NE	NE	ug/kg	ND (<3.57)
1,1,2-Trichloroethane	3,600	100,000	100	ug/kg	ND (<3.57)
Trichloroethene	13,000	520,000	200	ug/kg	ND (<3.57)
1,2,4-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<3.57)
1,3,5-Trimethylbenzene	NE	NE	NE	ug/kg	ND (<3.57)
Vinyl chloride	20	3,000	300	ug/kg	ND (<3.57)
Other VOCs	Various	Various	Various	ug/kg	BRL
Total Petroleum Hydrocarbons via EPA method 8015D - Gasoline Range Organics					
C6-C10	NE	NE	NE	mg/kg	ND (<3.87)
Total Petroleum Hydrocarbons via EPA method 8015D - Diesel Range Organics					
C10-C28	NE	NE	NE	mg/kg	393
Total PP13 Metals via EPA method 6010D/7471B					
Antimony	10	820	NE	mg/kg	ND (<8.73)
Arsenic	7	7	NE	mg/kg	ND (<2.62)
Beryllium	1.5	1.5	NE	mg/kg	ND (<0.873)
Cadmium	39	1,000	NE	mg/kg	ND (<0.873)
Chromium	NE	NE	NE	mg/kg	16.3
Copper	3,100	10,000	NE	mg/kg	8.42
Lead	150	500	NE	mg/kg	17.3
Nickel	1,000	10,000	NE	mg/kg	3.18
Mercury	23	610	NE	mg/kg	ND (<0.0506)
Selenium	390	10,000	NE	mg/kg	ND (<2.62)
Silver	200	10,000	NE	mg/kg	ND (<2.62)
Thallium	5.5	140	NE	mg/kg	ND (<5.24)
Zinc	6,000	10,000	NE	mg/kg	33.0
Polychlorinated Biphenyls (PCBs) via EPA Method 8082A					
PCB-1254	10,000	10,000	10,000	ug/kg	ND (<22.7)
PCB-1260	10,000	10,000	10,000	ug/kg	ND (<22.7)
Other PCBs	10,000	10,000	10,000	ug/kg	ND (<22.7)
Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270					
1-Methylnaphthalene	NE	NE	NE	ug/kg	ND (<379)
2-Methylnaphthalene	123,000	10,000,000	NE	ug/kg	ND (<379)
Acenapthene	43,000	10,000,000	NE	ug/kg	542
Acenapthylene	23,000	10,000,000	NE	ug/kg	687
Anthracene	35,000	10,000,000	NE	ug/kg	1,890
Benzo(a)anthracene	900	7,800	NE	ug/kg	**5,060**
Benzo(a)pyrene	400	800	240,000	ug/kg	**5,040**
Benzo(b)flouranthene	900	7,800	NE	ug/kg	**5,750**
Benzo(g,h,i)perylene	800	10,000,000	NE	ug/kg	**3,600**
Benzo(k)fluoranthene	900	78,000	NE	ug/kg	**4,670**
Chrysene	400	780,000	NE	ug/kg	**6,550**
Dibenzo(a,h)anthracene	400	800	NE	ug/kg	**1,370**
Flouranthene	20,000	10,000,000	NE	ug/kg	12,200
Fluorene	28,000	10,000,000	NE	ug/kg	729
Indeno(1,2,3-cd)pyrene	900	7,800	NE	ug/kg	**3,300**
Naphthalene	54,000	10,000,000	800	ug/kg	515
Phenanthrene	40,000	10,000,000	NE	ug/kg	10,600
Pyrene	13,000	10,000,000	NE	ug/kg	12,000

Notes:
NA - not analyzed or not applicable
NE - not established
BRL - below laboratory reporting limits
fbg - feet below grade
mg/kg - milligrams per kilogram
RIDEM - Rhode Island Department of Environmental Management
RDEC - Residential Direct Exposure Criteria
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ND - not detected at or above the reporting limit shown
Bold - concentration exceeds RIDEM RDEC
Underlined - concentration exceeds RIDEM I/CDEC

Former Potter Hill Mill
198 Potter Hill Road,
Westerly, RI

Table 2A

SUMMARY OF GROUNDWATER ANALTYICAL DATA (VOCs)

Monitoring Well	Date Samples	Top of Casing	Depth to Water	Depth to Free Product	GW Elevation	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	cis-1,2-Dichloroethene	Chloroform	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane (EDB)	Naphthalene	Tetrachloroethene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride	Methylene Chloride	Dibromochloromethane
	Units	**Feet**	**Feet**	**Feet**	**Feet**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
	GA Groundwater Objectives					**5**	**1,000**	**700**	**20,000**	**40**	**70**	**80**	**0.2**	**0.05**	**100**	**5**	**200**	**5**	**5**	**2**	**5**	**80**
	GB Groundwater Objectives					**140**	**1,700**	**1,600**	**NE**	**5,000**	**2,400**	**NE**	**2**	**NE**	**NE**	**150**	**3,100**	**NE**	**540**	**2**	**NE**	**NE**
MW-101	12/26/2024	33.43	13.02	ND	20.41	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
MW-102	12/26/2024	28.90	8.29	ND	20.61	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
MW-103	12/26/2024	29.01	8.16	ND	20.85	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
MW-104	12/26/2024	28.12	8.44	ND	19.68	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
MW-105	12/26/2024	29.85	10.22	ND	19.63	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
	4/28/2025	28.95	10.17	ND	18.78	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-106	12/26/2024	27.72	7.99	ND	19.73	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
	4/28/2025	27.72	7.97	ND	19.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-107	12/26/2024	29.59	8.88	ND	20.71	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
	4/28/2025	29.59	9.68	ND	19.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-108	12/26/2024	30.87	10.72	ND	20.15	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)
	4/28/2025	30.87	11.04	ND	19.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-106-DUP	12/26/2024	--	--	--	--	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	*ND (<2.00)*	*ND (<0.500)*	ND (<2.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<1.00)	ND (<2.00)	ND (<0.500)

Notes:

NE = no established standard
NS = not sampled for specific compound
ND = not detected
ug/L = micrograms per liter
ND = not detected
(#) = laborotory detection limit
VOCs = volatile organic compounds
MTBE = Methyl tert-Butyl Ether
Bolded values represent concentrations that are above applicable GA Groundwater Objectives
Italicized values represent laboratory reporting limits that are above applicable criteria

Former Potter Hill Mill
198 Potter Hill Road,
Westerly, RI

Table 2B

SUMMARY OF GROUNDWATER ANALYTICAL DATA (PAHs & TPH)

Monitoring Well	Date Samples	TPH-GRO (C6-C10)	TPH-DRO (C10-C28)	PAHs																	
				Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Phenanthrene	Pyrene	Flourene	1-Methylnaphthalene	2-Methylnaphthalene	Indeno[1,2,3-cd]pyrene	Benzo[g,h,i]perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
Units		**mg/L**	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**ug/L**	**ug/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**ug/L**	**ug/L**	**ug/L**
GA Groundwater Objectives		**NE**	**NE**	**100**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.2**	**NE**	**NE**	**NE**	**NE**	**NE**
GB Groundwater Objectives		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-101	12/26/2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-102	12/26/2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-103	12/26/2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-104	12/26/2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-105	12/26/2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-106	12/26/2024	NS	NS	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	*ND (<4.63)*	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)
MW-107	12/26/2024	ND (<0.100)	ND (<0.190)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	*ND (<4.63)*	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)
MW-108	12/26/2024	NS	NS	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	*ND (<4.46)*	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)	ND (<4.46)
MW-106-DUP	12/26/2024	NS	NS	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	*ND (<4.63)*	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)	ND (<4.63)
MW-107-DUP	12/26/2024	ND (<0.100)	ND (<0.200)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

NE = no established standard
NS = not sampled for specific compound
ND = not detected
ug/L = micrograms per liter
mg/L = miligrams per liter
(#) = laborotory detection limit
PAHs = polycyclic aromatic hydrocarbons
TPH = total petroleum hydrocarbons
GRO = gasoline range organics
DRO = diesel range organics
Bolded values represent concentrations that are above applicable GA Groundwater Objectives
Italicized values represent laboratory reporting limits that are above applicable criteria

Former Potter Hill Mill
198 Potter Hill Road,
Westerly, RI

Table 2C

SUMMARY OF GROUNDWATER ANALYTICAL DATA (METALS & PCBS)

Monitoring Well	Date Samples	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Dissolved Arsenic	Total PCBs
	Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**
GA Groundwater Objectives		**0.006**	**0.01**	**0.004**	**0.005**	**0.1**	**NE**	**0.015**	**0.002**	**0.1**	**0.05**	**NE**	**0.002**	**NE**	**0.01**	**0.5**
GB Groundwater Objectives		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-101	12/26/2024	*ND (<0.0120)*	ND (<0.00800)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.0143	NS	NS
MW-102	12/26/2024	*ND (<0.0120)*	ND (<0.00800)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.0311	NS	NS
MW-103	12/26/2024	*ND (<0.0120)*	ND (<0.00800)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	ND (<0.0100)	NS	NS
MW-104	12/26/2024	*ND (<0.0120)*	ND (<0.00950)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	ND (<0.0100)	NS	NS
MW-105	12/26/2024	*ND (<0.0120)*	**0.0156**	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	ND (<0.0100)	NS	NS
	4/28/2025	NS	ND (<0.00800)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND (<0.00800)	NS
MW-106	12/26/2024	*ND (<0.0120)*	ND (<0.00800)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.213	NS	ND (<0.400)
	4/28/2025	NS	ND (<0.00800)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND (<0.00800)	NS
MW-107	12/26/2024	*ND (<0.0120)*	**0.0105**	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.0102	NS	NS
	4/28/2025	NS	ND (<0.00800)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND (<0.00800)	NS
MW-108	12/26/2024	*ND (<0.0120)*	ND (<0.00800)	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.0965	NS	ND (<0.364)
	4/28/2025	NS	ND (<0.00800)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND (<0.00800)	NS
MW-106-DUP	12/26/2024	*ND (<0.0120)*	**0.0133**	ND (<0.00400)	ND (<0.00500)	ND (<0.0100)	ND (<0.0100)	ND (<0.0150)	ND (<0.0002)	ND (<0.0100)	ND (<0.0300)	ND (<0.0100)	ND (<0.0100)	0.216	NS	NS
	4/28/2025	NS	ND (<0.00800)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND (<0.00800)	NS

Notes:

NE = no established standard
NS = not sampled for specific compound
ND = not detected
(#) = laborotory detection limit
PCBs = volatile organic compounds
Bolded values represent concentrations that are above applicable GA Groundwater Objectives
Italicized values represent laboratory reporting limits that are above applicable criteria

Appendix A – Site Investigation Report (SIR) Checklist

Section 1.20 of the "Remediation Regulations"
Site Investigation Report (SIR) Checklist

(The following information shall be completed and submitted with the SIR)

Contact Name: Joel Walcott
Contact Address: Groundwater & Environmental Services, Inc.
Contact Telephone: 800-426-9871 x 3616

Site Name: Former Potter Hill Mill
Site Address: 198 Potter Hill Road, Westerly, Rhode Island, 02891

OFFICE USE ONLY
SITE INVESTIGATION REPORT (SIR) SITE:
PROJECT CODE:
SIR SUBMITTAL DATE:
CHECKLIST SUBMITTAL DATE:

DIRECTIONS: *The box to the left of each item listed below is for the administrative review of the SIR submission and is for **RIDEM USE ONLY**. Under each item listed below, cross-reference the specific sections and pages in the SIR that provide detailed information that addresses each stated requirement. Failure to include cross-references may delay review and approval. If an item is not applicable, simply state that it is not applicable and provide an explanation in the SIR.*

☐ 1.8.3(A)(1) List specific objectives of the SIR related to characterization of the Release, impacts of the Release and remedy.
Section 1, page 1

☐ 1.8.3(A)(2) Include information reported in the Notification of Release. A copy of the Release notification form should be included in the SIR. Include information relating to short-term response, if applicable.
Appendix B (Hazardous Material Release Notification Form)

☐ 1.8.3(A)(3) Include documentation of any past incidents or Releases.
Section 3.2, pages 4-5

☐ 1.8.3(A)(4) Include list of prior property Owners and Operators, as well as sequencing of property transfers and time periods of occupancy.

☐ 1.8.3(A)(5) Include previously existing environmental information which characterizes the Contaminated-Site and all information that led to the discovery of the Contaminated-Site.
Sections 3 and 4, pages 4-5

☐ 1.8.3(A)(6) Include current uses and zoning of the Contaminated-Site, including brief statements of operations, processes employed, waste generated, Hazardous Materials handled, and any residential activities on the site, if applicable. (This section should be linked to the specific objectives section demonstrating how the compounds of concern in the investigation are

those that are used or may have been used on the site or are those that may have impacted the site from an off-site source.)

Section 2.1, pages 1-2

☐ 1.8.3(A)(7) Include a locus map showing the location of the site using US Geological Survey 7.5-min quadrangle map or a copy of a section of that USGS map.

Figure 1

☐ 1.8.3(A)(8) Include a site plan, to scale, showing:

- ☐ Buildings
- ☐ Activities
- ☐ Structures
- ☐ North Arrow
- ☐ Wells
- ☐ UIC Systems, septic tanks, UST, piping and other underground structures
- ☐ Outdoor Hazardous Materials storage and handling areas
- ☐ Extent of paved areas
- ☐ Location of environmental samples previously taken with analytical results
- ☐ Waste management and disposal areas
- ☐ Property Lines

Figure 2

☐ 1.8.3(A)(9) Include a general characterization of the property surrounding the area including, but not limited to:

- ☐ Location and distance to any surface water bodies within 500 ft of the site.
- ☐ Location and distance to any Environmentally Sensitive Areas within 500 ft of the site.
- ☐ Actual sources of potable water for all properties immediately abutting the site.
- ☐ Location and distance to all public water supplies, which have been active within the previous 2 years and within one mile of the site.

☐ Determination as to whether the Release impacts any off-site area utilized for residential or industrial/commercial property or both.

☐ Determination of the underlying groundwater classification and if the classification is GB, the distance to the nearest GA area.

Section 2.2 (pages 2-3), Section 2.4 (page 4), Section 7.5 (pages 14-15)

☐ 1.8.3(A)(10) Include classifications of surface and ground water at and surrounding the site that could be impacted by a Release.

Section 2.2.2 Groundwater Classification, Section 2.2.3 Surface Water

☐ 1.8.3(A)(11) Include a description of the contamination from the Release, including:

☐ Free liquids on the surface

☐ LNAPL and DNAPL

☐ Concentrations of Hazardous Substances which can be shown to present an actual or potential threat to human health and any concentrations in excess of any of the remedial objectives (reference Section 1.13)

☐ Impact to Environmentally Sensitive Areas

☐ Contamination of man-made structures

☐ Odors or stained soil

☐ Stressed vegetation

☐ Presence of excavated or stockpiled material and an estimate of its total volume

☐ Environmental sampling locations, procedures and copies of the results of any analytical testing at the site

☐ List of Hazardous Substances at the site

☐ Discuss if the contamination falls outside of the jurisdiction of the Remediation Regulations, including but not limited to USTs, UICs, and wetlands.

N/A - the contamination identified in the SIR does not fall outside the jurisdiction of the Remediation Regulations.

☐ 1.8.3(A)(12) Include the concentration gradients of Hazardous Substances throughout the site for each media impacted by the Release.

Section 6.1 (pages 10-11), Section 6.2 (pages 11-12), Section and 7.2 (page 13)

☐ 1.8.3(A)(13) Include the methodology and results of any investigation conducted to determine background concentrations of Hazardous Substances identified at the Contaminated-Site (see Section 1.13).

N/A - background levels not identified (assumed to be non-detect concentrations)

☐ 1.8.3(A)(14) Include a listing and evaluation of the site specific hydrogeological properties which could influence the migration of Hazardous Substances throughout and away from the site, including but not limited to, where appropriate:

- ☐ Depth to GW
- ☐ Presence and effects of both the natural and man-made barriers to and conduits for contaminant migration
- ☐ Characterization of bedrock
- ☐ Groundwater contours, flow rates and gradients throughout the site

Section 2.2 (pages 2-3), Section 5.7 (page 9), Figure 4, and Table 2A

☐ 1.8.3(A)(15) Include a characterization of the topography, surface water and run-off flow patterns, including the flooding potential, of the site.

Sections 2.2.1 and 2.2.3, pages 2-3

☐ 1.8.3(A)(16) Include the potential for Hazardous Substances from the site to volatilize and any and all potential impacts of the volatilization to structures within the site.

Section 7.4 (page 14)

☐ 1.8.3(A)(17) Include the potential for entrainment of Hazardous Substances from the site by wind or erosion actions.

Section 7.4 (page 14)

☐ 1.8.3(A)(18) Include detailed protocols for all fate and transport models used in the Site Investigation.

N/A - no fate and transport models were used in the site investigation.

☐ 1.8.3(A)(19) Include a complete list of all samples taken, the location of all samples, parameters tested for and analytical methods used during the Site Investigation. (Be sure to include the samples locations and analytical results on a site figure).

Section 5.4 (pages 7-8) and Section 5.8 (page 9)

☐ 1.8.3(A)(20) Include construction plans and development procedures for all monitoring wells. Well construction shall be consistent with the requirements of the Groundwater Quality Rules.

Section 5.5 (pages 8-9) and Section 5.6 (page 9)

☐ 1.8.3(A)(21) Include procedures for the handling, storage and disposal of wastes derived from and during the investigation.

Section 5.9 (page 10)

☐ 1.8.3(A)(22) Include a quality assurance and quality control evaluation summary report for sample handling and analytical procedures, including, but not limited to, chain-of-custody procedures and sample preservation techniques.

Section 6.3 (page 12) and Appendix G (Data Validation Summary)

☐ 1.8.3(A)(23) Include any other site-specific factor, that the Director believes, is necessary to make an accurate decision as to the appropriate Remedial Action to be taken at the site.

No other site-specific factors identified.

☐ 1.8.4 Include Remedial Alternatives. The Site Investigation Report shall contain a minimum of **TWO (2)** remedial alternatives other than no action/natural attenuation alternative, unless this requirement is waived by the Department. It should be clear which of these alternatives is most preferable. All alternatives shall be supported by relevant data contained in the Site Investigation Report and consistent with the current and reasonably forseeable land usage, and documentation of the following:

- Compliance with Section 1.9 (RISK MANGEMENT);
- Technical feasibility of the preferred remedial alternative;
- Compliance with federal, state and local laws or other public concerns; and
- The ability of the Performing Party to perform the preferred remedial alternative.

Section 8 (pages 15-17)

☐ 1.8.5 **Certification Requirements:** The Site Investigation Report and all associated progress reports shall include the following statements signed by an authorized representative of the party specified:

A statement signed by an authorized representative of the Person who prepared the Site Investigation Report certifying the completeness and accuracy of the information contained in that report to the best of their knowledge; and

A statement signed by the Performing Party responsible for the submittal of the Site Investigation Report certifying that the report is a complete and accurate representation of the site and the Release and contains all known facts surrounding the Release to the best of their knowledge.

Section 10 (page 17) and Appendix H (Certification Letters)

☐ 1.8.6 **Progress Reports:** If the Site Investigation is not complete, include a schedule for the submission of periodic progress reports on the status of the investigation and interim reports on any milestones achieved in the project.

N/A - other than proposed re-sampling of certain monitoring wells, the site investigation is complete.

☐ **Public Involvement and Notice:** Be prepared to implement public notice requirements per Sections 1.8.7 and 1.8.9 of the Remediation Regulations when the Department deems the Site Investigation Report to be complete.

Indicate if the site falls within an Environmental Justice (EJ) area and, if applicable, include all EJ public notice documentation issued, and the list of recipients.

Post-SIR public involvement will be completed, and the site is not located in an EJ area.

Appendix B – Hazardous Material Release Notification Form

Office of Land Revitalization & Sustainable Materials Management
Site Remediation Section

HAZARDOUS MATERIAL RELEASE NOTIFICATION FORM

THIS FORM IS NOT TO BE USED TO REPORT AN IMMINENT HAZARD

1. Notifier Information:

Name: Groundwater & Environmental Services, Inc.

Address: 234 Littleton Road, Suite 1F, Westford, MA 01886

Phone: 800-221-6119 ext. 3616

Email: jwalcott@gesonline.com

Status:
- ☒ Environmental Professional
- ☐ Owner
- ☐ Operator
- ☐ Secured Creditor
- ☐ Voluntary

If Environmental Professional is selected, please supply the follow information for your client below:

Name: Town of Westerly, RI (Dale Faulkner)

Address: 45 Broad Street, Westerly, RI 02891

Phone: 401-3478-2500

Email: Dale Faulkner <dfaulkner@westerlyri.gov>

Status:
- ☒ Owner
- ☐ Operator
- ☐ Secured Creditor
- ☐ Voluntary

2. Property Information:

Name of Site: Potter Hill Mill

Site Address: 198 Potter Hill Road, Westerly, RI 02891

Plat/Lot Numbers: Map 8/Block 23

Approximate Acreage of Property: 4.55 acres

Latitude/Longitude: 41°24'53.50"N, 71°47'49.76"W

Site Land Usage Type: ☐ Residential ☒ Industrial/Commercial

Location of Release (Attach site sketch as necessary):
See attached Figure 2 (Site Map) and Figure 3 (Soil Sample Location Map).

3. Release Information:

Date of Discovery: 12/27/2024: Results of soil samples collected as part of Phase II Site Assessment.

Source: Historic site operations and fire.

Release Media: Unknown: associated with nine soil samples and three groundwater samples

Hazardous Materials and Concentrations (Attach certificates of analysis as necessary):
Arsenic, Lead and/or PAHs detected in nine soil samples, and Arsenic in three groundwater samples (see Tables 1 and 2C).

Extent of Contamination: Unknown, vicinity of nine drilling locations including SB-4, SB-6, MW-101, MW-102, MW-103, and MW-105 through MW-108.

Approximate acreage of Contaminated Area: Unknown, vicinity of (9) drilling locations on 4.55-acre parcel

4. Resource Information:

Site Land Usage:	■ Industrial/Commercial	☐ Residential
Adjacent Land Usage:	☐ Industrial/Commercial	■ Residential
Site Groundwater Class:	■ GA/GAA	☐ GB
Adjacent Groundwater Class: (if different than site groundwater classification within 500 feet)	☐ GA/GAA	☐ GB
Nearest Surface Water or Wetland:	■ Less Than 500 Feet	☐ Greater Than 500 Feet
Potential for adverse impact?	■ Yes	☐ No

5. Potentially Responsible Parties:

Name: Town of Westerly, RI (Dale Faulkner)

Address: 45 Broad Street, Westerly, RI 02891

Status: [X] Owner ☐ Operator ☐ Other:

Name:

Address:

Status: ☐ Owner ☐ Operator ☐ Other:

6. Measures taken or proposed to be taken in response to Release:

Check all that apply: ■ Site Investigation ☐ Short-Term/Emergency ☐ EXPRESS Policy ☐ Dig & Haul Policy

7. Other significant remarks about Release (Will a background determination be made?)
No other significant remarks - background is believed to be associated with non-detectable concentrations of the contaminants of concern based on the data collected.

Signature: _____ **Date:** 02/25/2025

Title: Principal Engineer

Appendix C – Site-Specific Quality Assurance Plan Addendum

1.0 TITLE AND APPROVAL PAGE

Site Name/Project Name:	Potter Hill Mill	Title:	SSQAPPA
	Phase 2 ESA	Revision Number:	01
	198 Potter Hill Road	Revision Date:	October 30, 2024
Site Location:	Westerly, RI	Page:	1 of 1

Document Title: Site Specific Quality Assurance Project Plan Addendum (SSQAPPA)

Lead Organization: Groundwater & Environmental Services, Inc.

Preparer's Name and Organizational Affiliation: Scott Harding, PE, Nobis Engineering, Inc.

Preparer's Address and Telephone Number: 18 Chenell Drive, Concord, NH 03301

603-724-6235

Preparation Date: August 30, 2024

Lead Organization's Project Manager:

10/30/2024

Signature/Date

Joel Walcott, PE / Groundwater & Environmental Services, Inc.

Printed Name/Organization

Lead Organization's Project QA Officer:

10/30/2024

Signature/Date

Richard Evans, PE / Groundwater & Environmental Services, Inc.

Printed Name/Organization

Approval Signatures:

McKeown, Amy Jean Digitally signed by McKeown, Amy Jean Date: 2024.10.31 09:04:50 -04'00'

Signature/Date

Amy Jean McKeown / US EPA Region 1

Printed Name/Organization

Project Officer

Approval Authority

ELISE MCNALLY Digitally signed by ELISE MCNALLY Date: 2024.10.30 11:31:19 -04'00'

Signature/Date

Elise McNally, Ph.D / US EPA Region 1

Printed Name/Organization

QA Reviewer

Approval Authority

TABLE OF CONTENTS
SITE-SPECIFIC
QUALITY ASSURANCE PROJECT PLAN ADDENDUM
PHASE 2 ENVIRONMENTAL SITE ASSESSMENT
POTTER HILL MILL
198 POTTER HILL ROAD
WESTERLY, RHODE ISLAND

TABLES

FIGURES

APPENDIX

1.0 INTRODUCTION

This Site-Specific Quality Assurance Project Plan Addendum (SSQAPPA) was prepared by Nobis Engineering, doing business as Nobis-Group® (Nobis) on behalf of Groundwater and Environmental Service, Inc. (GES), for the Town of Westerly, Rhode Island (RI), for the former Potter Hill Mill located at 198 Potter Hill Road in Westerly, RI (the 'Site'). This work will be completed under GES' agreement with the Rhode Island Department of Environmental Management (RIDEM), Award #3891400, PO# 3905216.

This SSQAPPA addresses the quality procedures for completion of a Phase 2 Site Assessment at the Potter Hill Mill Site, located at 198 Potter Hill Road in Westerly, Rhode Island. The Site is identified as RIDEM Site #SR-38-1074. A Site Locus Plan is included as **Figure 1**. Pertinent site features are depicted on **Figure 2**.

The purpose of this SSQAPPA is to evaluate the presence and extent of urban fill, potential hazardous substances, combustion byproducts, metals, coal, coal ash, chlorinated volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), petroleum hydrocarbons, and metals associated with historical operations at the Site.

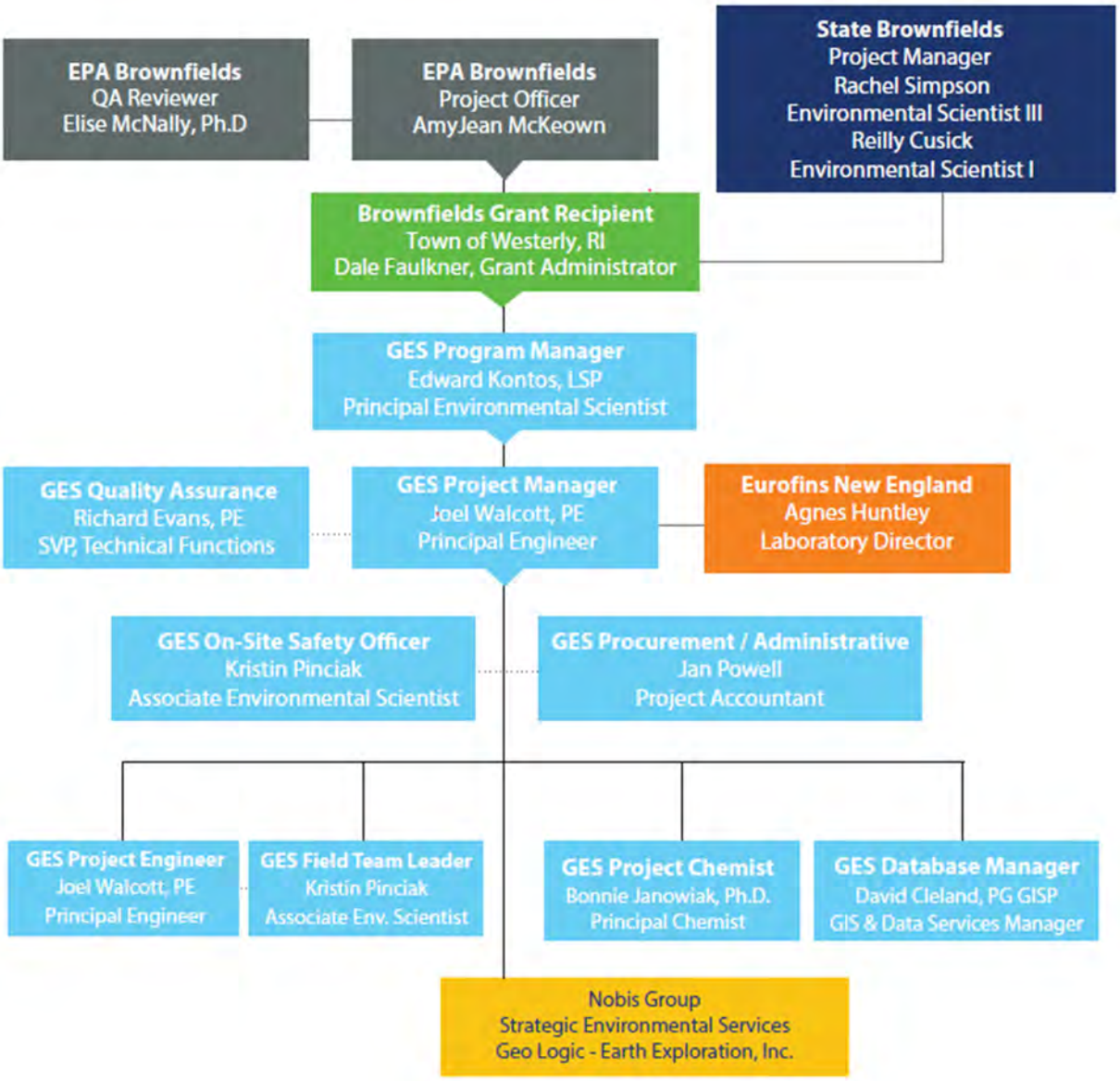
This SSQAPPA is intended to append to and incorporate by reference the procedures and quality control measures detailed in the Brownfields Generic Quality Assurance Project Plan, Revision 1 (QA #24048) prepared by GES and approved by the Environmental Protection Agency (EPA) – New England, Region 1 on April 2, 2024. This submittal was prepared using the *Final EPA-New England Region I Planning and Documenting Brownfields Projects; Generic Quality Assurance Project Plans, and Site-Specific QAPP Addendum, March 2009* (Brownfields QAPP Guidance) and the *EPA's Brownfields Grant Recipients' Road Map to Understanding Quality Assurance Project Plans, April 2020*.

The work described herein has been developed in general accordance with the EPA – *New England, Region 1 Planning and Documenting Brownfields Projects Generic Quality Assurance Project Plans and Site Specific QAPP Addenda*, dated March 2009 (EPA-NE, 2009). This SSQAPPA document was developed based on available guidance documents from the U.S. EPA, RIDEM and information provided by the selected laboratories and subcontractors.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITY

This project team represents the individuals responsible for the stated tasks but is subject to change. Rachel Simpson will be the Project Manager for RIDEM and Amy Jean McKeown is the EPA Project Officer. Hannah Pallein is the GES Project Manager and Richard Evans is the Quality Assurance Manager. Joel Walcott is the licensed professional engineer for the project. Kristin Pinciak (and other qualified staff members) will be responsible for the implementation of field activities as the Field Operations Leader (FOL).

Project organization and responsibility shall be as shown on the following page.



Legend

- **EPA:** U.S. Environmental Protection Agency
- **State:** Rhode Island Department of Environmental Management
- **Grant Recipient**
- **Environmental Contractor:** Groundwater & Environmental Services, Inc.
- **Subcontractors**
- **Laboratory Services**

Eurofins Analytical Laboratory, located in North Kingstown, RI will perform soil and groundwater analyses for total petroleum hydrocarbons (TPH), VOCs, SVOCs, PCBs, and Metals.

3.0 PROBLEM DEFINITION

The Site is located at 198 Potter Hill Road in Westerly, Washington County, Rhode Island and is comprised of a loosely rectangular-shaped parcel of land, approximately 4.55 acres in size. The Site is located approximately 170 feet west of the intersection of Potter Hill Road and River Road, and is identified by the Town of Westerly, RI as Map 8 Block 23. The Site is currently owned by the Town of Westerly, zoned "RR-60," defined as Rural Residential within a minimum size lot of 60,000 square-feet. Based on Site reconnaissance completed on July 1, 2024, the Site is a vacant, overgrown parcel of land that consists of several dilapidated buildings, debris piles and abandoned textile equipment. A dam across the Pawcatuck River located to the east of the Site channels river water onto the Site via a network of channels (raceway). The Town of Westerly ultimately intends to redevelop the property for potential public/recreational use

GES completed a Phase I Environmental Site Assessment (ESA) for the Town of Westerly in 2024. Reasonable efforts were made during this assessment of potential Recognized Environmental Concerns (RECs). Reasonable efforts are limited to information gained from visual observation of largely unobstructed areas, inaccessible buildings during Site reconnaissance, and recorded database information held in public record. Such methods may not identify subsurface equipment that may have been hidden from view due to dense vegetative cover, paving, construction, debris pile storage or incorrect information from sources utilized. Based on the findings of the Phase I ESA, a Phase II ESA was requested.

3.1 Site History

Based on available records it appears that Site was first developed in the Mid 1800s as a woolen mill. The Site was used for the production of wool textiles until the early 1960s. The Site appears to have been vacant since that time. Entities that have operated the Site include the Swift River Woolen Company, Westerly Woolen Company, Potter Hill Woolen Company and the Pawtucket Woolen Mills. Currently, the site consists of several dilapidated structures that are not accessible due to debris and unsafe conditions. Numerous investigations have been completed at the Site. A detailed summary of the previous investigations are included the in the GES Phase I ESA dated July 31, 2024.

<u>Historic Groundwater Investigations</u>
In October 2006, to evaluate groundwater quality, two borings (B-1 and B-2) were completed as one-inch diameter groundwater monitoring wells identified as MW-1 and MW-2, respectively. These wells were installed west/northwest of the former Site buildings in the eastern portion of the property. Both monitoring wells were installed to approximately 15 feet below grade (fbg), and were completed with 10 feet of screen. Groundwater samples were collected from MW-1 and MW-2 in October 2006 for analysis of RCRA 8 metals and polycyclic aromatic hydrocarbons (PAHs). The analytical results indicated that barium was detected in both wells, at concentrations below the RIDEM GA Groundwater Objective (GO). Other metals and PAHs were not detected at concentrations above the laboratory reporting limits or applicable RIDEM GA GOs.

In November 2007, three soil borings, B-3, B-4 and B-5, were completed as monitoring wells MW-3, MW-4 and MW-5, respectively. Geoprobe refusal was encountered during the advancement of the

three boring locations, at depths ranging from 18.5 fbg (MW-5) to 33 fbg (MW-4). The monitoring wells were completed as one-inch diameter wells with 10 feet of screen. MW-3 was installed to 22 fbg, MW-4 installed to 33 fbg, and MW-5 installed to 18.5 fbg. Groundwater samples were collected from MW-1 through MW-5 in November 2007 and submitted for laboratory analysis of RCRA 8, PAHs. And/or volatile organic compounds (VOCs). The analytical results indicated the presence of metals (copper, nickel and zinc) at concentrations below the associated RIDEM GA GOs. Other metals and PAHs were not detected at concentrations above laboratory reporting limits or applicable RIDEM GA GOs. Methyl tert-butyl ether (MTBE) was detected in MW-4 only, at a concentration below the RIDEM GA GO.

Historic Soil and Sediment Evaluations

Numerous soil and sediment samples were historically collected at the Site. The analytical results indicated that soil near the former Site buildings was impacted with metals and PAHs at concentrations greater than the RIDEM Residential Direct Exposure Criteria (RDEC). In late 2007, 14 sediment samples were collected from along the Pawcatuck River, at points where piping or discharge features were observed from the mill buildings. All samples were collected from 0-1 fbg and submitted for laboratory analysis of VOCs, SVOCs and the 16 metals referenced in the RIDEM Remediation Regulations. Sediment analytical results were compared against nationally published sediment criteria. If the guidelines did not have a criterion, then the RIDEM RDEC was used for comparison. Metals including beryllium, copper, chromium, lead and zinc were detected in sediment samples at concentrations greater than the sediment criteria. SVOCs were detected in sediment samples at concentrations above the sediment criteria or RIDEM RDEC.

3.2 Site Geology

The dominant soil type at the Site is Rippowam. This soil type is poorly drained with slow infiltration rates and layers impeding downward movement of water or moderate fines and fine textures. According to the *Bedrock Geologic Map of Rhode Island,* the bedrock stratigraphic unit underling the Site is a portion of the Sterling Igneous Suite series mapped as "Zsgg," and defined as pale-pink to gray medium-grained granite gneiss from the Ediacaran Period of the Neoproterozoic Era.

3.3 Site Hydrogeology

Based on the review of the USGS topographical map and previous environmental assessment, the groundwater flow direction at the Site is anticipated to be generally to the east/northeast. According to the *Summary of Rhode Island Groundwater Classification and Groundwater Standards* (RIDEM, 2009), groundwater at the property is classified as "GAA". Groundwater within GAA-classified areas is presumed suitable for human consumption without treatment, and is located in one of the areas defined by RIDEM, either within the state's major stratified drift aquifers capable of serving as a significant source for a public water supply, or is a wellhead protection area for public water system community water supply wells.

3.4 Surface Water

A dam is present across the Pawcatuck River, located to the east of the Site, which channels river water onto the Site via a raceway. There were no other surface water bodies observed on the Site, however, much of the parcel was obstructed from observation due to heavy vegetation and overgrowth. The closest surface water body in the vicinity of the Site is the Pawcatuck River, which

abuts the Site to the east and north. The Pawcatuck River eventually discharges into the Long Island Sound approximately 7 miles to the southwest of the Site. According to the RIDEM Environmental Resource Map, the surface water quality of the Pawcatuck River is classified as "B." Class "B" waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic values. The Pawcatuck River is currently listed on the 303(d) list for impaired waters (Category 5). The Clean Water Act section 303(d) defines impaired waters as a waterbody that is either impaired or threatened needing a total maximum daily load (TMDL) restoration plan. The Pawcatuck River is currently impaired by enterococcus bacteria (e. Coli) as of 2022.

3.5 Contaminants of Concern (COCs)

The primary COCs at the Site are petroleum hydrocarbons, VOCs, SVOCs, PCBs, and Metals in both soil and groundwater.

3.6 Proposed Assessment Activities

Based on the history of the Site coupled with observations by GES and analytical results during Site visits and investigations completed to date, GES will complete a Supplemental Site Assessment (SSA) to delineate the extent of TPH, VOCs, SVOCs, PCBs, and Metals in groundwater and soil, and to evaluate the suspected source areas for potential impacts to surrounding media. The scope of work to complete the assessment is as follows:

1) Health and Safety Plan and Utility Clearance –GES will prepare a Site-specific health and safety plan (HASP) for all on-Site activities in accordance with Occupational Safety and Health Administration (OSHA) requirements. GES will visit the Site to confirm access to areas proposed for subsurface investigation and to pre-mark proposed areas of subsurface investigation to satisfy the requirements for DigSafe utility clearance.

2) Monitoring Well Installations – GES will subcontract with a Rhode Island licensed drilling contractor to complete a drilling program to install eight (8) overburden monitoring wells (MW-101 through MW-108).

3) Soil Evaluation – GES will subcontract with a Rhode Island licensed drilling contractor to complete a drilling program comprised of installation of eight (8) soil borings and eight (8) additional borings that will be completed as monitoring wells. An anticipated total of twenty-eight (28) soil samples will be collected during the boring/well installation program for laboratory analysis.

4) Groundwater Sample Collection – GES will collect groundwater samples from each of the eight (8) Site wells. Groundwater sampling will be performed in accordance with EPA's Low Flow/Low Stress (low flow) purging and sampling methodology. Groundwater samples will be submitted for laboratory analysis of VOCs, SVOCs, PCBs, Total PP13 Metals, and TPH-DRO/GRO.

5) Phase 2 Report, RAWP and ABCA - GES will prepare a Phase II Report which will include a summary of the field activities completed, a soil and groundwater laboratory data evaluation,

a Site hydrogeologic assessment and discussion including assessment of subsurface stratigraphy and distribution of contaminants of concern. The Report will also discuss groundwater flow directions and potential impact to nearby receptors, if any, and will include GES's recommendations for additional assessment and/or remediation. The report will also include an Analysis of Brownfield Cleanup Alternatives (ABCA) and Remedial Action Work Plan (RAWP).

4.0 PROJECT DESCRIPTION AND TIMELINE

The primary goal of the current phase of work is to identify potential receptors to soil and groundwater contamination related to Site impacts and to delineate/evaluate the extent of contamination in soil and groundwater at the Site. The objective will be accomplished by installing monitoring wells and collecting additional groundwater samples for laboratory analysis, and completing soil borings and soil sample collection in the suspected contaminated areas.

The following sections include a description of the Project and the Timeline to complete the assessment activities.

4.1 Project Description

GES proposes to complete the following tasks:

- Project Planning – Preparation of the SSQAPPA;
- HASP – Preparation of the Site-Specific HASP and utility clearance;
- Monitoring Well Installations – Installation of eight (8) groundwater monitoring wells on-Site;
- Soil Evaluation – Advancement of eight (8) soil borings, eight (8) monitoring wells and the collection of soil samples for laboratory analysis;
- Groundwater Monitoring – Conduct one round of groundwater sampling; and
- Report Preparation – Summarize and evaluate data; and prepare the Phase 2 Report.

Media sampling will be conducted in accordance with the sampling design outlined in **Section 5.0**. Soil and groundwater laboratory analytical results collected during the course of this study will be compared with applicable RIDEM standards to assess potential risks to human health and the environment associated with suspected COCs. Groundwater and soil results will be compared to RIDEM Title 250 – Department of Environmental Management, Part 1 – Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, December 2021.

4.1.1 Health and Safety Plan and Utility Clearance

Prior to conducting Site work, GES will prepare a Site-specific HASP for all on-Site activities in accordance with OSHA requirements.

GES will visit the Site to confirm access to areas proposed for subsurface investigation and to pre-mark the Site to satisfy the requirements for DigSafe utility clearance. GES will notify DigSafe of the subsurface activities at least three (3) business days prior to commencement of drilling.

4.1.2 Monitoring Well Installations

GES will subcontract with a Rhode Island licensed drilling contractor to complete a drilling program to install eight (8) overburden monitoring wells (MW-101 through MW-108). Monitoring well locations are anticipated to be positioned on property owned by the Town or within Town rights-of-way. Refer to **Figure 2** for proposed monitoring well locations.

Eight overburden borings (to be completed as wells, MW-101 through MW-108) will be performed using geoprobe drilling methods to depths of approximately 15 feet below ground surface (bgs). Two soil samples will be collected from each boring except for MW-107, which will only have one sample as discussed below. GES's field representative will screen soil for total organic vapors using a photoionization detector (PID) equipped with a 10.6 electron-Volt lamp, review soil samples for visual classification purposes, and prepare a boring log for each test boring.

Subsequent to completion of the MW-101 through MW-108 test borings, each boring will be converted to a groundwater monitoring well. Each monitoring well will be constructed using 2-inch polyvinyl chloride (PVC) with its lowermost section consisting of a 0.010-inch slotted well screen. The monitoring wells are anticipated to be installed to maximum depths of 15 feet bgs. The boring annulus for each monitoring well will be backfilled with silica sand and sealed above the screened portion of the monitoring well with bentonite clay. The monitoring wells will be completed via 6-inch, flush-mount steel road boxes set in concrete at surface grade.

Once monitoring well installation is complete, the monitoring wells will be developed using a surge block and inertial pump or using dedicated groundwater sampling bailers. A wellhead location and elevation survey of each newly installed monitoring well will be completed to establish a common benchmark datum for the Site well network. Pertinent Site features including the boring/monitoring well locations and the Site-specific benchmark will be depicted on a plan and the newly acquired well elevations will be provided within a summary table.

4.1.3 Soil Evaluation

In addition to the eight (8) borings to be completed as monitoring wells, GES will subcontract with a Rhode Island licensed drilling contractor to complete a drilling program comprised of installation of eight (8) additional soil borings and collection of soil samples.

Soil screening with a PID will be performed continuously during soil boring advancement from the ground surface to the terminal depths of the borings. The geoprobe sampling sleeves will be broken into depth intervals for screening based on visual observations and the amount of soil recovered in the sleeves (typically two samples for greater than 50% recovery and one sample for less than 50% recovery).

A summary of the soil sampling program is summarized below:

- Borings SB-1 through SB-5: two soil samples from each location for Site-wide evaluation associated with urban fill and potential hazardous substances.

- MW-101 through MW-105: two soil samples from each location for Site-wide evaluation associated with urban fill and potential hazardous substances.

- Borings SB-6 through SB-8: one soil sample from each location to evaluate potential urban fill, and former building materials. SB-8 will be used to evaluate the areas of coal, coal ash and automobile debris.

- MW-106 through MW-108: one to two soil samples from each location to evaluate coal areas and the former oil house building, former engine room and potential solvent use. Only one soil sample is needed at the MW-107 location since it is associated with the former oil house building, and visual/olfactory evidence can be used to select the appropriate sample to evaluate potential petroleum impacts.

The soil samples will be submitted to Eurofins for analysis of the aforementioned COCs. The samples will be packed in ice and submitted to Eurofins under standard chain-of-custody protocols. Details of the soil sampling plan are included in **Table 1**. Information regarding analytical methods and quality assurance samples and methods are discussed in **Section 5.0**.

4.1.4 Groundwater Monitoring

After a minimum of 72 hours following the well installations, GES will visit the Site to collect groundwater samples from all eight (8) monitoring wells in the Site well network. Groundwater levels will be measured at each well location prior to the collection of groundwater samples. Groundwater samples will be collected using EPA low-flow/low-stress sampling methods. Refer to **Figure 2** for a Site Plan depicting the Site monitoring well network and groundwater sampling locations.

A summary of the groundwater sampling program is summarized below:

- MW-101 through MW-105: one water sample from each well, for Site-wide evaluation associated with urban fill and potential hazardous substances.

- MW-106 through MW-108: one water sample from each well to evaluate coal areas, the former oil house building, former engine room and potential solvent use.

Details of the groundwater sampling plan are included on **Table 2**. Each groundwater sample collected will be placed in pre-preserved laboratory supplied containers, transported on ice, and delivered under proper chain-of-custody procedures to Eurofins for analysis of VOCs, SVOCs, PCBs, TPH-DRO/GRO, and Total PP13 Metals. Details regarding analytical methods and quality assurance samples and methods are discussed in **Section 5.0**.

4.1.5 Phase 2 Report

Following the completion of field activities and receipt of analytical data, GES will prepare a Phase 2 SSA Report. The report will include a summary of the field activities completed, a soil and groundwater laboratory data evaluation, a Site hydrogeologic assessment and discussion including assessment of subsurface stratigraphy and distribution of COCs. The SSA report will also discuss groundwater flow directions and potential impacts to nearby receptors, if any, and will also include our recommendations. Laboratory data will be summarized in tables, and sample locations and

additional conceptual information will be shown on figures. A discussion of QA/QC, including data validation, will also be included.

A draft report will be prepared in an electronic PDF for distribution or review to the EPA, RIDEM, and other stakeholders for review and comment. Once stakeholder comments are addressed, the final report will be prepared and provided to stakeholders as a PDF.

4.2 Project Timeline

The anticipated schedule for this investigation is summarized in the attached **Table 3**.

5.0 SAMPLING DESIGN

Tables 1 and 2 provide supporting information regarding the number of samples, analytical methodology, SOP references, quality assurance (QA) and quality control (QC) samples, sample containers and preservative requirements, and sample holding times. The following section describes the groundwater sampling design. **Figure 2** depicts the soil sample locations, monitoring well installation and groundwater sampling locations.

5.1 Soil Analyses

Based on the findings of previous investigations and the objectives of the current assessment, laboratory analysis of soil will include the following method:

- VOCs by EPA 8260
- SVOCs by EPA 8270
- PCBs by SW846 8082A
- Metals by ICP SW846 6010D/7471
- TPH-DRO/GRO by SW846 8015D Modified

The twenty-eight (28) soil samples will be collected during one (1) sampling event. Three (3) field duplicates, one (1) trip blank, and three (3) samples that will be identified as matrix spike/matrix spike duplicate (MS/MSD) will be submitted to Eurofins for analysis.

5.2 Groundwater Analyses

Based on the findings of previous investigations and the objectives of the current assessment, laboratory analysis of groundwater will include the following methods:

- VOCs by EPA 8260
- SVOCs by EPA 8270
- PCBs by SW846 8082A
- Metals by ICP SW846 6010D/7470
- TPH-DRO/GRO by SW846 8015D Modified

The eight (8) groundwater samples will be collected during one (1) sampling event. One (1) trip blank, one (1) field duplicate, and one (1) MS/MSD will be submitted to Eurofins for analysis.

6.0 SAMPLING AND ANALYTICAL METHODS REQUIREMENTS

Table 4 summarizes the sampling design and number of samples. **Table 5** summarizes the sampling requirements including containers, preservation, and maximum holding times. **Table 7** summarizes the relevant field procedures for the investigation at the Site as well as the laboratory analytical methods and procedures for the proposed laboratory analyses. The SOPs for all field procedures and anticipated laboratory analytical methods were included in GES Brownfields Generic QAPP, Revision 1 (QA#24048). All calibration procedures, field documentation, QA/QC samples, data management, assessments, project reports, and data usability issues are summarized in the Generic QAPP text, tables, and SOPs. Eurofins New England has been selected to provide laboratory services for this project, and their laboratory SOPs are included **Appendix 1**.

6.1 Reference Limits

Table 6 provides project action limits (PALs), laboratory reporting limits (RLs) and method detection limits (MDLs) for applicable analytes. Eurofins will perform the soil and groundwater analyses for samples collected for this Site. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition and its updates (EPA, 2014) or *Standard Methods for the Examination of Water and Wastewater* (American Public Health Association [APHA], 2005) procedures will be performed for the testing. Final laboratory reports will include appropriate references to the procedures followed.

6.2 Data Usability and Validation

Calibration procedures, field documentation, QA/QC samples, data management, assessments, project reports, and data usability issues are summarized in the Generic QAPP text, tables, and SOPs.

The analytical data will be reviewed to a modified Tier 1 Stage 2A in accordance with the *EPA-New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures,* (EPA-NE, 2020). This review includes a completeness check plus a review of laboratory and field QC sample compliance (laboratory control samples, field duplicates, and surrogates). The laboratory data packages, and data review comments will be included in the final project data deliverable.

7.0 REFERENCES

EPA–NE. 2009. Region I Planning and Documenting Brownfields Projects Generic Quality Assurance Project Plans and Site Specific QAPP Addenda. March.

EPA-Region I New England. 2020. Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures. September.

GES. 2024. Brownfields Generic Quality Assurance Project Plan, Revision 1, US EPA Region 1, New England. April.

GES, 2024. Phase I Environmental Site Assessment, 198 Potter Hill Road, Westerly, Rhode Island. September.

RIDEM. 2021. Title 250 – Department of Environmental Management, Part 1 – Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases. December.

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TABLES

Table 1

SOIL SAMPLING PLAN

Sample ID	Area of Concern	Constituents of Conern	Total Depth	Sample Depth	Analyses
SB-1	Site Wide Evaluation	Urban Fill & Any Potential Hazardous Substances	15 fbg or Water Table Interface	Sample A: 0-2 fbg Sample B: Highest PID or Visual/Olfatory Evidence of Impacts	TPH, VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals
SB-2					
SB-3					
SB-4					
SB-5					
MW-101	Site Wide Evaluation	Urban Fill & Any Potential Hazardous Substances	15 fbg	Sample A: 0-2 fbg Sample B: Highest PID or Visual/Olfatory Evidence of Impacts	TPH, VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals
MW-102					
MW-103					
MW-104					
MW-105					
SB-6	Potential Urban Fill and Former Building Materials	Urban Fill and Combustion Byproducts	10 fbg or Water Table Interface	Interval with Most Visual/Olfactory Evidence of Impacts	TPH, SVOCs 8270, PCBs, Total PP13 Metals
SB-7	Potential Urban Fill and Historic Soil Sampling Data	Urban Fill, Metals and Combustion Byproducts	10 fbg or Water Table Interface	Interval with Prior Exceedances of Visual/Olfactory Evidence	TPH, SVOCs 8270, Total PP13 Metals
SB-8	Area of Coal / Coal Ash and Auto Debris Pile	Coal Combustion Byproducts	5 fbg	Interval with Most Visual/Olfactory Evidence of Impacts	TPH, SVOCs 8270, Total PP13 Metals
MW-106	Area of Coal / Coal Ash and Potential Solvent Use	Coal Combustion Byproducts and Chlorinated VOCs	15 fbg	Sample A: 0-2 fbg Sample B: Highest PID or Water Table Interface	TPH, VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals
MW-107	Former Oil House Building	Petroleum Constituents	15 fbg	Highest PID or Water Table Interface	TPH, VOCs 8260, SVOCs 8270
MW-108	Former Engine Room Building, Coal Area and Potential Solvent Use	Petroleum Constituents, Coal Combustion Byproducts and Chlorinated VOCs	15 fbg	Sample A: 0-2 fbg Sample B: Highest PID or Water Table Interface	TPH, VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals

Notes:
1 Duplicate collected per every 10 samples
1 Trip Blank submitted per every sample set

Table 2

GROUNDWATER SAMPLING PLAN

Sample ID	Area of Concern	Constituents of Conern	Sample Methodology	Analyses
MW-101	Site Wide Evaluation	Urban Fill & Any Potential Hazardous Substances	Low Flow	VOCs, Total PP13 Metals
MW-102				
MW-103				
MW-104				
MW-105				
MW-106	Area of Coal / Coal Ash and Potential Solvent Use	Coal Combustion Byproducts and Chlorinated VOCs	Low Flow	VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals
MW-107	Former Oil House Building	Petroleum Constituents	Low Flow	TPH-DRO/GRO, VOCs 8260, SVOCs 8270
MW-108	Former Engine Room Building, Coal Area and Potential Solvent Use	Petroleum Constituents, Coal Combustion Byproducts and Chlorinated VOCs	Low Flow	VOCs 8260, SVOCs 8270, PCBs, Total PP13 Metals

Notes:
1 Duplicate collected per every 10 samples
1 Trip Blank submitted per every sample set

TABLE 3
PROJECT SCHEDULE
Potter Hill Mill
Westerly, RI

Activities	Project Start	Dates (MM/DD/YY)	Project End
Complete Draft Site-Specific FTWP/QAPPA	8/30/2024		
EPA/RIDEM review of Draft FTWP/QAPPA	9/3/2024 - 9/19/2024		
Complete Final Site-Specific FTWP/QAPPA	9/19/2024 - 10/29/2024		
Pre-site Investigation Public Notice	11/12/2024 - 11/26/2024		
Site Investigations	12/4/2024 - 12/31/2024		
Phase II ESA Report & Haz Mat Release Notification Form	Feb-25		
Post-Site Investigation Public Notice	Mar-25		
Informational Session	Mar-25		
RIDEM Informational Meeting - Phase II Findings and Preferred Remedial Alternatives	Mar-25 - Apr-25		
RAWP/ABCA	Apr-25 - May-25		

Note:
This project timeline is based on anticipated time frames for completion of tasks by Groundwater & Environmental Services, Inc., outside contractors, and regulatory agencies, and is subject to change.

TABLE 4
SAMPLING DESIGN
Potter Hill Mill
Westerly, RI

Number of Samples	Location or Matrix	Parameters	Analytical Method	QA/QC Samples
SUBSURFACE SOIL				
28	Soil: SB-1, SB-2, SB-3, SB-4, SB-5, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-107, MW-108 (2 per soil boring (MW-107 only having 1) / 13 borings)	VOCs	EPA 8260	3 FDup, 1 MB, 1 LCS, 3 MS/MSD
	Soil (2 per soil boring (with SB-6, SB-7, SB-8, and MW-107 only having 1 each/ 16 borings)	SVOCs	EPA 8270	3 FDup, 1 MB, 1 LCS, 3 MS/MSD
	Soil: SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-108 (2 per soil boring (SB-6 only having 1)/13 borings)	PCBs	SW846 8082A	1 MB, 1 LCS/LCSD, 1 LDup, 1 MS/MSD
	Soil: SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-108 (2 per soil boring (with SB-6, SB-7, and SB-8 only having 1 each/ 15 borings)	Total PP13 Metals	SW846 6010D/7471	1 MB, 1 LCS/LCSD, 3 Dup, 3 MS/MSD
	Soil (2 per soil boring (with SB-6, SB-7, SB-8, and MW-107 only having 1 each/ 16 borings)	TPH	8015D Modified	1 MB, 1 LCS/LCSD, 3 LDup, 3 MS/MSD
GROUNDWATER				
8	Groundwater: all wells (1 per monitoring well)	VOCs	EPA 8260	1 FDup, 1 MB, 1 LCS, 1 MS/MSD
	Groundwater: MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-108 (1 at each monitoring well)	Total PP13 Metals	SW846 6010D/7470	1 MB, 1 LCS/LCSD, 1 Dup, 1 MS/MSD
	Groundwater MW-106, MW-108 (1 at each monitoring well)	SVOCs	EPA 8270	1 FDup, 1 MB, 1 LCS, 1 MS/MSD
	Groundwater MW-106, MW-108 (1 at each monitoring well)	PCBs	SW846 8082A	1 MB, 1 LCS/LCSD, 1 LDup, 1 MS/MSD
	Groundwater MW-107 (1 per monitoring well)	TPH-DRO/GRO	8015D Modified	1 MB, 1 LCS/LCSD, 1 LDup, 1 MS/MSD

Notes:
1. Number of samples are estimated.
2. Number of samples of each type and QA/QC samples are additive. “FDup” indicates field duplicate sample. “TB” indicates trip blank. "NP" none planned. "FB" indicates Field Blank. "MS/MSD" indicates matrix QC.

TABLE 5
SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIME BY MATRIX AND ANALYSIS
Potter Hill Mill
Westerly, RI

Parameter	Matrix (Type of samples collected)	Total Number of Samples (include field QC)	Analytical Method/SOP	Sampling SOP	Containers (Number, size, and type)	Preservation Requirements (temperature, light, chemical)	Maximum Holding Time (preparation / analysis)
Subsurface and Groundwater Investigation Samples							
GC/MS VOCs	Soil	25 + 3 Fdup + 1 MB + 3 MS/MSD	EPA 8260	Geoprobe	3 x 40 mL VOA vials; 1 x 8-oz. jar for % moisture	1 vial 5 mL methanol, 2 vials 5 mL DI water or 5 mL sodium bisulfate solution. Cool to < 4°C	14 days; freeze or analyze DI water vials within 48 hrs
	Groundwater / Aqueous	8 + 1 Fdup + 1 MB + 1 MS/MSD	EPA 8260	Low-Flow GW Sampling; InSitu SmarTroll Meter Calibration; Turbidmeter Calibration	3 x 40 mL VOA vials	HCL pH <2; cool to 4°C; no headspace	14 days
GC/MS SVOCs	Soil	28 + 3 Fdup + 1 MB + 3 MS/MSD	EPA 8270	Geoprobe	1 x 8-oz. amber glass jar	Cool to < 4°C	14 days to extraction; 40 days from extraction to analysis
	Groundwater / Aqueous	2 + 1 Fdup + 1 MB + 1 MS/MSD	EPA 8270	Low-Flow GW Sampling; InSitu SmarTroll Meter Calibration; Turbidmeter Calibration	2 x 1 liter amber glass	Cool to 4°C	7 days to extraction; 40 days from extraction to analysis
PCBs	Soil	15 + 1 MB + 2 MS/MSD	SW846 8082A	Geoprobe	1 x 8 oz. amber glass far	Cool to 4°C	14 days to extraction; 40 days from extraction to analysis
	Groundwater / Aqueous	2 + 1 MB + 1 MS/MSD	SW846 8082A	Low-Flow GW Sampling; InSitu SmarTroll Meter Calibration; Turbidmeter Calibration	2 x 1 liter amber glass jar	Cool to 4°C	7 days to extraction; 40 days from extraction to analysis
Total PP13 Metals	Soil	27 + 1 LCS/LCSD + 3 Dup + 3 MS/MSD	SW846 6010D/7471	Geoprobe	1 x 8 oz. amber glass jar	Cool to 4°C	180 days (metals); 28 days (mercury)
	Groundwater / Aqueous	7 + 1 LCS/LCSD + 1 Dup + 1 MS/MSD	SW846 6010D/7470	Low-Flow GW Sampling; InSitu SmarTroll Meter Calibration; Turbidmeter Calibration	1 250 mL polypropylene bottle	HNO3 to pH< 2; cool to 4°C	180 days (metals); 28 days (mercury)

TABLE 5
SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIME BY MATRIX AND ANALYSIS
Potter Hill Mill
Westerly, RI

Parameter	Matrix (Type of samples collected)	Total Number of Samples (include field QC)	Analytical Method/SOP	Sampling SOP	Containers (Number, size, and type)	Preservation Requirements (temperature, light, chemical)	Maximum Holding Time (preparation / analysis)
Parameter	**Matrix (Type of samples collected)**	**Total Number of Samples (include field QC)**	**Analytical Method/SOP**	**Sampling SOP**	**Containers (Number, size, and type)**	**Preservation Requirements (temperature, light, chemical)**	**Maximum Holding Time (preparation / analysis)**
TPH-DRO/GRO	Soil	28 + 1 MB + 1 LCS/LCSD + 3 Ldup + 3 MS/MSD	8015D Modified	Geoprobe	GRO: 3 x 40 mL VOA vials DRO: 1 x 8 oz. amber glass jar	GRO: 15 ml methanol; Cool to < 4°C DRO: cool to 4°C	GRO: 14 days DRO: Extract within 14 days; analyze within 40 days of extraction
	Groundwater / Aqueous	1 + 1 MB + 1 LCS/LCSD + 1 Ldup + 1 MS/MSD	8015D Modified	Low-Flow GW Sampling; InSitu SmarTroll Meter Calibration; Turbidmeter Calibration	GRO: 3 x 40 mL VOA vials DRO: 2 x 1 liter amber glass jar	GRO: HCL pH <2; cool to 4°C; no headspace DRO: Cool to 4°C	GRO: 14 days DRO: Extract within 14 days; analyzed within 40 days of extraction

Notes:
1. Number of samples of each type and QA/QC samples are additive. “Fdup” indicates field duplicate sample. “TB” indicates trip blank. "FB" indicates field blank sample, "MB" indicated mean blank sample.
2. Laboratory SOP references are avaliable upon request. Refer to Appendix A of the Program QAPP or laboratory SOPs.
3. Note that not all analytical tests are performed for each sample collected. Refer to table 2 for total list of sample locations and associated test methods.

Table 6
Project Action Limits, RLs and MDLs
Potter Hill Mill
Westerly, RI

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	GA Leach Soil[2] (mg/kg)	Res Direct Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
VOCs								
1,1,2-Trichlorotrifluoroethane (Freon 113)	76-13-1				1.00	5.00	0.202	3.26
Acetone	67-64-1			7,800	10.0	50.0	0.902	11.2
Acrylonitrile	107-13-1				1.00	5.00	0.356	3.00
Benzene	71-43-2	0.005	0.2	2.5	1.00	5.00	0.250	3.34
Bromobenzene	108-86-1				1.00	5.00	0.403	3.33
Bromochloromethane	74-97-5				1.00	5.00	0.391	2.84
Bromodichloromethane	75-27-4			10	0.500	5.00	0.334	3.67
Bromoform	75-25-2			81	1.00	5.00	0.454	3.82
Bromomethane	74-83-9			0.8	2.00	10.0	0.627	6.23
2-Butanone (MEK)	78-93-3				2.00	10.0	0.577	3.98
n-Butylbenzene	104-51-8				1.00	10.0	0.450	5.36
sec-Butylbenzene	135-98-8				1.00	5.00	0.401	4.03
tert-Butylbenzene	98-06-6				1.00	5.00	0.400	3.94
Carbon disulfide	75-15-0				2.00	10.0	0.438	3.51
Carbon tetrachloride	56-23-5	0.005	0.4	1.5	1.00	5.00	0.246	3.15
Chlorobenzene	108-90-7	0.1	3.2	210	1.00	5.00	0.417	3.66
Chloroethane	75-00-3				2.00	10.0	0.405	3.67
Chloroform	67-66-3			1.2	1.00	5.00	0.297	3.36
Chloromethane	74-87-3				2.00	10.0	0.485	3.84
2-Chlorotoluene	95-49-8				1.00	5.00	0.429	3.98
4-Chlorotoluene	106-43-4				1.00	5.00	0.416	4.34
1,2-Dibromo-3-Chloropropane	96-12-8	0.0002		0.5	2.00	10.0	0.511	4.24
Dibromochloromethane	124-48-1			7.6	0.500	5.00	0.326	3.31
1,2-Dibromoethane (EDB)	106-93-4				0.500	5.00	0.339	3.59
Dibromomethane	74-95-3				1.00	5.00	0.364	2.94
1,2-Dichlorobenzene	95-50-1				1.00	5.00	0.480	4.64
1,3-Dichlorobenzene	541-73-1				1.00	5.00	0.500	4.01
1,4-Dichlorobenzene	106-46-7				1.00	5.00	0.487	4.74
Dichlorodifluoromethane (Freon 12)	75-71-8				2.00	10.0	0.289	2.68
1,1-Dichloroethane	75-34-3	0.005	0.1	920	1.00	5.00	0.362	3.39
1,2-Dichloroethane	107-06-2			0.9	1.00	5.00	0.260	3.37
1,1-Dichloroethene	75-35-4	0.007	0.7	0.2	1.00	5.00	0.344	3.06
cis-1,2-Dichloroethene	156-59-2	0.07	1.7	630	1.00	5.00	0.297	2.89
trans-1,2-Dichloroethene	156-60-5	0.1	3.3	1,100	1.00	5.00	0.188	3.11
1,2-Dichloropropane	78-87-5	0.005	0.1	1.9	1.00	5.00	0.357	3.31
1,3-Dichloropropane	142-28-9				1.00	5.00	0.320	3.82
2,2-Dichloropropane	594-20-7				1.00	5.00	0.488	3.45
1,1-Dichloropropene	563-58-6				1.00	5.00	0.286	3.40
cis-1,3-Dichloropropene	10061-01-5				0.500	5.00	0.300	3.26
trans-1,3-Dichloropropene	10061-02-6				0.500	5.00	0.370	3.80
Ethylbenzene	100-41-4	0.7	27	71	1.00	5.00	0.363	3.57
Hexachlorobutadiene	87-68-3				1.00	10.0	0.236	5.03
2-Hexanone (MBK)	591-78-6				2.00	10.0	0.687	2.94
Isopropylbenzene	98-82-8			27	1.00	5.00	0.376	3.78
4-Isopropyltoluene	99-87-6				1.00	5.00	0.429	4.91
Methyl tert-butyl ether	1634-04-4	0.04	0.9	390	1.00	5.00	0.263	2.88
4-Methyl-2-pentanone (MIBK)	108-10-1				2.00	10.0	0.348	3.23
Methylene Chloride	75-09-2	0.005		45	2.00	10.0	0.535	2.68
Naphthalene	91-20-3				2.00	5.00	0.696	4.52
N-Propylbenzene	103-65-1				1.00	5.00	0.359	4.23
Styrene	100-42-5	0.1	2.9	13	1.00	5.00	0.419	3.87
1,1,1,2-Tetrachloroethane	630-20-6			2.2	1.00	5.00	0.369	3.75
1,1,2,2-Tetrachloroethane	79-34-5			1.3	0.500	5.00	0.457	4.58
Tetrachloroethene	127-18-4	0.005	0.1	12	1.00	5.00	0.364	2.78
Toluene	108-88-3	1	32	190	1.00	5.00	0.283	3.17
1,2,3-Trichlorobenzene	87-61-6				1.00	5.00	0.742	4.22
1,2,4-Trichlorobenzene	120-82-1				1.00	5.00	0.695	4.61
1,3,5-Trichlorobenzene	108-70-3				1.00	5.00	0.536	4.75
1,1,1-Trichloroethane	71-55-6	0.2	11	540	1.00	5.00	0.330	3.41
1,1,2-Trichloroethane	79-00-5	0.005	0.1	3.6	1.00	5.00	0.350	3.77
Trichloroethene	79-01-6	0.005	0.2	13	1.00	5.00	0.364	3.36
Trichlorofluoromethane (Freon 11)	75-69-4				1.00	5.00	0.228	3.82
1,2,3-Trichloropropane	96-18-4				1.00	5.00	0.513	4.44
1,2,4-Trimethylbenzene	95-63-6				1.00	5.00	0.462	4.23
1,3,5-Trimethylbenzene	108-67-8				1.00	5.00	0.446	4.25
Vinyl chloride	75-01-4	0.002	0.3	0.02	1.00	5.00	0.256	3.05
m,p-Xylene	179601-23-1				1.00	5.00	0.779	6.83
o-Xylene	95-47-6				1.00	5.00	0.428	3.65
Xylenes (Total)		10	540	110				
Tetrahydrofuran	109-99-9				2.00	10.0	0.704	2.53
Ethyl ether	60-29-7				1.00	5.00	0.421	2.63
Tert-amyl methyl ether	994-05-8				1.00	5.00	0.260	3.95
Ethyl tert-butyl ether	637-92-3				1.00	5.00	0.293	3.29
di-Isopropyl ether	108-20-3				1.00	5.00	0.260	3.57
tert-Butanol	75-65-0				10.0	100	8.52	26.8
1,4-Dioxane	123-91-1				50.0	100	7.43	31.1
trans-1,4-Dichloro-2-butene	110-57-6				5.00	25.0	0.806	3.69
Ethanol	64-17-5				200	1000	9.08	62.0

Table 6
Project Action Limits, RLs and MDLs
Potter Hill Mill
Westerly, RI

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	Soil[2] (mg/kg)	Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
SVOCs								
1,2,4,5-Tetrachlorobenzene	95-94-3					330		58.7
1,2,4-Trichlorobenzene	120-82-1		140	96		330		75.6
1,2-Dichlorobenzene	95-50-1			510		330		63.6
1,3-Dichlorobenzene	541-73-1			430		330		79.9
1,4-Dichlorobenzene	106-46-7			27		330		77.7
Dichlorobenzene (all isomers)			41					
1-Methylnaphthalene	90-12-0					66.7		56.0
2,4,5-Trichlorophenol	95-95-4			330		330		37.8
2,4,6-Trichlorophenol	88-06-2			58		167		40.8
2,4-Dichlorophenol	120-83-2			30		167		66.5
2,4-Dimethylphenol	105-67-9			1,400		330		48.4
2,4-Dinitrophenol	51-28-5			160		660		86.8
2,4-Dinitrotoluene	121-14-2			0.9		167		39.1
2,6-Dinitrotoluene	606-20-2					167		39.1
2-Chloronaphthalene	91-58-7					330		76.3
2-Chlorophenol	95-57-8					167		68.3
2-Methylnaphthalene	91-57-6					66.7		49.3
2-Methylphenol	95-48-7					330		48.2
2-Nitroaniline	88-74-4					330		31.4
2-Nitrophenol	88-75-5					167		59.3
3 & 4 Methylphenol	15831-10-4					330		62.5
3,3'-Dichlorobenzidine	91-94-1					330		54.5
3-Nitroaniline	99-09-2					330		29.5
4,6-Dinitro-2-methylphenol	534-52-1					330		59.3
4-Bromophenyl phenyl ether	101-55-3					330		37.3
4-Chloro-3-methylphenol	59-50-7					330		64.6
4-Chloroaniline	106-47-8					167		25.3
4-Chlorophenyl phenyl ether	7005-72-3					330		35.3
4-Nitroaniline	100-01-6					167		52.7
4-Nitrophenol	100-02-7					330		115
Acenaphthene	83-32-9					66.7		53.2
Acenaphthylene	208-96-8					66.7		43.8
Aniline	62-53-3					330		25.3
Anthracene	120-12-7					66.7		38.6
Azobenzene/Diphenyldiazene	103-33-3					330		56.3
Benzidine	92-87-5					660		97.7
Benzo[a]anthracene	56-55-3					66.7		37.5
Benzo[a]pyrene	50-32-8	0.0002	240		1	66.7	0.21	47.7
Benzo[b]fluoranthene	205-99-2					66.7		55.3
Benzo[g,h,i]perylene	191-24-2					66.7		52.1
Benzo[k]fluoranthene	207-08-9					66.7		51.9
Benzoic acid	65-85-0					330		227
Benzyl alcohol	100-51-6					330		59.8
Bis(2-chloroethoxy)methane	111-91-1					330		57.4
Bis(2-chloroethyl)ether	111-44-4					167		54.6
bis (2-chloroisopropyl) ether	108-60-1					167		74.3
Bis(2-ethylhexyl) phthalate	117-81-7					167		42.5
Butyl benzyl phthalate	85-68-7					330		33.1
Carbazole	86-74-8					167		43.7
Chrysene	218-01-9					66.7		37.7
Dibenz(a,h)anthracene	53-70-3					66.7		50.9
Dibenzofuran	132-64-9					167		57.8
Diethyl phthalate	84-66-2					330		36.2
Dimethyl phthalate	131-11-3					330		43.0
Di-n-butyl phthalate	84-74-2					330		35.3
Di-n-octyl phthalate	117-84-0					330		54.5
Fluoranthene	206-44-0					66.7		39.1
Fluorene	86-73-7			28		66.7		60.9
Hexachlorobenzene	118-74-1	0.001		0.4	1	167	0.33	46.3
Hexachlorobutadiene	87-68-3			8.2		167		83.3
Hexachlorocyclopentadiene	77-47-4					167		63.8
Hexachloroethane	67-72-1			46		167		65.6
Indeno[1,2,3-cd]pyrene	193-39-5			0.9		66.7		56.6
Isophorone	78-59-1					167		45.7
Naphthalene	91-20-3	0.1	0.8	54	1	66.7	0.23	64.0
Nitrobenzene	98-95-3					167		77.1
N-Nitrosodimethylamine	62-75-9					167		43.8
N-Nitrosodi-n-propylamine	621-64-7					167		66.5
N-Nitrosodiphenylamine	86-30-6					330		42.1
Pentachloronitrobenzene	82-68-8					330		52.1
Pentachlorophenol	87-86-5	0.001	7.1	5.3	4	330	1.4	135
Phenanthrene	85-01-8			40		66.7		37.8
Phenol	108-95-2			6,000		330		68.0
Pyrene	129-00-0			13		66.7		36.8
Pyridine	110-86-1					330		78.1

Table 6
Project Action Limits, RLs and MDLs
Potter Hill Mill
Westerly, RI

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	Soil[2] (mg/kg)	Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
Polychlorinated Biphenyls (PCBs)								
PCB-1016	12674-11-2					20.0		14.4
PCB-1221	11104-28-2					20.0		5.91
PCB-1232	11141-16-5					20.0		5.54
PCB-1242	53469-21-9					20.0		3.16
PCB-1248	12672-29-6					20.0		6.25
PCB-1254	11097-69-1					20.0		15.6
PCB-1260	11096-82-5					20.0		4.30
PCB-1262	37324-23-5					20.0		4.66
PCB-1268	11100-14-4					20.0		4.26
Total PCBs		0.0005	10	10	0.25			
Tetrachloro-m-xylene	877-09-8							

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	Soil[2] (mg/kg)	Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
Metals (ICP)								
Antimony	7440-36-0	0.006	0.05	10	0.0120	5.00	0.00321	0.376
Arsenic	7440-38-2	0.01		7	0.00800	1.50	0.00277	0.190
Beryllium	7440-41-7	0.004	0.03	1.5	0.00400	0.500	0.000560	0.0251
Cadmium	7440-43-9	0.005	0.03	39	0.00500	0.500	0.000710	0.0259
Chromium	7440-47-3	0.1	1.1		0.0100	1.00	0.00185	0.133
Copper	7440-50-8			3,100	0.0100	1.00	0.00461	0.240
Lead	7439-92-1	0.015	0.04	150	0.0150	1.50	0.0124	0.212
Nickel	7440-02-0	0.1	1	1,000	0.0100	1.00	0.00173	0.115
Selenium	7782-49-2	0.05	0.6	390	0.0300	1.50	0.00830	0.286
Silver	7440-22-4			200	0.0100	1.50	0.00124	0.162
Thallium	7440-28-0	0.002	0.005	5.5	0.0100	3.00	0.00419	1.10
Zinc	7440-66-6			6,000	0.0100	3.00	0.00316	0.774

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	Soil[2] (mg/kg)	Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
Mercury (CVAA)								
Mercury	7439-97-6	0.002	0.02	23	0.000200	0.0500	0.000140	0.00833

Chemical Name	CAS Number	Project Action Limits[3]			Laboratory Reporting Limits[4]		Method Detection Limits[4]	
		Groundwater[1] (mg/L)	Soil[2] (mg/kg)	Soil[2] (mg/kg)	Groundwater RL (µg/L)	Soil RL (µg/Kg)	Groundwater MDL (µg/L)	Soil MDL (µg/Kg)
Percent Moisture								
Percent Moisture	STL00177					0.100		
Percent Solids	STL00234					0.100		

Notes:
1. Based on RIDEM, Title 250 – Department of Environmental Management, Part 1 – Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases. December 2021.
2. The Project Action Limits (PALs) are current and accurate as of the date of this SSQAPPA.
3 Laboratory Reporting Limits (RLs) and Method Detection Limits (MDL) are from Eurofins.
4. PALs shown with gray shading indicate the method reporting limit exceeds the applicable standard. The laboratory will evaluate detection using the applicable method detection limit for these analytes. The results reported will be qualified as estimated
^ - reporting to lower standard
QL = Quantitation Limit
NE = Limit has not been established
NA = not available
NT = not tested

Table 7
FIELD SAMPLING AND FIXED LABORATORY ANALYTICAL METHOD/SOP REFERENCES
Potter Hill Mill
Westerly, RI

Title/Method Name	Originating Organization	Modified for Project Work Y or N	Analytical Parameter	SOP Number / Analytical Method	SOP Version Number	SOP Date
Boring/Well Construction Field Log Completion	GES	N	--	FM-4.4	003	6/9/2020
Chain-of-Custody Procedures	GES	N	--	FM-13.4	003	3/4/2020
Classification of Soils via Unified Soil Classification System (USCS)	GES	N	--	FM-2.2	003	6/9/2020
Collection of Field QA-QC Samples	GES	N	--	QA-1.1	003	3/16/2020
Containerization and Removal of Remedial Investigation Derived Waste	GES	N	--	FM-15.1	004	4/3/2020
Decontamination of Heavy Equipment	GES	N	--	FM-14.2	003	2/27/2020
Drilling Protocol	GES	N	--	FM-4.0	002	5/4/2020
Field Instrument Calibration and Documentation	GES	N	--	FM-1.7	001	4/22/2022
Field Logging of Subsurface Investigations	GES	N	--	FM-2.1	003	5/27/2020
Low Flow Groundwater Sampling	GES	N	Water Geochemistry	FM-8.5	003	5/26/2020
Monitor Well Design and Construction	GES	N	--	FM-5.4	004	4/10/2020
Sample Management, Packaging, and Shipping	GES	N	--	FM-13.5	004	3/11/2020
Screening Soil Samples Using Headspace Analysis	GES	N	Total VOCs	FM-9.7	003	3/11/2020
Soil Boring Advancement	GES	N	--	FM-4.1	004	5/7/2020
Soil Sampling for Analysis	GES	N	--	FM-9.1	003	5/26/2020
Analysis of Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS)	Eurofins New England	N	VOCs	EPA 8260	008	8/8/2024
Analysis of Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS)	Eurofins New England	N	SVOCs	EPA 8270	003	6/14/2024
Polychlorinated Biphenyls by Gas Chromatography (GC/ECD)	Eurofins New England	N	PCBs	SW846 8082A	008	8/8/2024
Metals Analysis by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)	Eurofins New England	N	Total Metals	SW846 6010D	001	9/15/2022
Mercury Sample Digestion and Analysis	Eurofins New England	N	Mercury	SW846 7470A and 7471B	002	9/20/2022 and 8/13/2024
Analysis of Diesel Range Organics C10-C28	Eurofins New England	Y	Diesel Range Organics	8015D Modified	005	8/8/2024
Analysis of Gasoline Range Organics C6-C10	Eurofins New England	Y	Gasoline Range Organics	8015D Modified	006	8/8/2024

Notes:
1. The most current version of the organizations' SOPs will be used whenever required for any Brownfields investigation.
2. GES SOPs are included in the Generic QAPP
Laboratories:
Eurofins New England
Laboratory SOPs are included in Appendix 1 of the SSQAPPA

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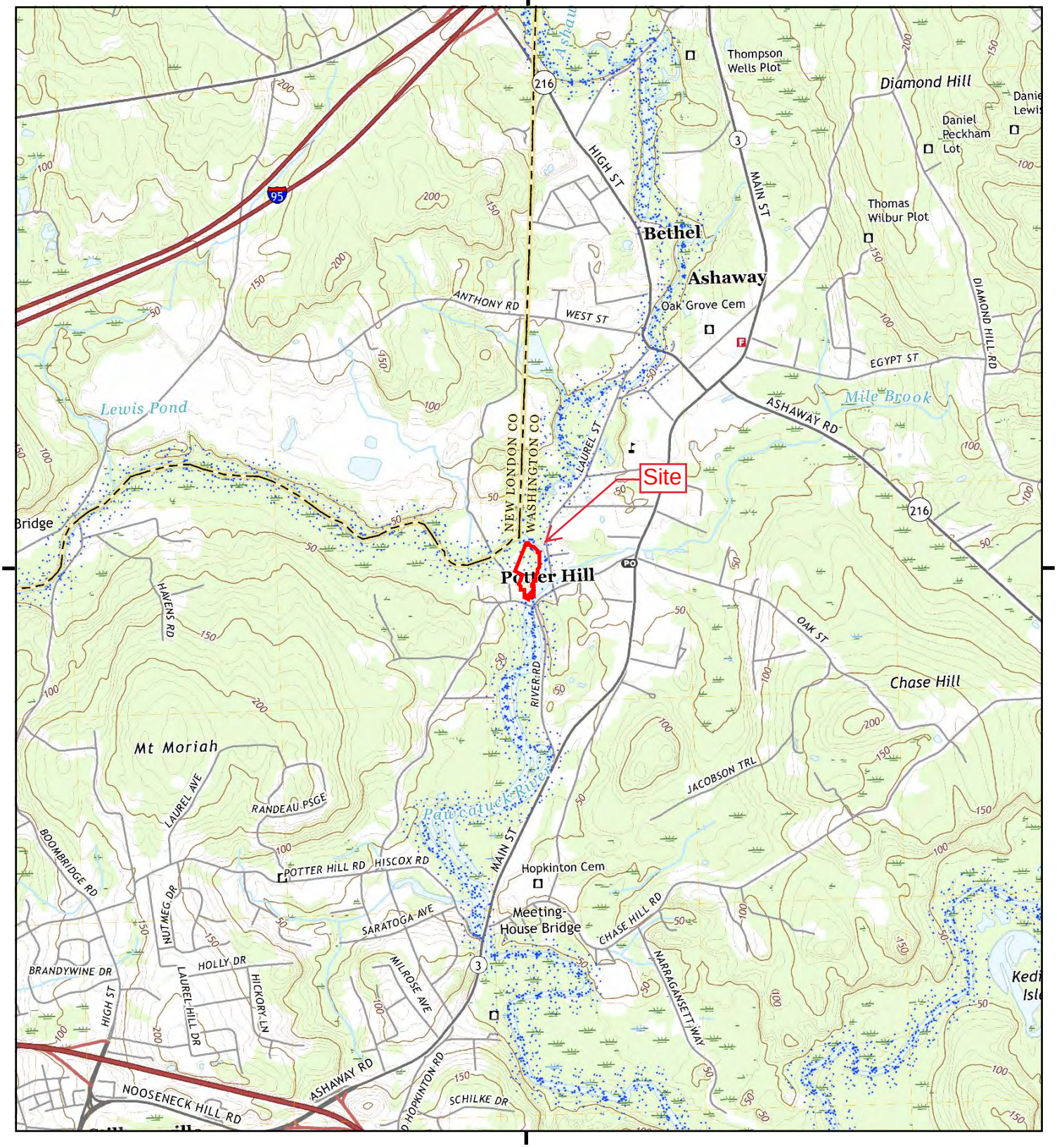
FIGURES

Figure 1 - Site Locus Plan

2021



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Ashaway, 2021, 7.5-minute

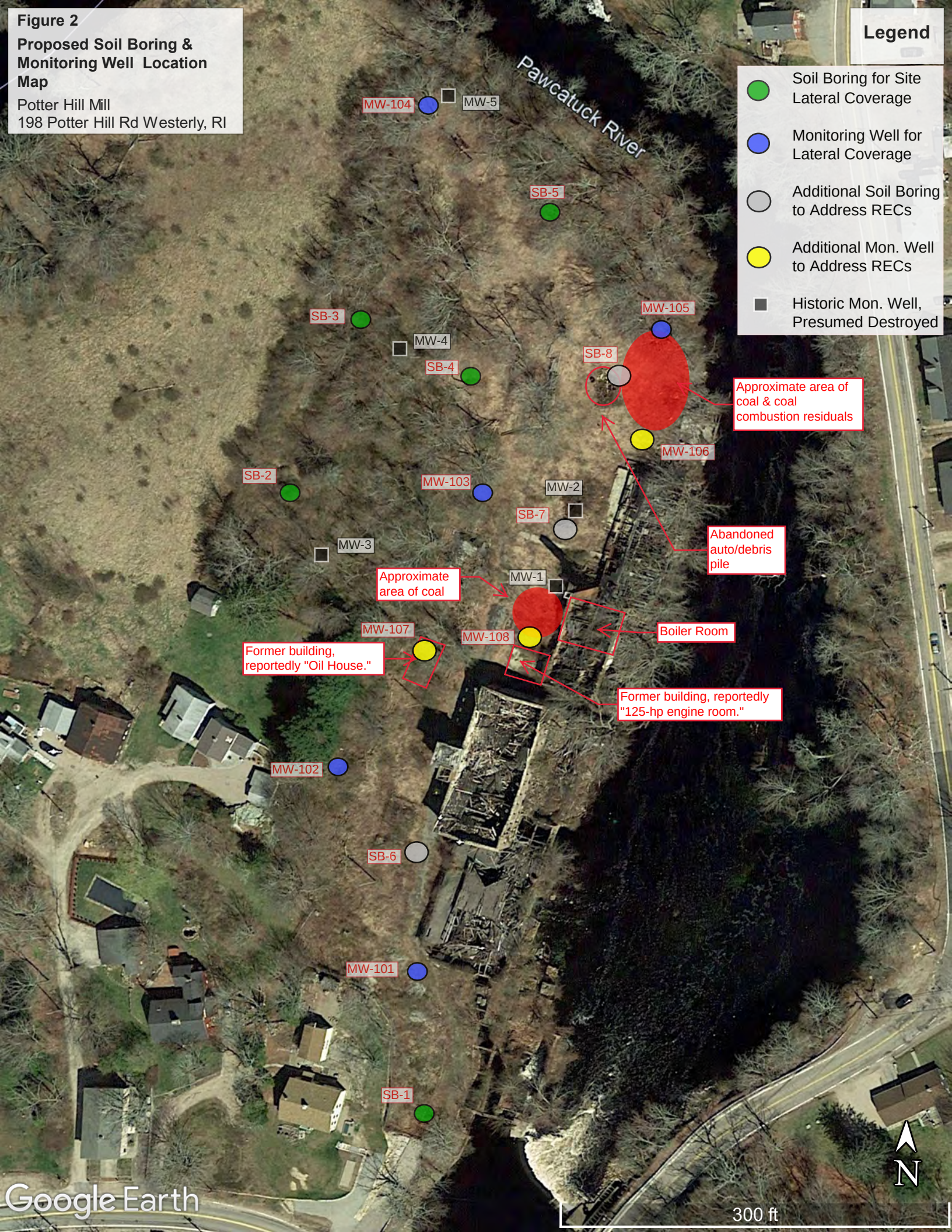
SITE NAME: Potter Hill Mill
ADDRESS: 198 Potter Hill Road
Westerly, RI 02891
CLIENT: GES, Inc.

N

Figure 2

Proposed Soil Boring & Monitoring Well Location Map

Potter Hill Mill
198 Potter Hill Rd Westerly, RI



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APPENDIX

eurofins	Always check on-line for validity.	Level:
Document number: **NE-ORG-GCMSV-SOP49314**	**Analysis of Volatile Organic Compounds by EPA 8260C, 8260D & MADEP WSC-CAM-II A**	**Standard Operating Procedure**
Old Reference: **60.003**		
Version: **8**		Organisation level: **4-Business Unit**
Approved by: **BAA3, HFO2, SBB9** Effective Date: **08-AUG-2024**	Document users: **EENE_SEMIs, EENE_VOAs**	Responsible: **EENE_QA**

1) Scope and Application

1.1. This method is designed for the identification and quantitation of purgeable volatile organic compounds (VOCs) in samples by the use of capillary column gas chromatography / mass spectrometry (GC/MS) instrumentation.

1.2. This SOP is applicable to methods 8260C and 8260D for both aqueous (5030C) and solid (5035 and 5035A) analysis.

1.3. Volatile organic compounds are analyzed in a variety of matrices, such as water and water-miscible liquids using the purge and trap technique, and can be analyzed efficiently if their boiling points are <200 and are insoluble or slightly soluble in water. Water soluble VOCs can be analyzed by this technique; however purge efficiency is directly related to water solubility. Thus, the practical quantitation limits (PQL) will be higher for soluble than for insoluble compounds; highly soluble compounds will have quantitation limits approximately 10 times greater than insoluble analytes.

1.4. The PQL of the purge and trap technique for a given analyte is dependent upon the matrix analyzed and the instrument used. The following Table 1 outlines target compounds, internal standards, primary and confirmatory ions as well as internal standards used to quantify each compound.

1.5. For the current list of Practical Quantitation Limits by Matrix (PQL), see the appropriate method limit group in TALS.

TABLE 1
Calibrated Compounds and Quantitation / Confirmation ions

Internal Standards

Compound Name	Primary Ion	Confirmation Ions
Fluorobenzene	96	77
Chlorobenzene-d5	117	119, 82
1,4-Dichlorobenzene-d4	150	153, 115

System Monitoring Compounds

Compound Name	Primary Ion	Confirmation Ions	Internal Std. used
Dibromofluoromethane	111	113 ,92	Fluorobenzene
1,2-Dichloroethane-d4	65	67, 51, 102	Fluorobenzene
Toluene-d8	98	100	Fluorobenzene
4-Bromofluorobenzene	95	174, 176	Chlorobenzene-d5

Target Compounds

Compound Name	Primary Ion	Confirmation Ions	Internal Std. used
Dichlorodifluoromethane*	85	87	Fluorobenzene
Chloromethane*	50	52	Fluorobenzene
Vinyl chloride	62	64	Fluorobenzene
Bromomethane*	94	96	Fluorobenzene
Chloroethane*	64	66	Fluorobenzene
Trichlorofluoromethane	101	103	Fluorobenzene
Ethanol*	45	46, 42	Fluorobenzene
Acetone*	58	43	Fluorobenzene
Ethyl ether	74	59,45	Fluorobenzene
1,1-Dichloroethene	96	61,63	Fluorobenzene
Tert-Butanol	59	41,57	Fluorobenzene
Acrylonitrile*	53	52,51	Fluorobenzene
Methylene chloride	84	86,49	Fluorobenzene

Compound Name	Primary Ion	Confirmation Ions	Internal Std. used
1,1,2-Trichlorotri-fluoromethane (Freon 113)	101	151, 103, 153	Fluorobenzene
Carbon disulfide	76	78	Fluorobenzene
Methyl tert-butyl ether	73	57	Fluorobenzene
trans-1,2-Dichloroethene	96	61,98	Fluorobenzene
2-Butanone (MEK)*	72	43	Fluorobenzene
Di-isopropyl ether	45	43,87	Fluorobenzene
Ethyl tert-butyl ether	59	87,57	Fluorobenzene
1,1-Dichloroethane	63	65,83	Fluorobenzene
2,2-Dichloropropane	77	97	Fluorobenzene
cis-1,2-Dichloroethene	96	61,98	Fluorobenzene
Bromochloromethane*	128	49,130	Fluorobenzene
Chloroform	83	85	Fluorobenzene
Tetrahydrofuran	42	41,72,71	Fluorobenzene
1,1,1-Trichloroethane	97	99,61	Fluorobenzene
Carbon tetrachloride	117	119	Fluorobenzene
Tert-amyl methyl ether	59	55,73	Fluorobenzene
1,1-Dichloropropene	75	110,77	Fluorobenzene
Benzene	78	77	Fluorobenzene
1,2-Dichloroethane	62	98	Fluorobenzene
Trichloroethene	95	97,130,132	Fluorobenzene
1,2-Dichloropropane	63	112	Fluorobenzene
1,4-Dioxane*	88	57,58,43	Fluorobenzene
Dibromomethane	93	95,174	Fluorobenzene
Bromodichloromethane	83	85,127	Fluorobenzene
4-Methyl-2-pentanone *	100	43,58,85	Fluorobenzene
2-Hexanone (MBK)*	43	58,57,100	Fluorobenzene
cis-1,3-Dichloropropene	75	77,110,39	Fluorobenzene

Compound Name	Primary Ion	Confirmation Ions	Internal Std. used
Toluene	92	91	Fluorobenzene
trans-1,3-Dichloropropene	75	77,110	Fluorobenzene
1,1,2-Trichloroethane	83	97,85	Fluorobenzene
Tetrachloroethene	164	129,131,166	Fluorobenzene
1,3-Dichloropropane	76	78	Fluorobenzene
Dibromochloromethane	129	127	Fluorobenzene
1,2-Dibromoethane (EDB)	107	109,188	Fluorobenzene
Chlorobenzene	112	77,114	Chlorobenzene-d5
1,1,1,2-Tetrachloroethane	131	133,119	Chlorobenzene-d5
Ethylbenzene	91	106	Chlorobenzene-d5
m,p-Xylene	106	91	Chlorobenzene-d5
o-Xylene	106	91	Chlorobenzene-d5
Styrene	104	78	Chlorobenzene-d5
Bromoform*	173	175,254	Chlorobenzene-d5
Isopropylbenzene	105	120	Chlorobenzene-d5
Bromobenzene	156	77,158	Chlorobenzene-d5
1,1,2,2-Tetrachloroethane	83	131,85	Chlorobenzene-d5
1,2,3-Trichloropropane	75	77	Chlorobenzene-d5
Trans-1,4-Dichloro-2-Butene	75	53,89	Chlorobenzene-d5
n-Propylbenzene	91	120	Chlorobenzene-d5
2-Chlorotoluene	91	126	Chlorobenzene-d5
4-Chlorotoluene	91	126	Chlorobenzene-d5
1,3,5-Trimethylbenzene	105	120	Chlorobenzene-d5
tert-Butylbenzene	119	91,134	Chlorobenzene-d5
1,2,4-Trimethylbenzene	105	120	Chlorobenzene-d5
sec-Butylbenzene	105	134	Chlorobenzene-d5
1,3-Dichlorobenzene	146	111,148	1,4-Dichlorobenzene-d4
4-Isopropyltoluene	119	134,91	1,4-Dichlorobenzene-d4

Compound Name	Primary Ion	Confirmation Ions	Internal Std. used
1,4-Dichlorobenzene	146	111,148	1,4-Dichlorobenzene-d4
1,2-Dichlorobenzene	146	111,148	1,4-Dichlorobenzene-d4
n-Butylbenzene	91	92,134	1,4-Dichlorobenzene-d4
1,2-Dibromo-3-chloropropane	75	155,157	1,4-Dichlorobenzene-d4
1,3,5-Trichlorobenzene	180	145,109,74	1,4-Dichlorobenzene-d4
1,2,4-Trichlorobenzene	180	145,182	1,4-Dichlorobenzene-d4
Hexachlorobutadiene	225	223,227,259	1,4-Dichlorobenzene-d4
Naphthalene	128		1,4-Dichlorobenzene-d4
1,2,3-Trichlorobenzene	180	145,182	1,4-Dichlorobenzene-d4
The following four compounds are also calibrated for separately when requested.			
Acrolein*	56	53,38	Fluorobenzene
2-Chlorethylvinyl Ether*	63	106	Fluorobenzene
Vinyl Acetate *	53	52,51	Fluorobenzene
Iodomethane	142	127	Fluorobenzene
Chlorodifluoromethane	51.0	67.0	Flourobenzene
The following three compounds are also calibrated for and reported only upon request.			
Cyclohexane	56	84, 41, 55	Fluorobenzene
Methyl acetate	43	74, 42, 59	Fluorobenzene
Methycyclohexane	83	55, 41, 98	Fluorobenzene
*= Identified as problematic compounds			

2) Summary of Method

2.1. Purgeable VOCs in an aqueous state are transferred from an aqueous phase to a vapor phase by purging the sample with an inert gas (helium). The purged vapor stream is concentrated on a trap, a stainless steel tube containing sorbent material capable of trapping the purged VOCs. The volatile compounds are then desorbed from the sorbent materials onto a capillary column by back-purging the trap with helium at an elevated temperature. The column is temperature-programmed to separate the compounds, which are then detected by a mass spectrometer (MS) interfaced to the gas chromatograph (GC).

2.2. Aqueous samples are purged directly. Generally, soils are preserved by extracting the volatile analytes into methanol. If especially low detection limits are required, soil samples may be frozen and purged directly.

2.3. Qualitative analysis is accomplished by the comparison of the mass spectra of the target analytes with prepared standards, and by GC retention times. Quantitation is achieved by comparing the abundance of a primary characteristic (quantitation) ion to the response of the internal standard. Table 1 (above) lists calibrated compounds and associated ions.

3) Definitions

3.1. TALS –Laboratory Information Management System (LIMS)

3.2. NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

3.3. Refer to the glossary in the Laboratory Quality Manual (*QM-QM49163*) for additional definitions.

3.4. VOC – volatile organic compound

3.5. MWRA- Massachusetts Water Resource Act

3.6. DI – deionized

3.7. GC – gas chromatograph

3.8. GC/MS – gas chromatography/mass spectrometry

3.9. MDL – minimum detection limit

3.10. LOD – Limit of Detection

3.11. LOQ – Limit of Quantitation

3.12. PQL – practical quantiitation limit

3.13. QC – quality control

3.14. CCV – continuing calibration Verification

3.15. ICV – Initial calibration Verification

3.16. LCV – low calibration verification

3.17. BLK – Batch blank sample

3.18. LCS – laboratory control sample

3.19. LIMS – laboratory information management system

3.20. PPB – parts per billion

3.21. PPM – parts per million

3.22. DNAPL/LNAPL – dense/light non-aqueous phase liquid

3.23. RSD – Relative Standard Deviation

3.24. RRT – Relative Retention Time

3.25. Analytical Batch is defined as a group of field samples with similar matrices which are processed as a unit. For Quality Control purposes, if the number of samples in such a group is greater than 20, then each group of 20 samples or less are defined as separate analytical batches.

3.26. Calibration Check Verification (CCV) is defined as a calibration standard used to periodically check the calibration state of an instrument. The calibration check standard is prepared from the same stock standard solution as calibration standards, and is generally one of the mid-level range calibration standard dilutions.

3.27. Calibration Standards are defined as a series of standard solutions prepared from dilutions of a stock standard solution, containing known concentrations of each analyte and surrogate compound of interest.

3.28. Field Duplicates are defined as two separate samples collected at the same time and location under identical circumstances and managed the same throughout field and laboratory procedures. Analysis of field duplicates gives a measure of the precision associated with sample collection, preservation and storage, as well as laboratory procedures.

3.29. Laboratory Duplicates are defined as split samples taken from the same sampling container and analyzed separately with identical procedures. The analysis of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

3.30. Laboratory Method Blank is defined as an aliquot of reagent water or clean sand spiked with a surrogate standard. The laboratory method blank is treated exactly as a sample, exposed to all glassware, solvents, reagents, and equipment. A laboratory method blank is analyzed with every batch of samples, to determine if method analytes or other interferences are present in the laboratory environment, reagents, or equipment.

3.31. System Solvent Blank is defined as an aliquot of a method solvent (e.g., hexane or methylene chloride, pesticide grade or better, that is directly injected into the GC system. The purpose of the System Solvent Blank is to determine the level of noise and baseline rise attributable solely to the GC system, in the absence of any other analytes or system contaminants.

3.32. Surrogate Standards are compounds spiked into all samples, blanks, and matrix spikes to monitor the efficacy of sample extraction, chromatographic, and calibration systems.

3.33. All other terms are as defined in SW-846, "Test Methods for Evaluating Solid Waste", USEPA, September 1986, and as amended and updated.

4) Interferences

4.1. The major sources of interference when analyzing samples with this method and the preventative actions taken to control each of these sources are as follows:

4.1.1. Purge/carrier gas supplies

The possibility of impurities from the purge and carrier gases entering the analytical system will be minimized by: (1) the installation of molecular sieve filters and hydrocarbon filters in the gas plumbing ahead of the instrumentation; and (2) utilizing ultra-high purity gases.

4.2. Residual instrument background

To avoid the possibility of organic compounds out-gassing from the sample lines and fittings in the purge and trap system, only Silicosteel™ and Nickel tubing are used.

4.2.1. A daily system blank is analyzed on each instrument to monitor the system before any samples are run. If the blank shows any contamination, corrective action must be taken before proceeding with sample analysis.

4.2.2. Cross-contamination from the sparging vessels is minimized by removing and/or rinsing the vessels after each sample is purged, rinsing the sparging needle with DI water, and replacing with a clean vessel (refer to cleaning protocol in Section 4.3).

4.2.3. Carry-over from a high concentration sample is minimized by: performing a dilution or cleaner samples at the beginning of a sample sequence and samples known to have high contamination at the end of the sequence. Analyzing a reagent blank directly after the highly contaminated sample also minimizes carry-over.

4.2.4. Frequent bake-out of the trap, transfer lines, and GC oven may be necessary to keep the instrument free from contamination.

4.2.5. Cross-contamination from analyst error is avoided by (1) keeping gloves clean and dry between loading samples, (2) rinsing the dispensing syringe with reagent water between loading samples (or more rigorous cleaning after highly contaminated samples), (3) appropriately cleaning dilution syringes between loading samples.

4.3. Cleaning protocols are as follows:

4.3.1. Syringes: All syringes used for preparing dilutions shall be cleaned by rinsing them 3 times fully with methanol. Dispensing syringes (10 mL Luer Lok) shall be cleaned with DI water a minimum of 3 times between uses. Additional cleaning may be performed on an as needed basis with soap, hot tap water, methanol and reagent water.

4.3.2. Glassware: All flasks used in preparing standards or samples shall be rinsed 3 times with hot tap water and 3 times with DI water. Soapy water or methanol can be used additionally for oily/foamy residue or highly contaminated flasks.

4.4. Certain activities may result in the degradation of samples, invalidation of results, or damage to equipment. Care should be taken to minimize such events by following proper sample handling and proper laboratory procedures:

4.4.1. In order to ensure the integrity of samples and standards, and to avoid degradation of volatile compounds, keep refrigerated or frozen (where applicable) until time of preparation and analysis.

4.4.2. Avoid excessive agitation of samples and standards, which would result in the release of volatile compounds.

4.4.3. Any soapy or frothy samples will require being diluted at time of loading to avoid damage to the trap, column, and detector during analysis.

4.4.4. Highly contaminated sample(s) with heavy petroleum product shall be diluted sufficiently to avoid excessive system contamination and "carry-over" contamination to other samples in the run sequence.

4.4.5. Analysts in the VOC department shall avoid entering departments that use such solvents as methylene chloride and acetone. This will avoid the possibility of carrying the vapors on their lab coats back to the VOC instrument room, which may cause false positive results on the VOC data.

5) Safety

5.1. Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.2. Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded; other gloves will be cleaned immediately.

Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.3. High temperature zones - use caution to prevent burns from: Transfer line (220°C-300°C), GC oven and injectors (up to 230°C).

5
.4. The preparation of standards, reagents, and glassware cleaning procedures that involve solvents such as methylene chloride will be conducted in a fume hood with the sash closed as far as the operations will permit. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the fume hood and store the containers in the specified chemical cabinets.

5.5. All work must be stopped in the event of a known or potential compromise to the health and safety of a Eurofins associate. The situation must be reported immediately to a laboratory supervisor or the EH&S coordinator.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. GC/MS
HPV3

EST Centurion Autosampler
EST Evolution Concentrator
Vocarb 3000 (K) trap and conditions used
Agilent 7890A series gas chromatograph
Agilent 5975C Mass Selective Detector
Column – DB-VRX, 20 meters, 0.18mm diameter 1.0um film

6.2. GC/MS
HPV4

EST Centurion II Autosampler
EST Evolution Concentrator
Vocarb 3000 (K) trap and conditions used
Agilent 7890A series gas chromatograph
Agilent 5975C Mass Selective Detector
Column – DB-VRX, 20 meters, 0.18mm diameter 1.0um film

6.3. GC/MS
HPV5

EST Centurion II Autosampler
EST Evolution Concentrator
Vocarb 3000 (K) trap and conditions used
Agilent 6890N series gas chromatograph
Agilent 5973 Mass Selective Detector
Column – DB-VRX, 20 meters, 0.18mm diameter 1.0um film

Note – only some of the instruments above will be calibrated for additional MWRA compounds.

6.4. Centrifuge (variable speed lab grade)

6.5. Analytical Balance Capable of Accurately Weighing 0.0001g

6.6. Volumetric Flasks (class A):, 10mL, 25mL, 50mL, 100mL, 250mL

6.7. 40 mL clear, open top screw cap with PTFE faced silicone septa

6.8. 40 mL clear, open top screw cap with PTFE faced silicone septa, with 15mL or 5mL of methanol

6.9. 40 mL clear, open top screw cap with PTFE faced silicone septa, with 5mL H_2O and a magnetic stir bar

6.10. Solvent Wash Bottle

6.11. Disposable Borosilicate Glass Pasteur Pipettes

6.12. Microsyringe: 10 uL, 100 uL, 250 uL, 500 uL, 1000 uL

6.13. 10mL disposable BD luer-lock syringe

6.14. Metal Spatula

6.15. Each analytical instrument has its own software and a computer to run the instrument. All GC instruments are operated by Chemstation software. The data processing software is Chrom. The laboratory-wide LIMS system is TALS.

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Reagent water: deionized water (ASTM Type II). Reagent water is produced using a reverse osmosis pretreatment unit with a series of resin cartridges.

7.2. Methanol (CH_3OH) – ASC grade or equivalent. For cleaning

7.3. Methanol (CH_3OH) – Purge and Trap grade

7.4. Primary Stock Standard Solutions - Purchased as custom multi-component and single component solutions in methanol or water. Stored at 0-6^oC in sealed ampules.

7.5. Secondary Standard Solutions - Purchased as custom multi-component and single component solutions in methanol or water. Used for ICV/CCV/LCS samples Must be from a different supplier than the Primary material. Stored at 0-6°C in sealed ampules.

7.6. Working standards: A working solution containing the compounds of interest, or internal standards or surrogates are prepared from the stock solution(s) in methanol. The working standard solutions will be prepared monthly with the exceptions of the gases and 2-chloroethylvinyl ether solutions, which will be prepared on a weekly basis. These standards are stored in the freezer below -10°C.

7.7. Surrogates/Internal standard: Purchased as a prepared standard.

7.8. Ottawa Sand- 20-30 mesh, certified clean for use as blank solid matrix – bake at >100°C prior to use.

7.9. Expiration dates for prepared standards are 6 months from prepared date. Expiration date for pure products is 5 years from day of purchase. Expiration dates for ampules are assigned by the vendor or one year after open.

7.10. Any standard/reagent that comes with a Certificate of Analysis must be scanned into TALS-reagent tab. Ensure proper labeling of standards including a TALS ID, received date, expiration date, and opened/prepared date.

7.11. Analysts must check all standards for expiration dates on a specific timeframe.

Table 2

Manufacturer	Part #	Compound & Concentration
Agilent	STM-540-1	Internal Standard and Surrogate Mix – 2,500 ug/mL
Agilent	CUS-28148	Custom 82 Analyte Mix – 50 ug/mL
Restek	569723	2-Chloroethyl Vinyl Ether – 2,500 ug/mL
Restek	568420	Acrolein – 19,750 ug/mL
Restek	569724	Vinyl Acetate– 5,000 ug/mL
Absolute Standards	94577	Custom 80 Analyte Mix – 50 ug/mL (2nd Source)
Absolute Standards	97751	Cyclohexane, Methyl Acetate, and Methylcyclohexane Mix – 1,000 ug/mL (2nd Source)
Absolute Standards	70489	Iodomethane – 1,000 ug/mL (2nd Source)
Absolute Standards	82408	2-Chloroethyl Vinyl Ether – 2,000 ug/mL (2nd Source)
Restek	569724.SEC	Vinyl Acetate – 5,000 ug/mL (2nd Source)
Restek	568720.SEC	Acrolein – 19,750 ug/mL (2nd Source)

8) Sample Collection, Preservation, Shipment and Storage

8.1. All water samples for VOC analysis should be collected in pre-cleaned 40-mL VOA vials that have been acidified with hydrochloric acid to a pH of less than 2.0 to prevent biological degradation of aromatic compounds. If Acrolein or 2-CLEVE are analyzed, the sample must be collected in an unpreserved vial.

8.2. The container must be filled completely with the liquid sample so that there are no air bubbles present. The PTFE side of the silicone septa should be against the liquid. Once closed, the sample should not be opened until time of analysis.

8.3. Soil samples should be collected in pre-cleaned 40-mL VOA vials with either 5mL of DI & a stirbar, for low level analysis; or a 40-mL VOA vial with 5mL or 15mL of methanol.

8.4. If a bulk soil sample is submitted, the sample must be preserved in either a DI or methanol vial within 48hr of collection. If the sample is preserved outside of that time, an NCM must be created.

8.5. All samples are to be iced or refrigerated and maintained at 0-6^{o}C until analysis time. Soil DI vials are to be frozen, at <10^{o}C, within 48 of collection time and only thawed prior to analysis.

8.6. Collect at least three HCl VOA vials from each location. Properly collected samples may be stored up to 14 days before analysis, non-preserved vials may be stored up to 7 days. Acrolein has a holding time of 3 days in an unpreserved vial.

8.7. All finished drinking or wastewater samples suspected to contain residual chlorine will follow a dechlorination procedure. This procedure uses about 10mg of ascorbic acid per 40mL of sample to the sample bottle before filling. This procedure is outlined in method 624.1.

8.8. Once samples are received at the laboratory, they are secured by the sample department, assigned a laboratory specific identification number, and are stored in refrigerators before analysis. During the log-in procedure, all information about the sample is entered into the Laboratory Information Management System (TALS). Information entered includes the client sample identification, analyses requested and collection date and time. Once the entry is complete samples are assigned an identification number, which aids in tracking the samples. Samples are then distributed to the appropriate departments depending on the analyses requested. Samples for VOC analyses are stored in a refrigerator specified for VOC samples only and are organized in numerical order for ease of tracking.

8.9. Samples are kept refrigerated for 14 days. They are then removed from the refrigerator, put in a box labeled with the disposal date, and kept in the sample staging area for an additional 30 days. Samples are disposed of after those 30 days unless otherwise specified for return to the client.

9) Quality Control

Table 3 – QC Requirements

Quality Controls	Frequency	Control Limit
BFB	Prior to any analysis and 12hr thereafter	See criteria in Section 19.4

Quality Controls	Frequency	Control Limit
BFB	Prior to any analysis and 12hr thereafter	See criteria in Section 19.4
Initial Calibration	As necessary	%RSD<20%, r^2>0.995, %RSE<20% MCP/RCP: If <10% of compounds exceed criteria, recalibration is not required as long as %RSD <40 or r2 >0.98.
ICV (Second Source Standard)	After ICAL	<20% Drift or Difference 20%of compounds may be <30%D, Problematic compounds are <50%D
Continuing Calibration Verification CCV	Before each analytical batch of 20 injections or 12hr	≤20%D; except for difficult which must be ≤ 50%D. <20% of compounds out as long as <40%D.
Method Blank (MB)	One per extraction batch (up to 20 samples)	<RL (8260C) < ½ LLOQ OR ≤ 10% of the concentration found in client samples for Method 8260D
Laboratory Control Sample (LCS) – Water	One per extraction batch (up to 20 samples)	Statistical limits are maintained in TALS
Laboratory Duplicate (If volume allows and is requested.)	As requested	Statistical limits are maintained in TALS
Matrix Spike (MS) –	(As requested by client or minimum of 1 per 20 624.1 samples analyzed)	Statistical limits are maintained in TALS
Matrix Spike Duplicate (MSD)	(As requested by client)	Statistical limits are maintained in TALS
Surrogate	Every sample	70-130%
Internal standard	Every sample	CCV/LCS must be 50-200% the response of ICIS Samples must be 50-200% of the opening CCV

9.1. STANDARD PREPARATION

9.1.1. Proper standard preparation is performed by using clean, dry, microliter syringes for the transferal of the appropriate volumes of the primary standard solutions into the volumetric flasks. When dispensing the concentrates into the flasks, the needle of the syringe must be totally immersed in the liquid. Once all appropriate concentrations have been spiked, the flask must be slowly inverted three times only. Agitation of the liquid must be avoided. The liquid in the neck of the flask is discarded and the remaining solution is used to fill the corresponding containers. When filling VOA vials, care shall be taken to not allow any air bubbles to be trapped

in the vial when screwing on the cap. All quality control, calibration and spiking standards shall have the description, concentration, unique TALS ID, and expiration date labeled. The unique TALS ID will be recorded in the Chrom Work list all IS/S solutions, QC and calibration standards to provide easy traceability for standards used. Standards that are created in TALS will reflect the description, concentration(s), recipe, preparation and expiration dates, the preparatory analyst's initials, lot numbers, Vendors and source ampule(s).

9.1.2. Working Calibration Standards - Prepare a minimum of 5 working standards, normally 9, from primary dilution standards or the ampule in 100mL volumetric flasks, diluting them in reagent water. Fewer levels may be necessary for some analytes based on the sensitivity of the MS, but no fewer than 5 levels may be used, and only the highest or lowest point(s) may be dropped from the calibration. One of the standard concentrations must be ≤ the practical quantitation limit. The other standards should cover the linear working range of the instrument. Concentrations are typically prepared at 0.50, 1, 2, 5, 10, 20, 40, 50, and 100 ug/L. A minimum of 6 concentration levels is required for a quadratic calibration. MWRA compounds are prepared separately from the other method analytes at concentrations ranging from 1 to 50 ug/L and be as high as 100 ug/L. Due to the higher concentrations of these ampules it is necessary to prepare primary dilution standards into the applicable solvent (either methanol or deionized water). Calibration standards shall be stored in 40mL VOA vials with no headspace for up to 24 hours at 0-6^{o}C. MWRA Calibration standards shall be stored in unpreserved 40 mL VOA vials with no headspace for up to 24 hours at 0-6^{o}C.

9.1.3. The ICV will be prepared at the mid-point of the calibration using the second source stock, containing all of the target analytes.

9.1.4. Daily CCV/LCS Quality Control Standards – The quality control standards are purchased as certified concentrates. The CCV/LCS standard must be a different source than the source used for the initial calibration. The standard must contain all the method analytes at a mid-range concentration of the calibration curve. The quality control standards are prepared in reagent water as needed and stored in serum vials with no headspace at 0-6^{o}C and must be labeled as to the description, concentration, unique TALS ID, preparation date, and expiration date. The LCSs will be prepared in HCl vials if HCl vials are to be analyzed. The LCS may be used as the CCV sample. MWRA QC standards will be prepared as needed and will be stored unpreserved in 40mL vials with all relevant information labeled.

9.1.5. When analyzing TCLP samples, fluid specific LCS and LCSD must be prepared with un-tumbled fluid and analyzed with the batch. Additionally a tumbled fluid blank will be analyzed with TCLP and SPLP batches and uploaded as a MB.

9.1.6. Internal Standard/Surrogate Solution - The internal standards and surrogates are purchased as certified concentrates in methanol. The prepared solution consists of Fluorobenzene, Chlorobenzene-d5, and 1,4-Dichlorobenzene as the internal standards and Dibromofluoromethane, Toluene-d8, 4-Bromofluorobenzene, 1,2-Dichloroethane-d4, as surrogates. This is prepared at a concentration of 50 ug/L in methanol and stored in a serum vial at <10^{o}C or in an autosampler reservoir and must be labeled as to their description, concentration, unique TALS ID, preparation date, and expiration date. The EST Centurion autosampler adds 5uL of standard into each 5ml water or DI soil aliquot. Methanol Soil sample will spiked directly with surrogate and then shaken for two minutes to extract the sample.

9.1.7. Matrix spiking solution – The matrix spiking mixture is purchased as a certified concentrate containing the method analytes. The MS standard must be a different source than the source used for the initial calibration. This solution is stored / prepared in methanol and stored in a serum vial at <10^{o}C or in an autosampler reservoir and must be labeled as to the description, concentration, unique TALS ID, preparation date, and expiration date.

9.2. Calibration Analysis

9.2.1. A 5-mL sample volume of the solution will be purged in this method. The calibration range for the primary 8260 systems will be between 0.50 ug/L and 100 ug/L. The additional compounds for MWRA will generally have a calibration range between 1 ug/L and 50 ug/L but may extend higher. Exceptions to this guideline may occur – data points may need to be dropped from the high end of the curve if method criteria cannot be met.

9.2.2. Analyze the standards as normal samples would be analyzed. Examine the resulting chromatograms for the following parameters:

9.2.2.1. Assure that peaks are symmetrical in shape and that tailing is minimized. If irregularities are observed, appropriate troubleshooting may be necessary (see instrument operation manual).

9.2.2.2. Assure that peak identification software can recognize each analytical peak in its respective retention time window and make correct tentative identifications.

9.2.2.3. Quantify the midpoint of the calibration curve first and utilize this data to update the current retention times, reference spectra, and ion relative responses in the Chrom software. Use the new criterial to evaluate the remainder of the curve points.

9.2.2.4. Using the resulting data, the calibration curve must be generated by entering the peak areas for each individual analyte at their respective concentrations.

9.3. Initial Calibration Acceptance Criteria

9.3.1. The curve for each analyte must have adequate relative standard deviation (RSD) of ≤ 20% under an average fit. Alternatively, the results can be used to fit a linear or quadratic regression of response factors. If used, the regression must be weighted inversely proportional to concentration (1/C). This coefficient of determination (r^2) of the weighted regression must be greater than 0.990 and have a %RSE of < 20%. These values will be calculated by CHROM. If the calibration fails these parameters, instrument maintenance and a new calibration must be performed. A minimum of 5 calibration points is required for analytes calibrated via average response and linear regression and 6 points for quadratic regression.

9.3.2. Low calibration Verification (LCV) need to be verified for each analyte with each calibration. This is done automatically by the Chrom software as a percent error. The percent error for each analyte should be <30%, for the lowest calibration point, the % Error may be < 50%. If LCV criteria is not met for a specific reporting level, than the reporting level for that analyte should be raised to the level which it does pass the <30% criteria for or the next LCV concentration will be made reportable in addition to the initial LCV concentration demonstrating the high bias.

9.3.3. An Initial Calibration Verification (ICV) must be analyzed using a second source standard different than that of the calibration standards. The ICV is a mid-range concentration of the method analytes which must all recover within the 70-130%, except for difficult analytes must be recovered at 50-150%.

9.4. Batch Quality Control

9.4.1. The strict quality criteria described and outlined below have been adopted by Eurofins Environment Testing to provide up to date quality assurance. A system blank and two to three quality control samples (CCV / LCS) are analyzed with each batch. Matrix spike will be analyzed as additional batch QC as well.

9.4.2. The CCV / LCS are analyzed at the beginning of each 12 hour shift. The 12 hour shift begins after analysis of BFB, the LCS and the method blank and ends 12 hours later. The MS and MSD are treated as samples and are analyzed within the 12-hour shift. The total time for analysis of BFB, the LCS, the blank and the 12 hour shift must not exceed 14 hours.

9.4.3. The CCV is evaluated for:

9.4.3.1. The % Recovery in the CCV sample must meet the criteria set in Table 3. Any sample with reportable concentration of an analyte which does not meet the % Recovery criteria must be reanalyzed with acceptable batch QC for that analyte.

9.4.3.2. The area counts for the internal standards must be between 50-200% of the area counts in the associated mid-level initial calibration standard.

9.4.3.3. Since the CCV and LCS are to be made from the same secondary source, they may be used interchangeably.

9.4.4. Batch Method Blanks and LCSs must be matrix-specific. Aqueous and drinking water batches will use HCL-preserved vials for system blanks and prepared LCSs. The 4 compounds for MWRA QC will be prepared in un-acidified vials. Soil QC is prepared with 5g of baked Ottawa sand with reagent water for low-level and mid-level QC is prepared in a volumetric flack using methanol that has been extracted from Ottawa sand.

9.4.4.1. The MB is evaluated for each analyte must be evaluated down to the MDL. Any analyte found below the MDL will be reported as <MDL and any analyte above the MDL will be reported to 2 significant figues.

9.5. Internal Standard/Surrogates is added to all QC and samples. The response of the IS must be within 50 – 200% of the response seen in the opening CCV. If IS response is outside this range, it indicates either a drift in instrument response, or an adverse effect of the sample matrix and corrective action is required.

9.5.1. If IS response falls outside the acceptance range in a MB or LCS, this may indicate a drift in instrument response from the ICAL, and a new initial calibration curve must be analyzed if the failures repeats.

9.5.2. IS failure in a sample or MS/MSD may be caused by the matrix. If volume is available, the sample should be reanalyzed to confirm, unless the matrix interference is obvious. If the bad matrix is obvious, results for the associates compounds are considered as estimated and may be reported along with the "ISTD – Matrix" NCM.

9.6. Eurofins Environment Testing, Inc. adheres to a strict quality assurance and quality control plan to assure accurate and precise results. The following quality control steps are specific to this method. Each analyst must comply to these steps to ensure the quality of results.

9.6.1. System Blank (Instrument QC)

9.6.2. BFB (12 hr tune)

9.6.3. 20 ug/L secondary CCV

9.6.4. Laboratory control sample

9.6.5. Laboratory control sample duplicate (if needed)

9.6.6. Method blank

9.6.7. Matrix Spike/Duplicate (If enough volume submitted, or as requested)

9.6.8. Sample analysis (no more than 20 client samples from CCV)

Method blank and laboratory control sample, laboratory control sample duplicate are run 1 each per analytical batch of 20. Refer to Table 3 for acceptance criteria for all batch and instrument QC.

9.7. Troubleshooting

9.7.1. Below is a general troubleshooting guide for unacceptable results:

9.7.2. System blank fails (any method analytes are above MDL)

9.7.2.1. Clean tube, bake trap and column, rerun blank

9.7.2.2. Check DI water for contamination

9.7.2.3. Check IS/S for contamination

9.7.3. QC check or surrogate fails (method analytes fall outside of acceptable recoveries)

9.7.3.1. Check area of I.S.

9.7.3.2. Rerun QC

9.7.3.3. Prepare fresh QC

9.7.3.4. Calibrate instrument

9.8. Daily quality control checks, other than running the system blank, CCV / LCS / MB are: One matrix spike sample is analyzed for every 20 samples run. BFB tune checked first in every batch daily. Trip and Field blanks are submitted at the discretion of the client. Any flagged values or QC failures in TALs will require identification and rationale in the sample NCM.

9.9. Troubleshooting within the lab is performed for reasons such as instrument malfunction, unacceptable quality control results or unacceptable/unexpected data results. For instrument malfunction, the analyst is encouraged to refer to instrument manuals and, if necessary, contact a service technician.

9.10. In instances of unacceptable or unexpected data results, the analyst must investigate all areas of possible problem. If the results of a sample that was run in duplicate do not match, the analyst must first double check the labels on each vial to ensure all information is correct, including client and laboratory identification. This will determine if there was a mislabeling by the client, or a mis-numbering of the laboratory identification by the log-in analyst. The pH of each vial shall be checked also, as a sample that is not preserved may produce inaccurate results.

9.11. It may be determined that a sample contains false positive results from a previous highly contaminated sample by checking instrument logbooks. Re-analysis of these identified samples is necessary.

10) Procedure

10.1. On a daily basis, each department reviews from the TALS software a backlog, which indicates all samples that have not yet been analyzed. Listed in the backlog report are laboratory and client ID's, collection date, analysis due date, and analysis requested. By reviewing the backlog, the analyst knows which samples to analyze during that day and can also avoid letting any samples pass their holding time by observing the collection dates.

10.2. Sample Preparation

10.2.1. Once a sample sequence has been determined by use of the backlog, a Chrom Work List is generated and the samples are taken from the refrigerator and placed in the laboratory. Samples must warm to room temperature before being analyzed. The analyst compares information on the bench sheet with the information on the labels of the samples to ensure that the laboratory and client IDs, collection date and time, and analysis requested are the same. Any discrepancies are relayed to the log in analyst for correction. In addition, the sample integrity is inspected. A pH reading is taken after the aliquot of sample has been taken from the vial or when the vial is opened to perform a dilution and any reading outside of the pH range are noted as an NCM in the analytical batch. All water samples are checked for the presence of free chlorine with purchased Chlorine test strips. Any positive reading is recorded in the TALS batch. In the event that any sample has an insufficient preservation recorded, the analyst will check the pH of the remaining vials. If it is found that the duplicate vials have a sufficient pH, the analyst will reanalyze the vial that has been properly preserved according to the method criteria.

10.2.2. Water sample prep.

10.2.2.1. Screening is performed on aqueous samples to determine if a dilution is required on the sample. A duplicate vial will be utilized if submitted. This is done by setting the sample to run at a dilution on a screening instrument. Analysts review the screening data and determine what dilution to analyze the sample at.

10.2.2.2. The dilution factor should be selected so that the method analyte with the highest concentration in the sample would be 60 to 80% of the highest calibration standard. In certain cases where the sample contains a high level of non-method analytes, especially high boiling point compounds, the sample should be diluted enough to prevent system contamination. Similarly, any soapy or frothy samples will require being diluted at time of loading to avoid damage to the trap, column, and detectors during analysis.

10.2.2.3. Dilutions in a Volumetric Flask

Desired Dilution	Amount of Sample	Amount of DI Water
"Straight"	5.0 ml	0.0 ml
1:5	20 ml	80 ml
1:10	10 ml	90 ml
1:20	5 ml	95 ml
1:25	4 ml	94 ml
1:50	2 ml	98 ml
1:100	1 ml	99 ml
1:200	500 ul	99.5 ml
1:250	400 ul	100 ml
1:500	200 ul	100 ml
1:1000	100 ul	100 ml
1:2000	50 ul	100 ml
1:2500	40 ul	100 ml
1:5000	20 ul	100 ml

10.2.2.4. The samples requiring dilutions that are to be analyzed on an auto-sampler unit will be prepared in 50mL volumetric flasks and mixed with the appropriate volume of reagent water. The diluted samples are transferred to 40mL serum vials with no headspace and are analyzed in the sequence run.

10.2.2.5. If a sample contains analytes at such high concentrations, serial dilutions may be required. For automated load systems a serial dilution will be made using two 50-mL volumetric flasks. A parent dilution will be made in the first 50-mL flask while the second flask will contain the final dilution made from the first (parent) 50-mL flask.

10.2.2.6. When handling samples and standards containing VOCs, it is especially important to carry out the procedure as quickly as possible to avoid possible loss of analytes. Once a water sample has been opened to manually load into the sparge vessel or to prepare a dilution, a pH reading is taken. For samples that were analyzed without a dilution on an auto-sampler unit, a pH reading is taken after the aliquot has been removed from the vial. The results are recorded in the sequence logbook and in the TALS system. The presence of free Chlorine must be tested using Chlorine test strips and the results recorded in the sequence logbook. If there is a positive reading this must be recorded in the TALS as well.

10.2.3. Low level Soil Sample Analysis (Purge and Trap unit will sample directly from the VOA vial)

10.2.3.1. The samples are removed from the freezer and allowed to thaw. Once thawed, they are weighed and entered into the batch.

10.2.3.2. Units which sample from the VOA vial should be equipped with a module which automatically adds surrogate and internal standard solution to the sample prior to purging the sample.

10.2.3.3. The samples are loaded onto the autosampler and are purged directly from the vial.

10.2.4. Methanol Extracted Soils

10.2.4.1. Methanol extracted soils are always prepared at a base dilution of 50x.

10.2.4.2. The samples are removed from the refrigerator and allowed to thaw. They are then weighed and entered into the batch.

10.2.4.3. The sample is spiked with an appropriate amount of surrogate solution and mixed for two minute, then allowed to settle.

10.2.4.4. 1mL of methanol extract is transferred to a 50mL volumetric flask using a gastight syringe. The flask is brought to volume, then inverted three times and poured off into a clean VOA vial.

10.2.4.5. The sample is labeled and ready to be loaded.

10.3. Compositing Samples

10.3.1. Flask Compositing - In the flask compositing procedure, a 100mL flask or a non-reactive glass container is used for compositing samples. The compositing must be done using a narrow-mouth flask immersed in an ice bath. The individual samples, maintained at 0-6°C, are slowly poured into the flask. The flask is swirled slowly to mix the individual grab samples. After mixing, multiple aliquots of the composited sample are poured into VOA vials and sealed for subsequent analysis. An aliquot can also be poured off into a syringe for immediate analysis.

10.4. Procedure for Loading a Sample

10.4.1. Check label of sample container with the sample bench sheet.

10.4.2. Bring the sample to room temperature.

10.4.3. (Aqueous samples only) Invert the VOA vial gently to mix any DNAPLs and LNAPLs so that an accurate representation of the sample will be used for analysis.

10.4.4. (Samples that do not require dilution on auto-sampler system) Place sample vials in the auto-sampler system in the order specified in the sequence.

10.4.5. (Samples requiring dilution on auto-sampler system) Fill a 50mL volumetric flask part way with deionized water. Using a gas tight dilution syringe, withdraw a portion of the sample to rinse the syringe and discard. Repeat three times. Withdraw the appropriate volume of sample (without air bubbles) and inject under the surface of the water. Bring the flask up to volume with DI water. Cap and gently invert no more than 3 times. Slowly pour the contents into 40mL septa vials and screw the cap on leaving no headspace. Label the diluted vial with the sample ID and dilution factor.

10.4.6. The pH of the aqueous sample is taken and chlorine is tested after analysis and recorded TALS. In the event that any sample has an insufficient preservation recorded the analyst will check the PH of the remaining vials. If it is found that duplicate vials have a sufficient PH, the analyst will reanalyze the vial that has been properly preserved according to the method criteria.

10.5. Instrument Set Up

10.5.1. A sequence file for the day must be generated, indicating the specific instrument and the corresponding date. All data correlating to a batch will be sent to this file. The QC/sample information from the worklist is then entered into the computer software and a sequence run is downloaded. The sampler introductory unit is set to run the sequence by entering the starting position and the ending position numbers (i.e., tubes/positions 1 through 16). The appropriate analysis methods shall be selected on both the GC software and the OI or EST system.

10.5.2. Each instrument has its own sequence logs are kept in the Work List section of Chrom showing each sample is loaded into the system, and samples are loaded in the order in which they will run. Vials which have been analyzed will be put into a storage box in the order which they ran.

11) Calculations / Data Reduction

11.1. Calculating the response factor (RF)

11.1.1. For the internal standard calibration, the RF represents the key to calculating final concentrations of each analyte in the sample. The RF is calculated as follows by using information taken from a known sample.

$$\mathbf{RF = (As \times Cis)/(Ais \times Cs)}$$

Where:
As = Response (in area) for the parameter to be measured
Ais = Response (in area) for the internal standard
Cis = Concentration of the internal standard
Cs = Concentration of the parameter to be measured

11.2. Calculating Analyte Concentration

11.2.1. Using the above calculation, the concentration of the analyte found in an actual sample can then be calculated:

Cr (ug/l) = (As x Cis)/(Ais) (RF)

Where:
As = Response for the parameter to be measured
Ais = Response for the internal standard
Cis = Concentration of the internal standard
Cr = the raw concentration (ppb) obtained from the computer printout

11.2.2. The following equation is used to calculate the actual concentrations of constituents found in a liquid sample. The raw data generated by the software is used:

C = Cr x df

Where:
df = the dilution factor

11.3. Evaluating Tentatively Identified Compounds

11.3.1. All spectra must be evaluated by a qualified mass spectrometrist

11.3.2. The spectral library match must be ≥ 85% for a tentative identification to be made.

11.3.3. Structural isomers that produce very similar spectra can be explicitly identified only if they have sufficiently different chromatographic retention times. Acceptable resolution is achieved if the height of the valley between two peaks is less than 25% of the average height of the two peaks. Otherwise, structural isomers are identified as isomeric pairs.

11.4. Manual integration

11.4.1. Manual integration is rarely used when interpreting GC/MS data. When data needs to be manually integrated an automated program will capture the graphics of both the before and after manual integrations. In the case of Quality control data (i.e. CCV, LCS, LCSD, MS, MSD) a separate sheet will be printed with the picture of all the before/after manual integrations and will be attached to that specific QC. These printouts can be found attached following the raw data. Along with the before and after chromatograms the analyst must pick one of several specific reasons as to explain why the manual integration was necessary. The analysts will be attached

to each integration, the corresponding reason, and this information will be automatically printed underneath the analyte on the generated report.

11.4.2. All manual integration or peak to peak integration is performed from valley to valley and will be reviewed by management for concurrence and approval in accordance with the Manual Integration SOP, *NE-QA-QAS-SOP49197*.

11.5. Analyte Identification

11.5.1. The qualitative identification of each compound determined by this method is based on retention time, and on comparison of the sample mass spectrum, with characteristic ions in a reference mass spectrum. The characteristic ions from the reference mass spectrum are defined to be the three ions of greatest relative intensity, or any ions over 30% relative intensity if less than three such ions occur in the reference spectrum.

11.5.2. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion. The relative retention time (RRT) of the sample component is within ± 0.06 RRT units of the RRT of the standard component.

11.6. Duplicates (Relative Percent Difference):

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\ \%$$

X1 = Original Results
X2 = Duplicate

11.7. LCS Percent Recovery:

$$\text{LCS \% Recovery} = \left(\frac{\text{Observed Conc. in LCS}}{\text{True LCS Conc.}}\right) \times 100\ \%$$

11.8. MS Percent Recovery:

$$\% \text{ Recovery of MS} = \left(\frac{\text{Observed Conc. in Spiked Sample} - \text{Sample Conc.}}{\text{True Spike Conc.}} \right) \times 100\ \%$$

11.7 Relative Error calculation:

RE= |true conc – found conc|
True conc.

11.8 % RSE calculation:

To calculate RSE you need to know:

1. The true concentration of each calibration standard. This is x_i
2. The measured concentration of each calibration standard. This is x'_i
3. The number of standard levels in the curve. This is n
4. The type of curve (average, linear or quadratic) the type of curve determines the value of p. For an average curve, p=1, for linear p=2 and quadratic p=3

$$\%RSE = 100 \times \sqrt{\sum_{i=1}^{n} \frac{\left[\frac{x'_i - x_i}{x_i}\right]^2}{n-p}}$$

12) Method Performance

12.1. The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2. Demonstration of Capabilities – Prior to the analysis of samples, a Demonstration of Capabilities (DOC) as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.3. Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP, *NE-QA-QAS-SOP49199*, must be performed initially and whenever a significant change is made to the analytical system. The MDL must be re-evaluated from quarterly MDL points at least every 12 months.

12.4. Please refer to the Comprehensive Quality Assurance Manual, *QM-QM49163*, for laboratory-wide data management. Record keeping within the VOC Department includes information specific to analysts and instrumentation, such as Department methodology, SOPs, precision and accuracy studies, MDL, LOD, LOQ studies, calibrations, and instrument and sequence logbooks. The MDL study for each method and instrument are stored on the F drive, as are the precision and accuracy records performed by each analyst. IT manages periodic back-up of folders that store this information on the F drive.

12.5. Additionally, all calibration curves and BFB tunes are printed electronically and stored in the TALS batch. Completed logbooks for instrument sequences are labeled with beginning and end date and instrument and filed with the Quality Assurance Officer in chronological order.

13) Pollution Control

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England Facility Addendum EH&S Manual, NE-EHS-HS-SOP54687.

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution.

14) Waste Management

14.1. Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to NE-EHS-HS-SOP54687. The following waste streams are produced when this method is carried out:

14.1.1. Contaminated disposable glassware utilized for the analysis. This waste is placed in trash containers and disposed with the regular lab trash.

15) References

15.1. EPA method 8000 "Determinative Chromatographic Separations", EPA method 8000D, revision 5, March 2018.

15.2. SW-846 Update V, revision 2, July 2014.

15.3. EPA Method 8260 in "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry", EPA 8260C, Revision 3, August 2006.

15.4. EPA Method 8260 in "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry", EPA 8260D, Revision 4, June 2018.

15.5. WSC – CAM – II A, "Quality Control Requirements and performance standards for the analysis of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry in support of Response Actions under the Massachusetts Contingency Plan (MCP)", Department of Environmental Protection, Revision 2, November 2021.

15.6. "Guidance for the Evaluation of Tentatively Identified Compounds (TICs) for WSC – CAM – II A under the MCP", Department of Environmental Protection, Revision 1, September 08, 2009.

15.7. CT-DEEP Recommended Reasonable Confidence Protocols, Quality Assurance and Quality Control Requirements Volatile Organics by Method 8260, SW-846 Version 4.0 May 2024.

15.8. EPA Method 5030B, "Purge-and-trap for aqueous samples", Revision 2, December 1996.

15.9. EPA Method 5035A, "Closed-system purge-and-trap and extraction for volatile organics in soil and waste samples", Draft Revision 1, July 2002.

15.10. EPA Method 5030C, "Purge-and-trap for aqueous samples", Revision 3, May 2003.

15.11. 40CFR Part 136, appendix B

16) Method Modfications

None

17) Attachments

19.1. GC Instrument Method Conditions

19.2. Corrective Actions

19.3. Gas Chromatograph Preventative Maintenance Checklist

19.4. BFB Key m/z Abundance Criteria

18) Revision History

Revision 1, 12/17/19
- SOP put in use.

Revision 3, 6/3/20
- Problematic compounds updated
- Section X-E: MDL updated to most current revision
- Section XXI: 40CFR Part 136, appendix B added

Revision 4, 10/20/20

- Section III: Reference to SW-846 for glossary definitions
- Section VII: Addition of DOC component to training steps
- Section XI: clarification of use and limits of linear and forced regressions
- Section XI: addition of RRT requirements.
- Section XII: Identification of holding time for Acrolein analysis
- Section XVII: clarification of use of %drift and %D & retention time requirement in CCV
- Section XVIII: corrected tune criteria method
- Section XXI: updated reference to Method 8000D
- Section XV: E. Added analyte analysis guidance.

Revision 5, 11/2/20
- Section XI, B, 3: Updated to the calibration for RT, Spectra data, and Ion response added
- Table of contents page numbering updated.
- Section XIX lettering corrected

Revision 6, 1/29/22
- All references to Element updated to TALS
- Updates to Chrom software processing.

Changes to current revision:
Entire SOP: Re-formatted the SOP; Added references to 8260D; Changed 4°C to 0-6°C; Changed CCC to CCV; Added expiration criteria for 2-Cleve and the gas standard; Removed the following Sections as they have either been incorporated into other Sections or are covered under other SOPs-Cautions, Personnel Qualifications, Standard Preparation, Calibration, Sample Preparation and Analysis, Troubleshooting and Instrument Maintenance, Computer Hardware and Software, Data Management and Records; Attachment 1 removed, MA CAM table available online.
Section 1: Added prep and analytical methods; Added that PQLs are found in TALS.
Section 2, 4, 8, 19: Updated text and/or attachments.
Section 3: Added definitions and references to QAM and SW-846.
Section 5: Changed name from Health & Safety to Safety and updated text.
Section 6: Changed name from Apparatus and Materials to Equipment and Supplies; Updated HPV5 equipment to evolution, concentrator as EST Evolution; Updated HPV4 equipment; Updated text and other supplies.
Section 7: Updated text; Added Table 2 for part #s of standards; Updated standards and reagents.
Section 9: Added %RSE requirements
Section 10: Added pH & TRC strips; Updated text.
Section 11: Updated text; Added reference to *NE-QA-QAS-SOP49197*, added calculation for %RSE.
Section 12: Updated text; Added references to QAM and *NE-QA-QAS-SOP49199*.
Section 13: Changed name from Pollution Prevention to Pollution Control and updated text.
Section 14, 16, 17: Added new Section (Waste Management, Method Modifications, Attachments).
Section 15: MA CAM reference updated to new revision; CT DDEP RCP reference updated; Added reference for 8260D.

19) Appendix

19.1. GC Instrument Method Conditions

Oven Ramp	°C/minute	Next °C	Hold Minute

Initial		50	2.5
Ramp1	20	300	0
Ramp2	40	340	2

Injector: 300°C Detector: 300°C Carrier Gas: H_2 6ml/min

*- These parameters may change slightly depending on current GC performance.

19.2. Corrective Actions

If the continuing calibration technical acceptance criteria are not met, it becomes necessary to take corrective actions to achieve the acceptance criteria. Continuing calibration technical acceptance criteria ***MUST*** be met before any samples or required blanks are analyzed in an analytical sequence. Any samples or required blanks analyzed when continuing calibration criteria were not met will require reanalysis. Remedial actions, which include but are not limited to the following, must be taken when criteria are not met:

- Check and adjust GC operating conditions.
- Clean or replace injector liner.
- Flush column with solvent according to manufacturer's instructions.
- Break off a short portion (approximately 0.33 cm) of the column.
- Replace the GC column (performance of all initial calibration procedures are then required).
- Prepare and analyze new continuing calibration
- Prepare a new initial calibration curve.
- See also: Preventative Maintenance Checklist, Section 19.3.

19.3. Gas Chromatograph Preventive Maintenance Checklist

HP 6890 & 7890 Gas Chromatograph Preventive Maintenance Checklist

☐ If detectors are operational and in the "on" state: note the starting signal for later reference.
☐ Note instrument parameters.
☐ Power down the system.
☐ Open instrument covers and clean out any loose dirt or dust. Pay particular attention to cooling fans.
☐ Perform a general inspection looking for safety or electronic/mechanical failures. Including loose cables and proper insulation of heated zones.
☐ Power the instrument "on" and observe the self-test. Note any errors and refer to service manual.
☐ Check oven motor for noise and excessive vibration (spin down is a good qualitative indicator of bearing condition).
☐ Check operation of all cooling fans that are present for airflow (including inlet cooling fan, rear electronics fan, and oven intake fan).
☐ Check operation of oven flaps in the rear of the instrument.
☐ Perform injection port maintenance including replacement of the septum, inlet liner, inlet seal, and split line filter.
☐ Perform an inlet leak test as described in the appropriate instrument service manual.

☐ Clean and inspect the exterior of the instrument.

☐ If an autosampler (7673) is installed on the GC, then perform the required maintenance:

- Check bracket alignment and belt tension.
- Check tray, clean gripper jaws and tray arm.
- Check controller and clean any dust off of the boards, vents and cover.
- Check injector,
  - Pull out the injection turret and clean.
  - Clean the needle guide cone, the needle support and nearby surfaces.
  - Clean the surface of the injector.
  - Clean any dust that builds around the electronics assembly.
  - Re-install turret.

☐ Perform detector maintenance as required:

- Flame Ionization detectors include cleaning of the sample path and the jet. Check make-up gas flow, airflow, and hydrogen for proper settings. Light flame and note signal.
- Notes:_____
- Electron Capture detectors. Lab personnel cannot clean electron capture detectors. Check make-up gas flow, anode purge flow and note signal level. Depending on signal level and consistency of sensitivity, ECD may need to be exchanged; consult with logbook for detector history.
- Notes:_____
- Photo ionization detectors include checking auxiliary gas flow and signal level. Note that signal level is dependent on lamp power supply setting. Clean lamp lens. Replace lamp. Confirm proper connection of signal and power supply leads.
- Notes:_____

19.4. BFB Key m/z Abundance Criteria

BFB Key m/z Abundance Criteria[1]	
m/z	**Abundance Criteria**
50	15-40% of m/z 95
75	30-60% of m/z 95
95	Base Peak, 100% relative abundance
96	5-9% of m/z 95
173	<2% of m/z174
174	>50% but <200% of m/z 95
175	5-9% of m/z 174
176	>95% but <101% of m/z 174
177	5-9% of m/z 176

[1]- Abundance criteria are for a quadrupole mass spectrometer.
Alternative tuning criteria from other published EPA reference methods may be used, provided method performance is not adversely affected. Alternative tuning criteria specified by an instrument manufacturer may also be used for another type of mass spectrometer, or for an alternative carrier gas, provided method performance is not adversely affected.

QM-QM49163 Quality Assurance Manual
NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-QA-QAS-SOP49197 Manual Integration for Chromatographic Peaks
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits

End of document

Version history

Version	Approval	Revision information	
6	20.SEP.2022	D4 Template for Analytical SOPs -	
7	14.JUN.2024		
8	08.AUG.2024		

eurofins	Always check on-line for validity. **Semi volatile Organic Compounds by Gas Chromatography Mass Spectrometry: Capillary Column Technique SW846 8270D Method**	Level: **Standard Operating Procedure**
Document number: **NE-ORG-GCMS-SOP49310**		
Old Reference: **50.008**		
Version: **3**		Organisation level: **4-Business Unit**
Approved by: **BAA3, HFO2, SBB9** Effective Date: **14-JUN-2024**	Document users: **EENE_SEMIs, EENE_VOAs**	Responsible: **EENE_QA**

1) Scope and Application

1.1. This method is used to determine the concentration of certain semi-volatile organic compounds in extracts from various solid wastes, soils and water samples. Refer to Table 3 for the list of compounds that can be determined by this method.

1.2. Using a gas chromatographic fused-silica capillary column, coated with a slightly polar silicone, most basic, neutral, and acidic organic compounds should be able to be seen as sharp peaks: assuming the compounds are soluble in methylene chloride and capable of being eluted without derivatization. Refer to Table 3 for a list of polynuclear aromatics, phthalate esters, organophosphate esters, nitrosamines, haloethers, aldehydes, anilines, pyridines, aromatic nitro compounds, and phenols (including nitrophenols) and their characteristic ions.

1.3. When multi-component analytes such as aroclors, toxaphene, and technical chlordane have been identified by using another technique, this method may be used to confirm their presence. This method is not appropriate for their quantitation.

1.4. The following compounds may require special treatment:

1.4.1. Benzidine may have poor chromatographic behavior due to oxidative losses during solvent concentration.

1.4.2. Hexachlorocyclopentadiene may result in thermal decomposition in the inlet of the GC. If in acetone, it may chemically react and may result in photochemical decomposition.

1.4.3. It is difficult to separate N-nitrosodimethylamine from the solvent peak under the GC conditions specified in these methods.

1.4.4. N-nitrosodiphenylamine cannot be separated from diphenylamine and decomposes in the GC inlet.

1.4.5. Phenols and anilines such as pentachlorophenol, 2,4-dinitrophenol, 4-nitrophenol, 4,6-dinitrophenol, 2-methylphenol, 4-chloro-3-methylphenol, 2-nitroaniline, 3-nitroaniline, 4-chloroaniline, and benzyl alcohol are subject to random chromatographic behavior. This will occur most often if the GC is contaminated with high boiling material.

1.5. If the injection port temperatures specified in these methods are used, pyridine may perform poorly. It is suggested that lower injector port temperatures be used with caution due to the fact that other analytes may be compromised.

1.6. Analysts using this SOP should either be supervised or should be experienced in the use of gas chromatograph/mass spectrometers and skilled in the interpretation of mass spectra.

1.7. The current Reporting Limit (RL) and the Practical Quantitation Limits (PQL) for this method can be found in the matrix specific Method Limit Group in TALs.

2) Summary of Method

2.1. The samples are prepared for analysis by gas chromatography/mass spectrometry (GC/MS) using the appropriate sample preparation (3510C Separatory Funnel Liquid-Liquid Extraction) and, if necessary, sample cleanup procedures (refer to Method 3600).

2.2. The semi-volatile compounds are introduced into the GC/MS by injecting the sample extract into a gas chromatograph (GC) with a Phenomenex ZB-5MPlus 30m, 0.25 mm ID, 0.25 um df fused-silica capillary column (or equivalent). The GC column is temperature-programmed to separate the analytes, which are then detected with a mass spectrometer (MS) connected to the gas chromatograph.

2.3. Analytes eluted from the capillary column are introduced into the mass spectrometer via a direct connection. Identification of target analytes is accomplished by comparing their mass spectra with the electron impact (or electron impact-like) spectra of authentic standards. Quantitation is accomplished by comparing the response of a major (quantitation) ion relative to an internal standard using a six-point calibration curve.

2.4. The method includes specific calibration and quality control steps that supersede the general requirements provided in Method 8000.

3) Definitions

3.1. TALS –Laboratory Information Management System (LIMS)

3.2. NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

3.3. Refer to the glossary in the Laboratory Quality Manual (*QM-QM49163*) for additional definitions.

3.4. Analytical Batch is defined as a group of field samples with similar matrices which are processed as a unit. For Quality Control purposes, if the number of samples in such a group is greater than 20, then each group of 20 samples or less are defined as separate analytical batches.

3.5. Continuing Calibration Verification (CCV) is defined as a calibration standard used to periodically check the calibration state of an instrument. The calibration check standard is prepared from the same stock standard solution as calibration standards, and is generally one of the mid-level range calibration standard dilutions.

3.6. Calibration Standards are defined as a series of standard solutions prepared from dilutions of a stock standard solution, containing known concentrations of each analyte and surrogate compound of interest.

3.7. Field Duplicates are defined as two separate samples collected at the same time and location under identical circumstances and managed the same throughout field and laboratory procedures. Analysis of field duplicates gives a measure of the precision associated with sample collection, preservation and storage, as well as laboratory procedures.

3.8. Laboratory Duplicates are defined as split samples taken from the same sampling container and analyzed separately with identical procedures. The analysis of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

3.9. Laboratory Method Blank is defined as an aliquot of reagent water or clean sand spiked with a surrogate standard. The laboratory method blank is treated exactly as a sample, exposed to all glassware, solvents, reagents, and equipment. A laboratory method blank is analyzed with every batch of samples, to determine if method analytes or other interferences are present in the laboratory environment, reagents, or equipment.

3.10. System Solvent Blank is defined as an aliquot of a method solvent (e.g., hexane or methylene chloride, pesticide grade or better, that is directly injected into the GC system. The purpose of the System Solvent Blank is to determine the level of noise and baseline rise attributable solely to the GC system, in the absence of any other analytes or system contaminants.

3.11. Surrogate Standards are compounds spiked into all samples, blanks, and matrix spikes to monitor the efficacy of sample extraction, chromatographic, and calibration systems.

3.12. All other terms are as defined in SW-846, "Test Methods for Evaluating Solid Waste", USEPA, September 1986, and as amended and updated.

4) Interferences

4.1. Method interferences may be caused by contaminants in other reagents and glassware (i.e., TurboVap Concentrator). To prevent cross contamination of samples, all these materials must be routinely and thoroughly cleaned before each use. To minimize this possibility of cross contamination, all preparations of samples and standards will be done in the extraction room hood.

4.2. Carryover is the result of running a sample that contains high levels of heavy petroleum distillates. The interference is the lingering contaminants of a heavily contaminated sample that does not burn off in the normal run time and are present in the following run. To avoid problems due to carryover, analysts must dilute samples that may be heavily contaminated and run solvent blanks after high level samples.

4.3. Matrix interferences by co-extracted materials such as plant matter, animal fats, waxes and phthalate ester can pose a major problem in 8270D determination when using the GC/MS. An exhaustive clean-up of reagents and glassware may be required to eliminate background phthalate contamination.

5) Safety

5.1. Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.2. The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Acetone	Flammable	1000 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache.
Hexane	Flammable Irritant	500 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. Overexposure may cause lightheadedness, nausea, headache, and blurred vision. Vapors may cause irritation to the skin and eyes.
Methylene Chloride	Carcinogen Irritant	25 ppm (TWA) 125 ppm (STEL)	Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting, and headache. Causes irritation, redness and pain to the skin and eyes. Prolonged contact can cause burns. Liquid degreases the skin. May be absorbed through skin.
Dichloro-Dimethyl	Flammable, Carcinogen,	20 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. Overexposure may cause

silane	irritant, toxic		lightheadedness, nausea, headache, and blurred vision. Vapors may cause irritation to the skin and eyes. May be absorbed through skin.
Hydrogen Gas	Explosive	None	The main hazard is flammability. Exposure to moderate concentrations may cause dizziness, headache, nausea, and unconsciousness. Exposures to atmospheres less than 8 to 10% oxygen will bring about sudden unconsciousness, leaving individuals unable to protect themselves. Lack of sufficient oxygen may lead to suffocation.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.3. Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded; other gloves will be cleaned immediately.

Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.4. The preparation of standards, reagents, and glassware cleaning procedures that involve solvents such as methylene chloride will be conducted in a fume hood with the sash closed as far as the operations will permit. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the fume hood and store the containers in the specified chemical cabinets.

5.5. All work must be stopped in the event of a known or potential compromise to the health and safety of a Eurofins associate. The situation must be reported immediately to a laboratory supervisor or the EH&S coordinator.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. HPS6

Agilent 7890A series gas chromatograph with a 4513 series injector
Agilent 5975C VL Mass Selective Detector
Column – ZB-5MSplus, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.2. HPS8

Agilent 7890A series gas chromatograph with a 4513 series injector

Agilent 5975C XL Mass Selective Detector
Column – ZB-5MSplus, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.3. HPS5

Agilent 6890N series gas chromatograph with a 7683 series injector
Agilent 5975C XL Mass Selective Detector
Column – ZB-5MSplus, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.4. HPS23

Agilent 7890 series gas chromatograph with a 4513 series injector
Agilent 5975C Mass Selective Detector
Column – ZB-5MSplus, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.5. Each instrument runs on its own computer, and operated by Chemstation Software. The laboratory-wide LIMS program TALS is used for data entry and review, the chromatography software is Chrom.

6.6. Laboratory Oven (Blue M)

6.7. Centrifuge (variable speed lab grade)

6.8. Analytical Balance Capable of Accurately Weighing 0.0001g

6.9. PTFE Separatory Funnel = 2000 ml with Teflon

6.10. Volumetric Flasks (class A): 1mL, 2mL, 10mL, 25mL, 50mL, 100mL, 200mL, 1000mL

6.11. Vials = 2mL, Teflon-Lined crimp cap and PTFE Rubber-Lined Crimp Top

6.12. PTFE Solvent Wash Bottle

6.13. Disposable Borosilicate Glass Pasteur Pipettes

6.14. 100mL Graduated Cylinder (class-A)

6.15. Microsyringe: 10 uL, 100 uL, 250 uL, 500 uL, 1000 uL

6.16. Dispensett- capable of dispensing 25 ml of solvent

6.17. Metal Spatula

6.18. Filter Paper; Fisher P8 Filter Paper or equivalent

6.19. Crimper and Decrimper for 2 ml Vials

6.20. Glass Filter Funnel

6.21. PTFE Stirring Rod with Magnetic End

6.22. "Glass-Col" 3-D Shaker

6.23. TurboVap Concentrator

6.24. CEM Mars6 Microwave, with Teflon vessels, ferrules, and caps

6.25. Drying Oven

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Methylene chloride (CH_2Cl_2) – GC resolve

7.2. Hexane – pesticide quality or equivalent

7.3. Sodium sulfate: granular, anhydrous and purify by heating at 400°C for four hour
.

7.4. Reagent water: deionized water (ASTM Type I)

7.5. Methanol (CH_3OH) – ASC grade or equivalent

7.6. Acetone – ASC grade or equivalent

7.7. Alconox cleaning agent

7.8. Washed Sea Sand; Fisher # S25-3

7.9. Internal standard solutions must include the following compounds: 1,4-dichlorobenzene-d4, napthalene-d8, acenapthene-d10, phenanthrene-d10, chrysene-d12, and perylene-d12 (Restek # STM-5401). For the SIM analysis include 2-Methylnapthalene-d10 and Fluoranthene-d10 (Restek # 33913).

7.10. For every 1 ml of calibration solution, 20 µl of internal standard solution (500 ug/ml) should be added prior to analyses (10ug/ml final). SIM analysis should be spiked with 20 ul of SIM internal standard solution (25 ug/ml)(0.5 ug/ml final) All standards should be stored at minus 4 degrees C or less.

7.11. A GC/MS tuning standard should be prepared that contains 50 ug/ml of DFTPP Benzidine and Pentachlorophenol (Absolute #43032).

7.12. The calibration standard stock solution should consist of all of the target compounds at a concentration of 200 ug/ml. This is purchased from NSI Solutions (# Q-7778-O) and includes the surrogate compounds as well, refer to TALS for tracking number.

7.13. Initial calibration Verification (ICV)/ Continuing Calibration Verification (CCV) solutions are bought from a second source provider, Absolute Standards, at a concentration of 50 ug/ml in DCM;(#67278). Refer to TALS for tracking number.

7.14. Laboratory Control Spike (LCS) /Matrix Spike (MS) solutions are bought from Absolute at a concentration of 50 ug/ml in methanol; (#98160) refer to TALS for tracking number.

7.15. Surrogates used for 8270D analysis. Surrogate spike is a mix of nitrobenzene-d5, 2-flurobiphenyl, terphenyl-d14, 2,4,6-tribromophenol, phenol-d5, and 2-flurophenol, purchased from NSI(#C603). Sim surrogate is 2-Chlorophenol-d4 & Benzo€pyrene-d12 form NSI (#Q9496-O).

7.16. Expiration dates for prepared standards are 6 months from prepared date. Expiration date for pure products is 5 years from day of purchase. Expiration dates for ampules are assigned by the vendor or one year after open.

7.17. Any standard/reagent that comes with a Certificate of Analysis must be scanned into TALS-reagent tab. Ensure proper labeling of standards including a TALS ID, received date, expiration date, and opened/prepared date.

7.18. Analysts must check all standards for expiration dates on a specific timeframe.

8) Sample Collection, Preservation, Shipment and Storage

8.1. Collect samples as grab samples in amber or clear glass bottles, or in refrigerated bottles using automatic sampling equipment. If clear glass is used, protect samples from light. Collect 1-L or 250ml of ambient waters, effluents, and other aqueous samples. If the sensitivity of the analytical system is sufficient, a smaller volume (e.g., 250 mL). If needed, collect additional sample(s) for the MS/MSD.

8.2. Ice or refrigerate samples at 0-6°C from the time of collection until extraction, but do not freeze. If residual chlorine is present, add 80 mg of sodium thiosulfate per liter of sample and mix well. Any method suitable for field use may be employed to test for residual chlorine. Add more sodium thiosulfate if 80 mg/L is insufficient but do not add excess sodium thiosulfate. If sodium thiosulfate interferes in the determination of the analytes, an alternate preservative (e.g., ascorbic acid or sodium sulfite) may be used.

8.3. Sample Collection, Preservation and Handling

8.3.1. All samples must be cooled to 0-6°C immediately after collection.

8.3.2. A Chain of Custody must accompany all samples that are submitted for analysis documenting the time and date of sampling and any addition of preservative.

8.3.3. A summary of sample collection, preservation and holding times is provided in Table 1.

Table 1
Holding Times and Preservation

Matrix	Container	Preservation	Holding Time

Aqueous Samples	1L or 250mL amber glass bottle with Teflon-lined screw cap	No preservation; Dechlorinate as needed Cool to 0-6°C	Samples must be extracted within 7 days and analyzed within 40 days
Soil/Sediment Samples	4-oz. or 8-oz wide mouth amber glass jar with Teflon-lined screw cap.	Cool to 0-6°C	Samples must be extracted within 14 days and analyzed within 40 days

9) Quality Control

Table 2 – QC Requirements-FID

Quality Controls	Frequency	Control Limit
DFTPP	At the beginning of a 12 hr shift	See criteria in Table 6
Initial Calibration	As necessary	%RSD<20%, If linear or Quad regression is used R^2>0.990, & RSE<20% Re-calibrate if >10 exceed limits
ICV (Second Source Standard)	After ICAL	<20%D with 20% allowed at 65-135%% Problematics at 50-150%
Continuing Calibration Verification CCV	Before analytical batch of 20 sample injections	<20%D with 20% allowed at 65-135% Problematics at 50-150% IS response must be 50-200% if ICAL
Method Blank (MB)	One per extraction batch (up to 20 samples)	Value less than the RL
Laboratory Control Sample (LCS)	One per extraction batch (up to 20 samples)	Lab generated limit, see TALS MCP/RCP: 40-140% B/N & 30-130Acid; 15-140% problematics
Laboratory Control Sample Duplicate (LCSD)	One per extraction batch (up to 20 samples)	Lab generated limit, see TALS MCP/RCP: 40-140% B/N & 30-130Acid; 15-140% problematics RPDs must be <20 for waters and <30 for solids
Matrix Spike (MS/MSD)	As requested per client	Lab generated limit, see TALS MCP/RCP: 40-140% B/N & 30-130% Acid; 15-140% problematics RPDs must be <20 for waters and <30 for solids

Quality Controls	Frequency	Control Limit
DFTPP	At the beginning of a 12 hr shift	See criteria in Table 6
Internal Standard (for GC/MS)	Every sample	Recovery 50-200% of opening CCV

9.1. A minimum of five calibration standards are analyzed, six if quadratic regression is used. The calibration standards must be prepared from the primary standard to construct a calibration curve. The concentration range of these standards must bracket the linear working range of the instrument for all components. The lowest calibration point must be less than or equal to the analyte RL. On a routine basis, the calibration will be prepared from the primary stock solution in DCM at the following concentrations: 0.25, 0.5, 1.0, 2.5, 5.0, 10, 12.5, 20, and 25 ug/mL.(0.01, 0.025, 0.05, 0.10, 0.50, 1.0, 2.5, & 5.0 ug/ml for SIM).

9.2. A DFTPP evaluation must be analyzed prior to each initial calibration and 12hr shift. The DFTPP spectra must fall within the criteria outlined in table 5. The relative standard degradation of DDT to DDE and DDD will not exceed 20%. Benzidine and Pentachlorophenol will be present at their normal response and tailing factor <2 for Benzidine and Pentachlorophenol.

9.3. Inject and analyze 4µL of each calibration standard level with 10ug/ml of internal standard in each. Results match calibration. The Chrom software is formatted to calculate the area of the primary characteristic ion (response factor = RF) against concentration for each compound. Be sure that the concentration of internal standard is the same throughout all levels of the calibration curve.

9.4. Calibration Requirements

9.4.1. The RF generated in the CHROM software are used to build the calibration curve. Average response, linear and quadratic regression models are allowed. The relative standard deviation (RSD) must be <20% on an average fit model. If it exceeds this then a linear or quadratic regression in needed and must have a r^2 value of ≥ 0.99 and RSE of <20% for all of the semi volatile compounds. Calibration is considered invalid if >10% of analytes exceed %RSE or r^2 criteria and must be re-analyzed.

9.4.2. If linear or non-linear regression is used, the RL should be verified by recalculating the lowest calibration standard using the final calibration curve: recoveries must be less than 30%D. If less than 30% is not met then the reporting limit for the compounds out of compliance need to be raised to a passing calibration level (only if it does not affect the reporting limit).

9.4.3. A second source calibration verification (ICV) must be run after the initial calibration. Concentration must be near the mid-point level of the calibration. Percent recoveries must be within 80-120% with an allowance of 20% of the compounds out, as long as all compounds are within 65-135% recovery, except for those identified as poor performers which may recover within 50-150%. If any analyte fails the initial ICV, a second ICV can be rerun as long as it is prior to sample analysis. If the second ICV passes, testing may resume, otherwise recalibration is necessary.

9.4.4. Calibrations points must be run as a 'single event'. All points must be run within the same 12 hour tune window. If a point is dropped from the middle of the curve, then the whole point is to be discarded. If a point needs to be rerun, it must be done in the same run as the rest of the curve, prior to sample analysis.

9.5. Continuing Calibration

9.5.1. A continuing calibration standard is analyzed to check the initial curve before running any samples.

NOTE: Another DFTPP must pass criteria before analyzing the continuing calibration every 12 hours.

9.5.2. The Chrom software is programmed to calculate the % recovery each compound. To see a report on the % recover for a Continuing Calibration, click F8 key.

9.5.3. The % difference should be less than 20% D for all target analytes in full scan and SIM utilizing a RF model calibration and 20% concentration drift when using a regression fit. Percent recoveries must be within 20% D with an allowance of 20% of the compounds out, as long as all compounds are within 35% D recovery. Analytes identified as poor performers may be recovered at 50%D. Any analyte that fails the limits must be reported as estimates for detects and must demonstrate adequate sensitivity of >10% recovery (LLCV or LCS). If greater than 20% of all target analytes it indicates the need for instrument maintenance. If this does not correct the problem, a new initial calibration curve must be generated and another continuing calibration check must be done. If the criteria are met, then it is assumed that the initial calibration curve is valid.

9.5.4. The responses and retention times of the internal standards must be checked. The retention times should not change by more than 30 seconds from mid-point value in the initial calibration, and response area -50% to +100%. If the retention times do shift by more than 30 seconds, the system must be inspected for improper functions and the proper corrections should be made according to the appropriate maintenance SOP. Any samples that were analyzed after the failed continuing calibration check must be re-analyzed.

9.6. GC/MS Analysis of Samples

9.6.1. Eurofins Environment Testing, Inc. adheres to a strict quality assurance and quality control plan to assure accurate and precise results. The following quality control steps are specific to this method. Each analyst must comply with these steps to ensure the quality of results.

9.6.1.1. System Blank (Instrument QC)

9.6.1.2. DFTPP

9.6.1.3. 10 ug/ml / 50 ug/ml CCV

9.6.1.4. Method Blank

9.6.1.5. Laboratory control sample

9.6.1.6. Laboratory control sample duplicate

9.6.1.7. Matrix Spike/Duplicate (as requested)

9.6.2. All samples QC are spiked with surrogates which need to be within control limits. If two or more surrogates for any one fraction (base-neutral or acid) are outside control limits or if any one surrogate recovery at < 10, re-extraction of sample is necessary, unless matrix interference has been indicated in the extraction. If surrogates are low due to dilution, re-extraction is not necessary. Note the non-compliance in the case narratives. If re-extraction confirms original analysis, both extractions should be reported. If re-extraction is performed within holding time and surrogates pass criteria, the re- extraction is reported. If sample is not re-extracted due to a complex matrix, note the non-compliance in the case narratives.

9.6.3. LCS/LCSD are evaluated against the appropriate control limits. Lab generated limits are held in TALs and the number of marginal exceedances, <10% of compounds, allowed depends on the total number of analytes spiked in the LCS. For MCP/RCP samples the base/neutral compounds may recover 40-140% and the acid compounds may recover at 30-130%, except for the problematics which may recover at 15-140%. The RPD of the duplicates must be less than 20% for waters and 30% for soils.

9.7. Daily quality control checks, other than running the system blank, CCV / LCS/LCSD / MB are: a matrix spike/duplicate sample is analyzed as requested. DFTPP tune checked first in every batch daily. Any flagged values or QC failure in TALs will require identification and rational in the sample NCM.

9.7.1. The responses and retention times of the internal standards must be checked in all QC and samples. The retention times should not change by more than 30 seconds from the last continuing calibration check, and response area -50% to +200%. If the retention times do shift by more than 30 seconds, the system must be inspected for improper functions and the proper corrections should be made according to the appropriate maintenance SOP. Any samples that failed evaluation must be re-analyzed and re-extracted after repeated failure, unless there is a clear indication of interference.

9.8. Qualitative Analysis

9.8.1. Based upon retention times and comparison of the sample mass spectrum, this method will dictate the qualitative identification of analytes on a scale of 0 to 100; 0 being the worst quality of identification and 100 being a perfect match. The reference mass spectra should be established by the laboratory using the identical operating conditions and criteria as described in this method. The characteristic ions are defined by identifying the three or four ions with the greatest abundance.

9.8.2. The following criteria must be met to positively identify a compound.

9.8.2.1. The Chrom software should be programmed such that it will search for specific ions in a single scan or within two scans in a compound specific retention time window of 2 minutes.

9.8.2.2. The relative retention time (RRT) should be within +/-0.06 units of the standard component.

9.8.2.3. The characteristic ions should have intensities with +/30% of the ions in the reference spectra.

9.8.2.4. Refer to method 8270D for additional information.

9.8.2.5. It becomes difficult to identify analytes when the peaks are not of symmetrical shape, or when it is obvious that the peak represents more than one analyte. (It is critical to be able to choose the appropriate spectra. Using the NIST library may aid in the identification of an analyte by using it in the comparison of spectrum).

9.8.2.6. A library search may be used on a tentative basis when looking for compounds that are not on the target compound list. The reporting of such compounds shall be determined by the nature of the request.

9.9. Quantitative Analysis

9.9.1. The quantitation of an identified compound is based upon the integrated area of the primary ion compared to its respective internal standard integrated area.

9.9.2. The analyte will be reported with a concentration that falls within the working linear calibration range of the instrument. If the sample requires a dilution, the analyte will be reported form the least dilute level which falls within the working range.

9.9.3. Evaluating Tentatively Identified Compounds

9.9.3.1. All spectra must be evaluated by a qualified analyst.

9.9.3.2. The spectral library match must be $\geq$ 85% for a tentative identification to be made.

9.9.3.3. The major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should present in the sample spectrum.

9.9.3.4. Structural isomers that produce very similar spectra can be explicitly identified only if they have sufficiently different chromatographic retention times. Acceptable resolution is achieved if the height of the valley between two peaks is less than 50% of the average height of the two peaks. Otherwise, structural isomers are identified as isomeric pairs.

9.10. SIM (Selective Ion Monitoring) Analysis

9.10.1. Low-level SIM work is often run due to instrument sensitivity and loss of PAHs at lower concentrations. All samples submitted for SIM analysis are prepared and concentrated following standard procedures of the SOP for SVOC Sample Preparations. The batch MB, LCS and LCSD will be always be run against the SIM calibration. Any positive hits in the blank and affected client samples will be qualified with "B" in TALS to alert the client. If there is sufficient volume the affected samples will be re-extracted for confirmation.

9.10.2. The major difference of the SIM analysis lies in the calibration and quantitation of the data. Data is collected using SIM mode available with the Chrom software. SIM ions and groups are determined automatically using "Generate AutoSIM Method" found in the Chemstation software. Target analytes, surrogates and internal standards are assigned a minimum of two ions (primary ion or quantitation ion and a confirmation ion), and confirmed based on RT and ion quality.

9.11. Manual Integrations: please refer to the SOP *NE-QA-QAS-SOP49197*.

9.12. Corrective Actions for QC Recovery outside of criteria are as follows:

9.12.1. If any surrogate (base-neutral or acid) is outside limits, attempt to find and correct the cause of the failure. Re-extraction of sample may be necessary, if enough sample is provided by the client. If surrogates are low due to dilution, re-extraction is not necessary. Add a rationale to the narrative for any affected samples.

9.12.2. Note the non-compliance in the case narratives.

9.12.3. If re-extraction confirms original analysis, both extractions should be reported.

9.12.4. If re-extraction is performed within holding time and surrogates pass criteria, the re-extraction is reported.

9.12.5. If sample is not re-extracted due to a complex matrix, an NCM must be generated identifying the issue and a chromatogram must be available to report.

9.13. Corrective Actions for LCS and Matrix spike recovery outside of criteria are as follows:

9.13.1. If any analyte is outside limits set, attempt to find and correct the cause of the failure. A LCS duplicate may be analyzed if extracted with the batch. Re-extraction of sample may be necessary, if both LCS samples are outside acceptance limits and if enough sample is provided by the client.

9.13.2. If the Matrix spike is outside limits, check the pattern chromatography and sample extraction notes for an indication of interference. A NCM must be generated identifying the issue.

10) Procedure

10.1. 3510C LVI 8270D /625.1 – Semi-Volatile Compounds Extraction

10.1.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware used for the extraction and needs to be double checked by a secondary tech before the extraction begins.

10.1.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not, there must be a comment in the comment section of the bench sheet. If there is no comment, then the sample is expired and must be brought to management's attention immediately.

10.1.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.1.4. Check the pH of the sample with wide-range pH paper. It should be between 5.0 and 9.0. Record initial pH on the bench sheet. The pH is checked by dipping a pipette into the sample and

touching it to the pH paper.

10.1.5. Adjust the pH of the sample to <2 with 1:1 H_2SO_4 for 8270D/625.1 samples. Check with wide-range pH paper and record this pH on the bench sheet.

10.1.6. Mark the water meniscus on the side of the glass sample container or pour off 250ml into a Class A graduated cylinder, Spike all waters with 200ul of 8270D surrogate and transfer the contents to a 2L separatory funnel. Spike 200ul of 8270D LCS spikes into the batch LCS/D. If there are MS/D on the batch they receive 200ul of 8270D LCS spike as well. If there are 8270D SIM samples on the batch a second set of LCS/LCSD must be extracted. These are spiked with 200ul of the 8270D SIM-LCS spike.

10.1.7. Add 15mL of CH_2Cl_2 to the sample container; rinse the entire surface and transfer the solvent to the separatory funnel.

10.1.8. Seal and shake the separatory funnel vigorously with a "glass-col" 3-D shaker for 2 minutes with periodic venting to release excess pressure.

10.1.9. Replace the funnel in its stand and allow the water and the CH_2Cl_2 phases to separate for a minimum of 10 minutes. If the emulsion interface between layers is more than 1/3 the size of the solvent layer, the tech must employ mechanical techniques to complete the phase separation. A stirring rod, pre-cleaned with CH_2Cl_2 will work in most cases. If emulsion still occurs, the emulsion layer is transferred into 40ml VOAs and centrifuged for phase separation. Transfer back the aqueous layer to the separatory funnel.

10.1.10. Slowly drain the CH_2Cl_2 layer through a filter funnel containing filter paper and about 5g of rinsed sodium sulfate into a labeled nipple condenser.

10.1.11. Repeat the extraction with 15ml of CH_2Cl_2 added to separatory funnel two more times. The extracts are combined into the same nipple condenser each time along with thoroughly rinsing the filter funnel each time.

10.1.12. Adjust the pH of the sample to 11-13 by adding 10N NaOH. Serially extract the base/neutral aqueous phase three times with 15mL of methylene chloride each shake.

10.1.13. The initial volume is taken by returning the extracted water from the separatory funnel to the original amber liter. The level is brought to the line that was marked as the meniscus and then poured into a Class A volumetric flask. The initial volume is recorded on the bench sheet.

10.1.14. The extract is now ready for the concentration step.

10.1.15. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.2. 3546 8270D – Semi Volatile Compound Extraction

10.2.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware used for the extraction and needs to be double checked by a secondary tech before the extraction begins.

10.2.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not there must be a comment in the comment section of the bench sheet. If there is no comment then the sample is expired and must be brought to management's attention immediately.

10.2.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.2.4. Wait for sample to come to room temperature. Using a metal spatula mix the sample well inside its own container to homogenize the entire matrix.

10.2.5. Weigh approximately 30 grams of soil into a tared microwave vessel. Record the balance ID on the bench sheet. Record weight on bench sheet.

10.2.6. Add 1 mL of 8270D surrogate solution into the sample. If the sample is a quality control sample, add 1mL of the 8270D spike.

10.2.7. Add 25 ml of 1:1 methylene chloride/Acetone; hand tighten the cell caps (may need to adjust volume to 25-40 ml according to the matrix).

10.2.8. Place the vessel in the sleeves and onto the rotor then into the microwave. (A minimum of 8 cells can be run at a time. Use the center row and space the cells out evenly.)

10.2.9. Go onto the one touch method, Select the appropriate method for the samples you are running and press start.

10.2.10. Extraction Conditions:

	Ramp (min)	Hold	Power	Temperature (^{o}C)
3546 100C Xpress(Small cells)	15-20	15	1030-1800	100
3546 100C Xpress plus(large cells)	15	15	290-1800	100
3546 100C Xpress plus glass (large cells with liners)	15	15	500-1500	100

10.2.11. When the microwave has finished running, remove samples tray and filter the samples through filter paper containing ~5g of sodium sulfate and collect in a labeled nipple condenser.

10.2.12. The extract is now ready for the concentration step.

10.2.13. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.3 Concentration steps

10.3.1 The lab tech is responsible for labeling all needed vials with the correct number for the sample. The Lab ID, analysis, final volume, and techs initials are recorded in the bench sheet. Carefully pour the sample extract into the Turbovap nipple condenser and load the glassware into the vap.

10.3.2 Close the main lid, activate the active cells by pressing the associated button. The vap will initiate upon closure of the lid.

10.3.3 Maintain an ongoing visual observation of the concentration process through the window on the main lid. Once the solvent has reached a lower level, 10-2ml, the vap can be paused by simply lifting the main lid. The vap will continue once the lid closes.

10.3.4 Once the concentration process is complete, press the cell button to cancel gas flow or open the main lid. Transfer the nipple condenser.

10.3.5 Vial and store the concentrated extract according to each SOP.

10.3.6 Concentrate the extracts to approximately 1ml. Do not let the sample go dry. If a sample goes dry, re-extract the entire sample.

10.3.7 Using a 9" disposable glass pipette transfer the extracts to a calibrated 2ml auto sampler vial. Rinse the flask with methylene chloride and use the rinsate to top off the extract to 1ml. If sample will not go down to recommended volume, note the final volume in the bench sheet

.

NOTE: If using the 2 mL auto-sampler vials to determine the extract volume, Calibrate a vial with a volumetric syringe.

- **Measure out 1ml of solvent in a 1ml volumetric syringe, and transfer the solvent to the 2ml vial and cap the vial**
- **Mark off the solvent level on the vial and use this vial as a measuring tool.**
- **Calibration of the 2 mL auto-sampler vial should be done each day and for each solvent**

11) Calculations / Data Reduction

11.1. Calculating the response factor (RF)

11.1.1. For the internal standard calibration, the RF represents the key to calculating final concentrations of each analyte in the sample. The RF is calculated as follows by using information taken from a known sample.

$$RF = (As \times Cis)/(Ais \times Cs)$$

Where:
As = Response (in area) for the parameter to be measured
Ais = Response (in area) for the internal standard
Cis = Concentration of the internal standard

Cs = Concentration of the parameter to be measured

11.2. Calculating Analyte Concentration

11.2.1. Using the above calculation, the concentration of the analyte found in an actual sample can then be calculated:

Cr (ug/l) = (As x Cis)/(Ais) (RF)

Where:
As = Response for the parameter to be measured
Ais = Response for the internal standard
Cis = Concentration of the internal standard
Cr = the raw concentration (ppb) obtained from the computer printout

11.2.2. The following equation is used to calculate the actual concentrations of constituents found in a liquid sample. The raw data generated by the software is used:

C = Cr x df

Where:
df = the dilution factor

11.3. Evaluating Tentatively Identified Compounds

11.3.1. All spectra must be evaluated by a qualified mass spectrometrist.

11.3.2. The spectral library match must be ≥ 85% for a tentative identification to be made.

11.3.3. Structural isomers that produce very similar spectra can be explicitly identified only if they have sufficiently different chromatographic retention times. Acceptable resolution is achieved if the height of the valley between two peaks is less than 25% of the average height of the two peaks. Otherwise, structural isomers are identified as isomeric pairs.

11.4. Manual integration

11.4.1. Manual integration is rarely used when interpreting GC/MS data. When data needs to be manually integrated an automated program will capture the graphics of both the before and after manual integrations. In the case of Quality control data (i.e. CCV, LCS, LCSD, MS, MSD) a separate sheet will be printed with the picture of all the before/after manual integrations and will be attached to that specific QC. These printouts can be found attached following the raw data. Along with the before and after chromatograms the analyst must pick one of several specific reasons as to explain why the manual integration was necessary. The analysts will be attached to each integration, the corresponding reason, and this information will be automatically printed underneath the analyte on the generated report.

11.4.2. All manual integration or peak to peak integration is performed from valley to valley and will be reviewed by management for concurrence and approval in accordance with the Manual Integration SOP, *NE-QA-QAS-SOP49197*.

11.5. Analyte Identification

11.5.1. The qualitative identification of each compound determined by this method is based on retention time, and on comparison of the sample mass spectrum, with characteristic ions in a reference mass spectrum. The characteristic ions from the reference mass spectrum are defined to be the three ions of greatest relative intensity, or any ions over 30% relative intensity if less than three such ions occur in the reference spectrum.

11.5.2. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion. The relative retention time (RRT) of the sample component is within ± 0.06 RRT units of the RRT of the standard component.

11.6. Duplicates (Relative Percent Difference):

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\ \%$$

X1 = Original Results
X2 = Duplicate

11.7. LCS Percent Recovery:

$$\text{LCS \% Recovery} = \left(\frac{\text{Observed Conc. in LCS}}{\text{True LCS Conc.}}\right) \times 100\ \%$$

11.8. MS Percent Recovery:

$$\text{\% Recovery of MS} = \left(\frac{\text{Observed Conc. in Spiked Sample} - \text{Sample Conc.}}{\text{True Spike Conc.}}\right) \times 100\ \%$$

11.9 % Error calculation for curve readback:

$$\%E = \frac{|\text{true conc} - \text{found conc}|}{\text{True conc.}} * 100\%$$

12) Method Performance

12.1. The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2. Demonstration of Capabilities – Prior to the analysis of samples, a Demonstration of Capabilities (DOC) as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.3. Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP, (*NE-QA-QAS-SOP49199*), must be performed initially and whenever a significant change is made to the analytical system. The MDL must be re-evaluated from quarterly MDL points at least every 12 months. The MDL values will be compared to the values listed in Table 1 of the reference method.

13) Pollution Control

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687).

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution.

14) Waste Management

14.1. Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to NE-EHS-HS-SOP54687. The following waste streams are produced when this method is carried out:

14.2. Contaminated disposable glassware utilized for the analysis. This waste is placed in trash containers and disposed with the regular lab trash.

14.3. All solvent contaminated water must be collected in lab satellite-containers then transferred to a waste drum in the hazardous waste staging area where they are monitored and ultimately disposed of by a hazardous waste disposal facility.

14.4. All non-solvent contaminated aqueous wastes (including preserved water, digestates, instrument effluents) are accumulated in lab satellite-containers and transferred to a drum in Hazardous Waste staging area, where they will be disposed of by a licensed hazardous waste facility.

15) References

15.1. USEPA Method 625.1; Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique; 40 CRF Part 136, Appendix A.

15.2. USEPA Method 8270D; Semi Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique; Revision 5; July 2014.

15.3. Szelewski, Mike; Synchronous SIM/Scan Low-Level PAH Analysis Using the Agilent Technologies 6890/5975 inert GC/MSD, http://www.home.agilent.com.

15.4. SW846 Method 8000D Determinative Chromatographic Separations: Revision 4 July 2014, Update V.

15.5. MADEP RCP Quality Assurance and Quality Control Requirements for the Analysis of Semi volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) ; Revision No 3, May, 2024.

15.6. CTDEEP WSC-CAM-IIB Quality Control Requirements and Performance Standards for the Analysis of Semi volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) in Support of Response Actions under the Massachusetts Contingency Plan (MCP); Revision No 2, November, 2021.

15.7. EETNE Standard Operating Procedures for Establishment and Reporting of Detection Limits; *NE-QA-QAS-SOP49197*, most recent revision.

15.8. USEPA Federal Register 40 CFR Part 136, Appendix B, Guidelines Establishing Test Procedures for the Analysis of Pollutants, July, 1992.

16) Method Modifications

None

17) Attachments

19.1. TABLES:

Table 3 - SemiVolatile Analyte List

Table 4 - Characteristic Ions for Semiovolatile Compounds

Table 5 - Semivolatile Internal Standards with Corresponding Analytes Assigned for Quantitation

Table 6 - DFTPP ION Abundance Criteria

19.2. Recommended Instrument Operating Conditions

19.3. Corrective Actions

19.4. Turbovap Operating Conditions

19.5. Gas Chromatograph Preventive Maintenance Checklist

18) Revision History

Rev 1, 1/1/20
SOP put in use.

Rev. 2, 1/27/22
Replaced all references to Element with TALS
Updated references to Chrom
Updated ICV & LCS recovery criteria

Rev 3, 6/9/23
Sec VIII, 1 update sample volume and spike amounts to reflect LVI analysis.
Updated injection volumes and reference to LVI analysis.

Changes to current revision:
Entire SOP: Updated to standard D4 format; Removed references to method 3550C; Removed the following Sections because they were either consolidated into other Sections or covered under other SOPs-Initial Calibration, Troubleshooting and Instrument Maintenance, MDL/LOD, Data Management and Records.
Section 1, 10, 11, 12, 13, 14, 15, 19: Updated text.
Section 3, 16, 17: Added new Section (Definitions, Method Modifications, Attachments).
Section 5: Changed name from Health & Safety to Safety and updated text.
Section 6: Changed name from Apparatus and Materials to Equipment and Supplies; Added HPS23 and updated supplies; Updated text.
Section 7: Added reagents and standards; Added catalog #s; Updated text.
Section 9: Added Table 2-QC requirements; Updated text; Added SOP *NE-QA-QAS-SOP49197*; Added corrective actions.

19) Appendix

19.1. **TABLES**

NOTE: Additional compounds can be provided upon request.

Table 3
Semivolatile Analyte List

Compound	Compound	Compound
Acenaphthene	Dibenz(a,h)anthracene	Hexachloroethane*
Acenapthylene	Dibenzofuran	Indeno-(1,2,3-c,d)pyrene

Anthracene	Di-n-butylphthalate	Isophorone
Benzidine*	1,3-Dichlorobenzene	2-Methylnapthalene
Benzoic Acid*	1,4-Dichlorobenzene	2-Methylphenol (o-Cresol)
Benzo(a)anthracene	1,2-Dichlorobenzene	4-Methylphenol (p-Cresol)
Benzo(b)fluoranthene	3,3'-Dichlorobenzidine	Naphthalene
Benzo(k)fluoranthene	2,4-Dichlorophenol	2-Nitroaniline
Benzo(g,h,i)perylene	Pyridine*	3-Nitroaniline
Benzo(a)pyrene	Diethyl phthalate	4-Nitroaniline
Benzyl Alcohol*	2,4-Dimethylphenol*	Nitrobenzene
Benzyl butyl phthalate	Dimethylphthalate	2-Nitrophenol
Bis(2-chloroethoxy)methane	4,6-Dinitro-2-methylphenol	4-Nitrophenol
Bis(2-chloroethyl)ether	2,4-Dinitrophenol*	N-Nitrosodimethylamine*
Bis(2-chloroisopropyl)ether	2,4-Dinitrotoluene	N-Nitrosodiphenylamine
Bis(2-ethylhexyl)phthalate	2,6-Dinitrotoluene	N-Nitrosodi-n-propylamine
4-Bromophenyl phenyl ether	Aniline*	Pentachlorophenol*
4-Chloroanaline*	Di-n-octylphthalate	Phenanthrene
2-Chloronapthalene	Fluoranthene	Phenol*
4-Chloro-3-methylphenol	Fluorene	Pyrene
2-Chlorophenol	Hexachlorobenzene	1,2,4-Trichlorobenzene
4-Chlorophenyl phenyl ether	Hexachlorobutadiene	2,4,5-Trichlorophenol
Chrysene	Hexachlorocyclopentadiene	2,4,6-Trichlorophenol
2-Methylphenol	3,4-Methylphenol	1-Methylnaphthalene
1,2,4,5-Tetrachloro-benzene*	Pentachloronitrobenzene*	Azobenzene/Diphenyldiazene
Carbazole	1-Methylnapthalene	Atrazine*
1,1-Biphenyl	Acetophenone	2,3,4,6-Tetrachlorophenol

Benzaldehyde*	Caprolactam	

*-Denotes Problematic compound
1- MCP identify potentially "difficult" analytes include: dimethyl phthalate, 4-nitrophenol, phenol, 4-methylphenol, 2-methylphenol, 2,4-dinitrophenol, pentachlorophenol, and 4-chloroaniline

Table 4
Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
N-Nitrosodimethylamine	88	42, 43, 56
Pyridine	79	52, 51
Aniline	93	66,65
Phenol	94	65, 55
Bis(2-chloroethyl)ether	93	63, 95
2-Chlorophenol	128	64, 130, 63
1,3-Dichlorobenzene	146	148, 111
1,4-Dichlorobenzene	146	148, 111
Benzyl alcohol	108	79, 77, 107
1,2-Dichlorobenzene	146	148, 111
2-Methylphenol (o-cresol)	107	108, 77, 79, 90
Bis(2-chloroisopropyl)ether	45	77, 121, 41
N-Nitrosodini-n-propylamine	70	42, 101, 130, 43
3,4-Methylphenol (p-cresol)	107	108, 77, 79, 90
Hexachloroethane	117	201, 119, 203 199
Nitrobenzene	77	51, 123, 65
Isophorone	82	95, 138, 54

Table 4
Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
2-Nitrophenol	139	65, 63, 81, 109
2,4-Dimethylphenol	122	107, 121
Bis (2-chloroethoxy)methane	93	35,123
Benzoic Acid	122	105, 77
2-4-Dichlorophenol	162	164, 63, 98
1,2,4Trichlorobenzene	180	182, 84, 145
Naphthalene	128	129, 127, 102
4-Chloroaniline	127	129, 65, 92
Hexachlorobutadiene	225	223, 227
4-Chloro-3-methylphenol	107	144, 142
2-Methylnapthalene	142	141, 115
1-Methylnaphthalene	142	141,115
1,2,4,5-Tetrachloro-Benzene	216	214,218
Hexachlorocyclopentadiene	237	239, 235, 272
2,4,6-Trichlorophenol	196	198, 200, 97
2,4,5-Trichlorophenol	196	198, 200, 97
2-Chloronaphthalene	162	127, 164
4-Nitroaniline	138	65, 108, 92, 80, 29
Dimethyl phthalate	163	194, 164
2,6-Dinitrotoluene	165	63, 89
Acenaphthylene	152	151, 153, 150

Table 4
Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
3-Nitroaniline	138	65, 108, 92
Acenaphthene	154	153, 152, 151
2,4-Dinitrophenol	184	63, 154, 107
Dibenzofuran	168	139, 169
2,4-Dinitrotoluene	165	63, 89, 91, 119
4-Nitrophenol	139	109, 65
Diethyl phthalate	149	177, 150
Fluorene	166	165, 167, 163
4-Chlorophenyl phenyl ether	204	206, 151
2-Nitroaniline	65	92, 108, 138
4-6-Dinitro-2-methylphenol	198	121, 105
N-Nitrosodiphenylamine	169	168, 167
Azobenzene	77	51, 182, 105
4-Bromophenyl phenyl ether	248	250, 141, 77
Hexachlorobenzene	142	284, 249, 288
Pentachlorophenol	266	264, 268, 270
Pentachloronitrobenzene	237	142,214
Phenanthrene	178	179, 176, 177
Anthracene	178	176, 179, 177
Carbazole	137	139,166

Table 4
Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
Di-n-butyl phthalate	149	150, 104, 76
Fluoranthene	202	200, 203, 201, 101
Benzidine	184	92,185
Pyrene	202	200, 203. 201
Benzyl butyl phthalate	149	91, 206, 150
3,3'-Dichlorobenzidine	252	254, 126, 253, 154
Bis(2ethylhexyl)phthalate	149	167, 279, 150
Benzo(a)anthracene	228	229, 226
Chrysene	228	226, 229, 227
Di-n-octyl phthalate	149	43, 150, 279, 167
Benzo(b)fluoranthene	252	253, 126, 125, 250
Benzo(k)fluoranthene	252	253, 250, 126, 125
Benzo(a)pyrene	252	253, 250, 126, 125
Indeno(1,2,3-c,d)pyrene	276	277, 274, 275, 138
Dibenz(a,h)anthracene	178	279, 280, 139
Benzo(g,h,i)perylene	176	277, 274, 138, 275
Atrazine	200	215, 193
Acetophenone	120	105, 77
Benzaldehyde	77	106, 105
Caprolactam	113	55, 56

Table 4
Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
1,1'-Biphenyl	154	153, 152
2,3,4,6-Tetrachlorophenol	232	229, 130

Table 5
Semivolatile Internal Standards with Corresponding Analytes Assigned for Quantitation

1,4-Dichlorobenzene-d4	**Napthalene-d8**
N-Nitrosodimethylamine	Isophorone
**Pyridine	2-Nitrophenol
*2-Fluorophenol	2,4-Dimethylphenol
*Phenol-d5	Bis(2-chloroethoxy)methane
Phenol	**Benzoic Acid
Bis(2-chloroethyl)ether	2,4-Dichlorophenol
2-Chlorophenol	1,2,4-Trichlorobenzene
1,3-Dichlorobenzene	Naphthalene
1,4-Dichlorobenzene	**4-Chloroanaline
**Benzyl alcohol	Hexachlorobutadiene
1,2-Dichlorobenzene	4-Chloro-3-methylphenol
**2-Methylphenol	**2-Methylnapthalene
Bis(2-Chloroisopropyl)ether	Hexachlorocyclopentadiene
N-Nitrosodi-n-propylamine	
4-Methylphenol	
Hexachloroethane	
*Nitrobenzene-d5	
Nitrobenzene	
**Aniline	

Table 5
Semivolatile Internal Standards with Corresponding Analytes Assigned for Quantitation

Acenapthene-d10 2,4,6-Trichlorophenol **2,4,5-Trichlorophenol *2-Fluorobinphenyl 2-Chloronapthalene **4-Nitroanaline Dimethylphthalate 2,6-Dinitrotoluene Acenaphthylene **3-Nitroanaline Acenaphthene 2,4-Dinitrophenol **Dibenzofuran 2,4-Dinitrotoluene 4-Nitrophenol Diethyl phthalate Fluorene 4-Chlorophenyl phenyl ether **2-Nitroanline 4,6-Dinitro-2-methylphenol N-Nitrosodiphenylamine	**Phenanthrene-d10** **Azobenzene *2,4,6-Tribromophenol 4-Bromophenyl phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Di-n-butyl phthalate Fluoranthene Benzidine Pyrene **Carbazole
Chrysene-d12 *Terphenyl-d14 Benzyl butyl phthalate 3,3-Dichlorobenzidine Bis(2-ethylhexyl)phthalate Benzo(a)anthracene Chrysene Di-n-octylphthalate	**Perylene-d12** Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-c,d)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene
NOTE: * indicates surrogates **indicates analytes that are reported only upon client request and will reference method 8270D; not EPA 625.1.	

Table 6

DFTPP ION Abundance Criteria	
MASS	Ion Abundance Criteria
51	30-60% of mass 198
68	<2% of mass 69
70	<2% of mass 69
127	40-60% of mass 198
197	<1% of mass 198
198	Base peak, 100% relative abundance
199	5-9% of mass 198
275	10-30% of mass 198
365	>1% of mass 198
441	Present but less than mass 443
442	>40% of mass 198
443	17-23% of mass 442

19.2. **Recommended Instrument Operating Conditions:**

Injector Temperature: 250°C
MSD- Transfer line Temperature: 280°C
Flow- 1.5ml/mi
Injection- Split 10:1, Presstight liner, 35ml/min @ 0.5min

	°C/minute	Next °C	Hold (min)
Initial		40	1
Ramp1	15	100	0
Ramp2	20	240	0
Ramp3	10	310	2.0

- These parameters may change based on the current GC performance

19.3. **Corrective Actions**

If the continuing calibration technical acceptance criteria are not met, it becomes necessary to take corrective actions to achieve the acceptance criteria. Continuing calibration technical acceptance criteria ***MUST*** be met before any samples or required blanks are analyzed in an analytical sequence. Any samples or required blanks analyzed when continuing calibration criteria were not met will require reanalysis. Remedial actions, which include but are not limited to the following, must be taken when criteria are not met:

- Check and adjust GC operating conditions.
- Clean or replace injector liner.
- Flush column with solvent according to manufacturer's instructions.
- Break off a short portion (approximately 0.33 cm) of the column.
- Replace the GC column (performance of all initial calibration procedures are then required).
- Prepare and analyze new continuing calibration
- Prepare a new initial calibration curve.
- See also: Preventative Maintenance Checklist, Section 19.5.

19.4. Turbovap operating conditions

- Temperature: target set @ 43°C
- Pressure: target set @ 0.7ml/min

19.5. Gas Chromatograph Preventative Maintenance Checklist

HP 6890 & 7890 Gas Chromatograph Preventative Maintenance Checklist

- ☐ If detectors are operational and in the "on" state: note the starting signal for later reference.
- ☐ Note instrument parameters.
- ☐ Power down the system.
- ☐ Open instrument covers and clean out any loose dirt or dust. Pay particular attention to cooling fans.
- ☐ Perform a general inspection looking for safety or electronic/mechanical failures. Including loose cables and proper insulation of heated zones.
- ☐ Power the instrument "on" and observe the self-test. Note any errors and refer to service manual.
- ☐ Check oven motor for noise and excessive vibration (spin down is a good qualitative indicator of bearing condition).
- ☐ Check operation of all cooling fans that are present for airflow (including inlet cooling fan, rear electronics fan, and oven intake fan).
- ☐ Check operation of oven flaps in the rear of the instrument.
- ☐ Perform injection port maintenance including replacement of the septum, inlet liner, inlet seal, and split line filter.
- ☐ Perform an inlet leak test as described in the appropriate instrument service manual.
- ☐ Clean and inspect the exterior of the instrument.
- ☐ If an autosampler (7673) is installed on the GC, then perform the required maintenance:
  - o Check bracket alignment and belt tension.
  - o Check tray, clean gripper jaws and tray arm.

- Check controller and clean any dust off of the boards, vents and cover.
- Check injector,
  - Pull out the injection turret and clean.
  - Clean the needle guide cone, the needle support and nearby surfaces.
  - Clean the surface of the injector.
  - Clean any dust that builds around the electronics assembly.
  - Re-install turret.

☐ Perform detector maintenance as required:

- Flame Ionization detectors include cleaning of the sample path and the jet. Check make-up gas flow, airflow, and hydrogen for proper settings. Light flame and note signal.
- Notes:_____
- Electron Capture detectors. Lab personnel cannot clean electron capture detectors. Check make-up gas flow, anode purge flow and note signal level. Depending on signal level and consistency of sensitivity, ECD may need to be exchanged; consult with logbook for detector history.
- Notes:_____
- Photo ionization detectors include checking auxiliary gas flow and signal level. Note that signal level is dependent on lamp power supply setting. Clean lamp lens. Replace lamp. Confirm proper connection of signal and power supply leads.
- Notes:_____

QM-QM49163 Quality Assurance Manual
NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-QA-QAS-SOP49197 Manual Integration for Chromatographic Peaks
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits

End of document

Version history

Version	Approval	Revision information	
2	20.SEP.2022	D4 Template for Analytical SOPs -	
3	14.JUN.2024		

1) Scope and Application

1.1. Method 8082A is a SW-846 method used to determine the concentrations of polychlorinated biphenyls (PCBs) as Aroclors or as individual PCB congeners in aqueous, oil, solid, and wipe matrices.

1.1.1. Aqueous methods via liquid/liquid (SW846-3510C).

1.1.2. Oil and products can be extracted using a waste dilution (SW846-3580A). Some products can be run using the soxhlet as well.

1.1.3. Solids and soils can be extracted by soxhlet extraction (SW846-3540C), Microwave Extraction (SW-846-3546). CT-RCP and MA-CAM samples must be run using 3540C or 3546.

1.1.4. Wipes can be extracted by soxhlet extraction (SW-846-3540C) or Microwave (SW846-3546).

1.2. Method 600/4-81-045 is an EPA method used to determine the concentrations of polychlorinated biphenyls (PCBs) as Aroclors from oils.

1.2.1. Oil and products can also be extracted using a waste dilution (SW846-3580A).

1.3. Method 608.3 is an EPA method used to determine the concentrations of polychlorinated biphenyls (PCBs) as Aroclors from waters.

1.3.1. Waters can be extracted using liquid-liquid (SW846-3510C).

1.4. Extraction procedures vary according to matrix, client specifications, state requirements, and contamination levels. This needs to be taken into account when preparing sample batches.

1.5. Open-tubular, capillary columns are employed with electron capture detectors (ECD). The target compounds listed below are determined by a single column analysis system.

Table 1

Compound	CAS Registry No.	IUPAC#
Aroclor 1016	12675-11-2	-
Aroclor 1221	11104-29-2	-
Aroclor 1232	11141-16-6	-
Aroclor 1242	53469-21-9	-
Aroclor 1248	12672-29-6	-
Aroclor 1254	11097-69-1	-
Aroclor 1260	11096-82-5	-
Aroclor 1262	37324-23-5	-
Aroclor 1268	11100-14-1	-
Decachlorobiphenyl	2051-24-3	-

1.6. Aroclors are multi-component mixtures. When samples contain more than one Aroclor, a higher level of analyst expertise is required to attain acceptable levels of qualitative and quantitative analysis. The same is true of Aroclors that have been subjected to environmental degradation ("weathering") or degradation by treatment technologies. See Section 1.7 below.

1.7. Quantitation of PCBs as Aroclors is appropriate for many regulatory compliance determinations, but is particularly difficult when the Aroclors have been weathered by long exposure in the environment. Such weathered multi-component mixtures may have significant differences in peak patterns than those of Aroclor standards. If significant weathering is present, the client may want to have the sample analyzed for PCB congeners.

1.8. The selected columns, detectors, and calibration procedures are appropriate for PCB analysis. Matrix-specific performance data (i.e. MDLs) must be established and the stability of the analytical system and instrument calibration must be established for each analytical matrix (e.g., hexane solutions from sample extractions, diluted oil samples, etc.). Example chromatograms and GC conditions are provided as guidance.

1.9. This method is restricted to use by, or under the supervision of, analysts experienced in the use of gas chromatographs (GC) and skilled in the interpretation of gas chromatograms. Each analyst must demonstrate the ability to generate acceptable results with this method, in the form of Precision and Accuracy studies.

2) Summary of Method

2.1. A measured volume or weight of sample (approximately 250 ml for liquids, 2 to 30 g for solids, 0.5 to 3.0 g for oils / products, wipe) is extracted using the appropriate matrix-specific sample extraction technique.

2.2. Aqueous samples are extracted at neutral pH with methylene chloride, then exchanged to hexane.

2.3. Solid samples are extracted with hexane-acetone (1:1, 9:1) or methylene chloride-acetone (1:1), methylene chloride, or hexane. The solvent type/ratio depends on the extraction requirements. The extract is then exchanged to hexane, if applicable.

2.4. Extracts for PCB analysis may be subjected to a sulfuric acid cleanup (Method 3665) designed specifically for these analytes. This cleanup technique will remove (destroy) many single component organochlorine or organophosphorus pesticides. There are many other cleanup methods available for PCBs, refer to Section 4, Interferences, & Section 10, Procedure, for more details. All samples will get this cleanup.

2.5. After cleanup, the extract is analyzed by injecting a 2-µL aliquot into a gas chromatograph equipped with a capillary guard column, glass Y-splitter and dual wide-bore fused silica capillary column and electron capture detector (GC/ECD).

2.6. The chromatographic data may be used to determine the nine Aroclors in Table 1. PCB Congeners are an additional analysis requiring Eurofins Environment Testing be notified in advance.

2.7. For the current set of reporting limits and quality control limits in use, refer to the active Method Limit Group in TALs for each method/matrix.

3) Definitions

3.1. TALS –Laboratory Information Management System (LIMS)

3.2. NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

3.3. Refer to the glossary in the Laboratory Quality Manual (*QM-QM49163*) for additional definitions.

3.4. ECD – Electron Capture Detector. The Electron Capture Detector is the most sensitive detector for the analysis of Electrophilic compounds such as chlorinated hydrocarbons found in pesticide.

3.5. PCB – Polychlorinated Biphenyl. Polychlorinated biphenyls (PCBs) are a class of organic compounds with 1 to 10 chlorine atoms attached to biphenyl which is a molecule composed of two benzene rings each containing six carbon atoms. The chemical formula for all PCBs is C12H10-xClx. PCBs were used as coolants and insulating fluids for transformers and capacitors, stabilizing additives in flexible PVC coatings of electrical wiring and electronic components, pesticide extenders, cutting oils, flame retardants, hydraulic fluids, sealants (used in caulking, etc), adhesives, wood floor finishes, paints, de-dusting agents, and in carbon less copy paper. PCB production was banned in the 1970s due to the high toxicity of most PCB congeners and mixtures. They persist in the environment for long periods of time, and they are bioaccumulants.

3.6. Pesticide - A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests. Under United States law, a pesticide is also any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

3.7. Analytical Batch is defined as a group of field samples with similar matrices which are processed as a unit. For Quality Control purposes, if the number of samples in such a group is greater than 20, then each group of 20 samples or less are defined as separate analytical batches.

3.8. Continuing Calibration Verification (CCV) is defined as a calibration standard used to periodically check the calibration state of an instrument. The calibration check standard is prepared

from the same stock standard solution as calibration standards, and is generally one of the mid-level range calibration standard dilutions.

3.9. Calibration Standards are defined as a series of standard solutions prepared from dilutions of a stock standard solution, containing known concentrations of each analyte and surrogate compound of interest.

3.10. Field Duplicates are defined as two separate samples collected at the same time and location under identical circumstances and managed the same throughout field and laboratory procedures. Analysis of field duplicates gives a measure of the precision associated with sample collection, preservation and storage, as well as laboratory procedures.

3.11. Laboratory Duplicates are defined as split samples taken from the same sampling container and analyzed separately with identical procedures. The analysis of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

3.12. Laboratory Method Blank is defined as an aliquot of reagent water or clean sand spiked with a surrogate standard. The laboratory method blank is treated exactly as a sample, exposed to all glassware, solvents, reagents, and equipment. A laboratory method blank is analyzed with every batch of samples, to determine if method analytes or other interferences are present in the laboratory environment, reagents, or equipment.

3.13. System Solvent Blank is defined as an aliquot of a method solvent (e.g., hexane or methylene chloride, pesticide grade or better, that is directly injected into the GC system. The purpose of the System Solvent Blank is to determine the level of noise and baseline rise attributable solely to the GC system, in the absence of any other analytes or system contaminants.

3.14. Surrogate Standards are compounds spiked into all samples, blanks, and matrix spikes to monitor the efficacy of sample extraction, chromatographic, and calibration systems.

3.15. All other terms are as defined in SW-846, "Test Methods for Evaluating Solid Waste", USEPA, September 1986, and as amended and updated.

4) Interferences

4.1. Method interferences may be caused by contaminants in other reagents and glassware (i.e., TurboVap Concentrator). To prevent cross contamination of samples, all these materials must be routinely and thoroughly cleaned before each use. To minimize this possibility of cross contamination, all preparations of samples and standards will be done in the extraction room hood.

4.2. Carryover is the result of running a sample that contains high levels of heavy petroleum distillates. The interference is the lingering contaminants of a heavily contaminated sample that does not burn off in the normal run time and are present in the following run. To avoid problems due to carryover, analysts must dilute samples that may be heavily contaminated and run solvent blanks after high level samples.

4.3. Matrix interference by co-extracted materials such as plant matter, animal fats, waxes and phthalate ester can pose a major problem in TPH determination when using the flame ionization detector. An exhaustive clean-up of reagents and glassware may be required to eliminate background phthalate contamination.

4.4. Refer to Methods 3500 (Sec. 3.0, in particular), 3600, and 8000 for a discussion of interferences.

4.5. Interferences co-extracted from the samples will vary considerably from matrix to matrix. While general cleanup techniques are referenced or provided as part of this method, unique samples may require additional cleanup approaches to achieve desired degrees of discrimination and quantitation. Sources of interference in this method can be grouped into three broad categories.

4.5.1. Contaminated solvents, reagents, or sample processing hardware.

4.5.2. Contaminated GC carrier gas, parts, column surfaces, or detector surfaces.

4.5.3. Compounds extracted from the sample matrix to which the detector will respond.

5) Safety

5.1. Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.2. The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Table 2

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Acetone	Flammable	1000 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache.
Hexane	Flammable Irritant	500 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. Overexposure may cause lightheadedness, nausea, headache, and blurred vision. Vapors may cause irritation to the skin and eyes.
Methylene Chloride	Carcinogen Irritant	25 ppm (TWA) 125 ppm (STEL)	Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting, and headache. Causes irritation, redness and pain to the skin and eyes. Prolonged contact can cause burns. Liquid degreases the skin. May be absorbed through skin.
Hydrogen Gas	Explosive	None	The main hazard is flammability. Exposure to moderate concentrations may cause dizziness, headache, nausea, and

			unconsciousness. Exposures to atmospheres less than 8 to 10% oxygen will bring about sudden unconsciousness, leaving individuals unable to protect themselves. Lack of sufficient oxygen may cause serious injury or death.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.3. Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded; other gloves will be cleaned immediately.

Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.4. The preparation of standards, reagents, and glassware cleaning procedures that involve solvents such as methylene chloride will be conducted in a fume hood with the sash closed as far as the operations will permit. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the fume hood and store the containers in the specified chemical cabinets.

5.5. All work must be stopped in the event of a known or potential compromise to the health and safety of a Eurofins associate. The situation must be reported immediately to a laboratory supervisor or the EH&S coordinator.

5.6. The analyst must perform a contamination wipe test (wipe test kit for NI-63 electron capture detector) every six months to insure retention of the NRC agreement or state radioactive materials license (see Section 5.8 for the procedure to follow).

5.7. Performing a contamination wipe test every six months is part of the licensing requirement to possess an Electron Capture Detector that contains Nickel-63 radioactive foil. It is essential that the test be performed to insure retention of the NRC or agreement state radioactive materials license.

5.8. Each envelope sent to us should contain the following: three filter papers, three printed paper envelopes, one pre-addressed envelope, and one instruction sheet. The performance of the leak (wipe) test is done as follows:

5.8.1. Select three printed envelopes and fill out completely

5.8.2. Select three filter papers, and mark them as follows:

Sample 1 – Detector Entrance Fitting
Sample 2 – Detector Housing Fitting
Sample 3 – Detector Exit Fitting

5.8.3. Using the side of the filter paper that has not been marked, perform the following:

5.8.3.1. Wipe the detector entrance fitting, inside and out, using the filter paper marked "sample 1", and place the paper in a printed envelope.

5.8.3.2. Wipe the detector housing with the filter paper marked "sample 2", and place the paper in a printed envelope.

5.8.3.3. Wipe the detector exit fitting with the filter paper marked "sample 3", and place the paper in a printed envelope.

5.8.3.4. Close the envelopes and secure with tape.

5.8.3.5. Place the three envelopes and a purchase order in the pre-addressed envelope.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. HPS11

Agilent 6890N series gas chromatograph with a CTC Leap-PAL Injector, Electron Capture Detector (ECD)
Column – ZB-CLPesticide1, 30 meters, 0.53mm diameter 0.50um film (or equivalent)
Column – ZB-CLPesticide2, 30 meters, 0.53mm diameter 0.42um film (or equivalent)

6.2. HPS12

Agilent 6890N series gas chromatograph with a CTC Leap-PAL Injector, Electron Capture Detector (ECD)
Column – ZB-CLPesticide1, 30 meters, 0.53mm diameter 0.50um film (or equivalent)
Column – ZB-CLPesticide2, 30 meters, 0.53mm diameter 0.42um film (or equivalent)

6.3. HPS19

Agilent 7890 series gas chromatograph with a CTC Leap-PAL Injector, Electron Capture Detector (ECD)
Column – ZB-CLPesticide1, 30 meters, 0.53mm diameter 0.50um film (or equivalent)
Column – ZB-CLPesticide2, 30 meters, 0.53mm diameter 0.42um film (or equivalent)

6.4. Each instrument runs on its own computer, and operated by Chemstation Software. The laboratory-wide LIMS program TALS is used for data entry and review, the chromatography software is Chrom.

6.5. Laboratory Oven (Blue M)

6.6. Centrifuge (variable speed lab grade)

6.7. Analytical Balance Capable of Accurately Weighing 0.0001g

6.8. PTFE Separatory Funnel = 2000 ml with Teflon

6.9. Volumetric Flasks (class A): 1mL, 2mL, 10mL, 25mL, 50mL, 100mL, 200mL, 1000mL

6.10. Vials = 2mL, Teflon-Lined crimp cap and PTFE Rubber-Lined Crimp Top

6.11. PTFE Solvent Wash Bottle

6.12. Disposable Borosilicate Glass Pasteur Pipettes

6.13. 100mL Graduated Cylinder (class-A)

6.14. Microsyringe: 10 uL, 100 uL, 250 uL, 500 uL, 1000 uL

6.15. Dispensett- capable of dispensing 25 ml of solvent

6.16. Metal Spatula

6.17. Filter Paper; Fisher P8 Filter Paper or equivalent

6.18. Crimper and Decrimper for 2 ml Vials

6.19. Glass Filter Funnel

6.20. PTFE Stirring Rod with Magnetic End

6.21. "Glass-Col" 3-D Shaker

6.22. TurboVap Concentrator

6.23. Drying Oven

6.24. CEM Mars6 Microwave, with Teflon vessels, ferrules, and caps

6.25. Certified grade ultra P-5 (ECD) argon-methane (5% methane and 95% Argon) for the ECD make-up gas

6.26. Ultra High Purity grade compressed helium (GC carrier gas)

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Methylene chloride (CH_2Cl_2) – GC resolve

7.2. Hexane – pesticide quality or equivalent

7.3. Acetone, ASC grade or better

7.4. Sodium sulfate: granular, anhydrous and purify by heating at 400°C for four hours.

7.5. Reagent water: deionized water (ASTM Type I).

7.6. Methanol (CH_3OH) – ASC grade or equivalent.

7.7. Alconox cleaning agent.

7.8. Primary Stock Standards, refer to Table 4. Commercially prepared stock standard solutions, used for calibration. Prepare 1016/1260 calibration stocks at 5ug/ml with surrogate added at 0.4 ug/ml in hexane. Individual aroclors/mixes prepared at 5ug/ml, or as needed.

7.9. Secondary Stock Standards, refer to Table 4. Commercially prepared stock standard solutions, supplied by a different manufacturer, used for ICV/LCS. ICV/CCV -1016/1260 prepared at 1 ug/ml with 0.08 ug/ml surrogate in hexane.

7.10. Surrogates: Restek # 32457, DCBP & TCMX 200ug/ml

7.11. Internal surrogate – Agilent # PPS-171-1, 4,4'-Dibromooctofluorobiphenyl, 100ug/ml

7.12. Nitrogen - Vendor: Airgas

7.13. Expiration dates for prepared standards are 6 months from prepared date. Expiration date for pure products is 5 years from day of purchase. Expiration dates for ampules are assigned by the vendor or one year after open.

7.14. Any standard/reagent that comes with a Certificate of Analysis must be scanned into TALS-reagent tab. Proper labeling of standards including a TALS ID, received date, expiration date, and opened/prepared date is required.

7.15. Analysts must check all standards for expiration dates on a specific timeframe.

Table 4

Recommended Standards for this SOP (Restek or Agilent Primary Standards)		
Manufacturer	Part #	Compound & Concentration
Agilent	PPS-171-1	4,4'-Dibromooctafluorobiphenyl Solution – 100 ug/mL
Restek	32457	PCB/Pest 2-Surrogate Standard – 200 ug/mL
Restek	32039	Aroclor 1016/1260 – 1000 ug/mL
Restek	569745	Aroclor 1221/1254 – 1000ug/mL
Restek	569746	Aroclor 1232/1262 – 1000 ug/mL
Restek	569747	Aroclor 1242/1268 – 1000 ug/mL
Restek	32010	Aroclor 1248 (Single) – 1000 ug/mL
Absolute Standards	90123	PCB 1016 – 1,000 ug/mL (2nd Source)
Absolute Standards	90124	PCB 1221 – 1,000 ug/mL (2nd Source)
Absolute Standards	90125	PCB 1232 – 1,000 ug/mL (2nd Source)
Absolute Standards	90126	PCB 1242 – 1,000 ug/mL (2nd Source)
Absolute Standards	90127	PCB 1248 – 1,000 ug/mL (2nd Source)
Absolute Standards	90128	PCB 1254 – 1,000 ug/mL (2nd Source)
Absolute Standards	90129	PCB 1260 – 1,000 ug/mL (2nd Source)
Absolute Standards	90165	PCB 1262 – 1,000 ug/mL (2nd Source)
Absolute Standards	90166	PCB 1268 – 1,000 ug/mL (2nd Source)

8) Sample Collection, Preservation, Shipment and Storage

8.1. The following details Eurofins Environment Testing's policy regarding collection, preservation and handling of all samples that are submitted for PCB analysis.

8.2. All samples must be cooled to 0-6°C immediately after collection.

8.3. A Chain of Custody must accompany all samples that are submitted for analysis documenting the time and date of sampling and any addition of preservative.

8.4. A summary of sample collection, preservation and holding times is provided in Table 5.

Table 5
Holding Times and Preservation for PCB Samples

Matrix	Container	Preservation	Holding Time
Aqueous Samples	1L or 250mL amber glass bottle with Teflon-lined screw cap	Cool to 2-6°C, De-chlorinate as needed	Samples must be extracted within 1 year and analyzed within 40 days
Soil/Sediment Samples	4-oz. or 8-oz wide mouth amber glass jar with Teflon-lined screw cap.	Cool to 2-6°C	Samples must be extracted within year and analyzed within 40 days
Waste Oil	40ml glass vial with Teflon lined cap	No pres.	Samples must be extracted within year and analyzed within 40 days

9) Quality Control

Table 6 – QC Requirements-ECD

Quality Controls	Frequency	Control Limit
Initial Calibration	As necessary	%RSD<20%, R^2>0.990 & %RSE<20%, For 608.3 %RSD<15%, R^2>0.920 & %RSE<15%
ICV (Second Source Standard)	After ICAL	80-120% of true value. 608.3 limits are in the table in Section 18.11

Quality Controls	Frequency	Control Limit
Continuing Calibration Verification CCV	Before and after analytical batch and after every 20 injections or 24hr	<20% Drift or Difference 608.3 limits are in the table in Section 18.11, The internal standard must be 50-200% of th ICAL value
Method Blank (MB)	One per extraction batch (up to 20 samples)	Identified pattern value less than the RL
Laboratory Control Sample (LCS) – Water & Solid	One per extraction batch (up to 20 samples)	40-140% 608.3 limits in the table in Section 18.11
Laboratory Control Sample Duplicate (LCSD) – Water & Solid	One per extraction batch (up to 20 samples)	40-140% , RPD <20%
Laboratory Duplicate (If volume allows. May substitute with LCSD)	One per extraction batch (up to 20 samples)	50% RPD
Matrix Spike (MS) –	As requested by client or a minimum of 1 MS/MSD per batch of 20 samples analyzed by 624.1, if volume is provided*	40-140% recovery
Matrix Spike Duplicate (MSD) – (run either Duplicate or MSD)	As requested by client or a minimum of 1 MS/MSD per batch of 20 samples analyzed by 624.1, if volume is provided*	40-140% recovery, 20% RPD
Surrogate recovery	Every sample	30-150%
Internal Standard	Every sample	50-200% of CCV value

* Note: If samples are not submitted with enough volume to perform the MS/MSD, a NCM must be added to each 608.3 sample in the batch identifying the limited volume.

9.1. CALIBRATION

9.1.1. Prepare the calibration stock solutions as noted in Sections 7.8 & 7.9. Refer to TALS reagent module for previous iteration of each standard.

9.1.2. Seven calibration standards must be prepared from the 1016/1260 primary stock standard to construct a calibration curve. The concentration range of these standards must bracket the linear working range of the instrument for all components. On a routine basis, the calibration will be prepared from the primary stock solution at the following concentrations: 0.05, 0.10, 0.5, 1.0, 2.0. 3.0, and 5.0 ug/mL. Individual Aroclor mixes will be made as either mid-level single point or 7-point calibration standards (depending on the average or linear response of the 1016/1260 calibration.

9.1.3. The established GC operation conditions, optimized for the resolution of the target compounds and sensitivity) as set in Section 18 will be used for both calibration and sample analysis.

9.1.4. A 2-µL injection of each calibration standard is used. A minimum of 3 peaks must be chosen for each Aroclor, and preferably 5 peaks. The peaks must be characteristic of the Aroclor in question. Choose peaks in the Aroclor standards that are at least 25% of the height of the largest Aroclor peak. For each Aroclor, the set of 3 to 5 peaks should include at least

one peak that is unique to that Aroclor. Use at least five peaks for the Aroclor 1016/1260 mixture, none of which should be found in both of these Aroclors.

9.1.5. The response factors or calibration factors from the initial calibration are used to evaluate the linearity of the initial calibration. This involves the calculation of the mean response or calibration factor, the standard deviation, and the relative standard deviation (RSD) for each congener or Aroclor peak. See Method 8000 for the specifics of the evaluation of the linearity of the calibration and guidance on performing non-linear calibrations. When the Aroclor 1016/1260 mixture is used to demonstrate the detector response, the calibration model for this mixture must be an Average fit. If it is, the other Aroclor mixes may be analyzed as a single point at the midpoint of calibration. If the response is linear for any of the peaks in the 1660 calibration, the other Aroclor single standards are analyzed in a multi-point calibration. Use the calibration factors from those standards to evaluate linearity.

9.1.6. The relative standard deviation (RSD) should be equal to or less than 20%. If linearity is used, r^2 must be equal to or greater than 0.990 and the %RSE must be equal to or less than 20%. For 608.3 the relative standard deviation (RSD) should be equal to or less than 15%. If linearity is used, r^2 must be equal to or greater than 0.920 and the %RSE must be equal to or less than 15%. These values will be calculated by CHROM. If the calibration fails these criteria, a new calibration must be prepared and analyzed. Average, Linear, and Quadratic regressions are accepted.

9.1.7. An Initial Calibration Verification (ICV) must be analyzed using a second source standard different than that of the calibration standards. The ICV is a mid-range concentration of the method analytes. The recoveries for the ICV are set at 70-130% in LIMS. For 608.3 the recoveries must meet the limits in the table in Section 18.11.

9.1.8. Low calibration verification (LCV) need to be verified for each analyte with each calibration. This calculation is done by automatically by the Chrom software in the "calibration" tab. The low point readback needs to be reviewed upon initial calibration review. The percent recoveries for each analyte should be between 30% drift. If LCV criteria is not met for a specific reporting level, then the reporting level for the analyte should be raised to the level at which it does pass the 70-130% criteria; however must be within the method established reporting limits.

9.1.9. Calibrations points must be run as a 'single event'. All points must be run within the same 12-hour tune window. If a point is dropped from the middle of the curve, then the whole point is to be discarded. If a point needs to be rerun, it must be done in the same run as the rest of the curve, prior to sample analysis.

9.1.10. Eurofins Environment Testing, Inc. adheres to a strict quality assurance and quality control plan to assure accurate and precise results. The following quality control steps are specific to this method. Each analyst must comply to these steps to ensure the quality of results.

9.1.10.1. System Blank (Instrument QC)

9.1.10.2. 1.0 ug/ml 1660 CCV

9.1.10.3. Method Blank

9.1.10.4. Laboratory Control Sample

9.1.10.5. Laboratory Control Sample Duplicate

9.1.10.6. Matrix Spike (If enough volume submitted, 1 per 20 extracted samples)

9.1.10.7. Matrix Spike Duplicate (If enough volume submitted, as requested)

9.1.10.8. Closing CCV (no more than 20 injections from CCV-CCV)

Method blank and laboratory control sample/duplicate are run one per analytical batch of 20. The duplicate, matrix spike and matrix spike duplicates are analyzed upon request and available sample. Refer to Table 6 for acceptance criteria for all batch and instrument QC.

9.2. Qualitative Identification

9.2.1. The identification of PCBs as Aroclors or congeners using this method with an electron capture detector is based on agreement between the retention times of peaks in the sample chromatogram with the retention time windows established through the analysis of standards of the target analytes. See Method 8000 for information on the establishment of retention time windows.

9.2.2. Tentative identification of an analyte occurs when a peak from a sample extract falls within the established retention time window for a specific target analyte. Tentative identification of each peak must be confirmed using a second GC column of dissimilar stationary phase, based on a clearly identifiable Aroclor pattern. Every PCB that is analyzed at Eurofins Environment Testing is run on a GC that has a dual column, and a dual ECD. This ensures that every sample run on our instrumentation has dual column confirmation to provide our clients with the highest quality data.

9.2.3. Quantitation of PCBs as Aroclors

9.2.4. The quantitation of PCB residues as Aroclors is accomplished by comparison of the sample chromatogram to that of the most similar Aroclor standard. The EPA QAU strongly recommends this method for all PCB analysis, which is acceptable for all programs. Run a qualitative run to identify the various Aroclors in the samples. A choice must be made as to which Aroclor is most similar to that of the residue and whether that standard is truly representative of the PCBs in the sample. A comparison of peaks with the calibration can be made in Chrom under the F8 report.

9.2.5. Use the individual Aroclor standards (not the 1016/1260 mixtures) to determine the pattern of peaks on Aroclors 1221, 1232, 1242, 1248, 1254, 1262, and 1268. The patterns for Aroclors 1016 and 1260 will be evident in the mixed calibration standards.

9.2.6. Once the Aroclor pattern has been identified, compare the responses of 3 to 5 major peaks in the single-point calibration standard for that Aroclor with the peaks observed in the sample extract. The amount of Aroclor is calculated using the individual calibration factor for each of the 3 to 5 characteristic peaks chosen and the calibration model (linear or non-linear) established from the multi-point calibration of the 1016/1260 mixture. A concentration is determined using each of the characteristic peaks and then those 3 to 5 concentrations are averaged to determine the concentration of that Aroclor. Non-1016/1260 Aroclors are verified by a single-point Aroclor standard within 12 hours of being analyzed.

9.2.7. Weathering of PCBs in the environment and changes resulting from waste treatment processes may alter the PCBs to the point that the pattern of a specific Aroclor is no longer recognizable. Any peaks that are not identifiable as PCBs on the basis of retention times should not be used. When quantitation is performed in this manner, the problems should be

fully narrated in writing/electronically and attached to the data by NCM in TALS. A selection of acceptable qualifiers is available in TALS.

9.3. Sample Quality Control for Preparation and Analysis –

9.3.1. Eurofins Environment Testing has procedures for documenting the effect of the matrix on method performance (precision, accuracy, and detection limit). This includes the analysis of QC samples including a method blank, a matrix spike, a duplicate, and a laboratory control sample (LCS) in each analytical batch and the addition of surrogates to each field sample and QC sample and matrix specific MDLs.

9.3.2. Documenting the effect of the matrix should include the analysis of at least one matrix spike and one duplicate un-spiked sample or one matrix spike/matrix spike duplicate pair. The decision on whether to prepare and analyze duplicate samples or a matrix spike/matrix spike duplicate must be based on knowledge of the samples in the sample batch. If samples are not expected to contain target analytes, laboratories should use a matrix spike and matrix spike duplicate pair, spiked with the Aroclor 1016/1260 mixture. However, when specific Aroclors are known to be present or expected in samples, the specific Aroclors should be used for spiking. If samples are expected to contain target analytes, then laboratories may use one matrix spike and a duplicate analysis of an un-spiked field sample.

9.3.3. A Laboratory Control Sample (LCS or Blank Spike) and LCS Duplicate are included with each analytical batch. The LCS consists of an aliquot of a clean (control) matrix similar to the sample matrix and of the same weight or volume. The LCS is spiked with the same analytes at the same concentrations as the matrix spike. When the results of the matrix spike analysis indicate a potential problem due to the sample matrix itself, the LCS results are used to verify that the laboratory can perform the analysis in a clean matrix. PCBs 1016 and 1260 are used for the spike unless the client requests otherwise. Recoveries for 608.3 and 8082A are 40-140%. LCS recoveries for 608.3 reflect the tighter criteria between 8082A and EPA 608.3 The LCS Duplicate meets the requirement to have an LCS every ten samples as well.

9.3.4. Evaluate LCS/LCSD precision. For certain clients samples with positive hits that have RPD failure between the associated LCS/LCSD results must be re-extracted and reanalyzed.

9.3.5. A Matrix Spike (MS) and Matrix Spike Duplicate are included with each analytical batch as requested, or once per 20 samples extracted under 608.3. The MS consists of an aliquot of a sample matrix. The MS is spiked with the same analytes as the LCS and is used to evaluate potential problems with the matrix itself. Recoveries for 8082A MS samples are 40-140%. MS/MSD results should be reported from the same signal.

9.3.6. A batch method blank (MB) should be analyzed with every batch. Blanks must pass surrogate recoveries and are evaluated down to the MDL, reported to 2 significant figures.

9.3.7. Internal standard recoveries need to be within 50-200% of the opening CCV. The opening CCV needs to be 50-200% of the midpoint value of the ICAL.

9.3.8. See Method 8000, Sec. 8.0 for the details on carrying out sample quality control procedures for preparation and analysis.

9.3.9. Surrogate recoveries - The laboratory must evaluate surrogate recovery data from individual samples versus the surrogate control limits developed by the laboratory. Recoveries are between 30 to 150%. See Method 8000, Sec. 8.0 for information on evaluating surrogate data and developing and updating surrogate limits.

9.3.10. It is necessary that the laboratory evaluate surrogate recovery data from individual samples versus surrogate recovery limits developed in the laboratory.

9.3.11. All analytes in a sample or QC will be reported at the lowest dilution level available and that analyte area is within the calibration range.

9.3.12. If recovery is not within in-house surrogate recovery limits, the following are necessary.

9.3.12.1. Check to be sure there are no errors in the calculations, surrogate solutions or internal standards. If errors are found, recalculate the data accordingly. Examine chromatograms for interfering peaks and integrated peak areas.

9.3.12.2. Check instrument performance. If an instrument performance problem is identified, correct the problem and re-analyze the extract.

9.3.12.3. Some samples may require dilution in order to bring one or more target analytes within the calibration range or to overcome significant interferences with some analytes. This may result in the dilution of the surrogate responses to the point that the recoveries cannot be measured. If the surrogate recoveries are available from a less-diluted or undiluted aliquot of the sample extract, those recoveries may be used to demonstrate that the surrogates were within the QC limits, and no further action is required. However, the result of both the diluted and undiluted (or less-diluted) analyses must be included on the worklist for that sample.

9.3.12.4. If no instrument problem is found, the sample should be re-extracted and re-analyzed.

9.3.12.5. If, upon re-analysis the recovery is again not within limits, report the data as an "estimated concentration." If the recovery is within the limits in the re-analysis, provide the re-analysis data in TALS. If the holding time for the method has expired prior to the re-analysis, provide both the original and re-analysis results in TALS, and note any holding time issues.

9.4. Contingencies for Handling Out-of-Control or Unacceptable Data.

9.4.1. When a sample is run on an instrument, it must pass a series of checks before it can be considered acceptable data.

9.4.2. Verify that the instrument is running properly. Any deviations to the method can cause major problems.

9.4.3. Verify that your control spikes are accurate.

9.4.4. Verify that your CCVs fall within acceptable limits.

9.4.5. Verify that you have a no-carryover or column bleed affecting your data.

9.4.6. Verify that the amount of internal standard is accurate.

9.4.7. If any of the checks fail, the data will have to be re-run. This can be on another instrument or the same instrument, provided corrective maintenance has been performed.

10) Procedure

10.1. 3510C 8082A/608.3 –Separatory Funnel PCB Extraction- Low volume extraction

10.1.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware used for the extraction and needs to be double checked by a secondary tech before the extraction begins.

10.1.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not, there must be a comment in the comment section of the bench sheet. If there is no comment, then the sample is expired and must be brought to management's attention immediately.

10.1.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.1.4. Check the pH of the sample with wide-range pH paper and if necessary adjust with sodium hydroxide or HCl to a pH of 5.0-9.0. The pH is checked by dipping a pipette into the sample and touching it to the pH paper. Note the initial pH on the bench sheet. Residual Chlorine is to be checked for 608.3 sample and noted on the bench sheet.

10.1.5. Mark the water meniscus on the side of the glass sample container or measure out 250ml into a graduated cylinder. Spike all waters with 400uL of 8082 surrogate and transfer the contents to a 2L separatory funnel. Spike 400uL of 8082 LCS spikes into the batch LCS/D. If there are MS/D on the batch they receive 400uL of 8082 LCS spike as well. Rinse the container or graduate cylinder with CH_2Cl_2 and shake for 30 seconds and pour into the separatory funnel.

10.1.6. Add 15mL of CH_2Cl_2 to the sample container; rinse the entire surface and transfer the solvent to the separatory funnel.

10.1.7. Seal and shake the separatory funnel vigorously for 2 minutes on the stand mixer.

10.1.8. Replace the funnel in its stand and allow the water and the CH_2Cl_2 phases to separate for a minimum of 10 minutes. If the emulsion interface between layers is more than 1/3 the size of the solvent layer, the tech must employ mechanical techniques to complete the phase separation. A stirring rod, pre-cleaned with CH_2Cl_2 will work in most cases. If emulsion still occurs, the emulsion layer is transferred into 40ml VOAs and centrifuged for phase separation. Transfer back the aqueous layer to the separatory funnel.

10.1.9. Slowly drain the CH_2Cl_2 layer through a pre-rinsed filter funnel containing filter paper and about 5g of sodium sulfate into a labeled nipple condenser.

10.1.10. Repeat the extraction (Section 10.1.6 through 10.1.8) with 15ml of CH_2Cl_2 added to separatory funnel two more times, combining the extracts into the same nipple condenser each time along with thoroughly rinsing the filter funnel each time.

10.1.11. The initial volume is taken by returning the extracted water from the separatory funnel to the original amber liter. The level is brought to the line that was marked as the meniscus and then poured into a Class A graduated cylinder or calibrated Class B graduated cylinder. The initial volume is recorded to the nearest 10ml on the bench sheet.

10.1.12. The extract is now ready for the concentration step.

10.1.13. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.2 3546 8082A – PCB solid Extraction

10.2.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware/filter paper used for the extraction before the extraction begins.

10.2.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not there must be a comment in the comment section of the bench sheet. If there is no comment then the sample is expired and must be brought to management's attention immediately.

10.2.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.2.4. Wait for sample to come to room temperature. Using a metal spatula mix the sample well inside its own container to homogenize the entire matrix, note an excess of extraneous material(rocks, twigs, vegetation, or other) in the comment section of the SVOC soil extraction bench sheet.

10.2.5. Weigh approximately 15 grams of soil into a tared glass container or microwave vessel. Record the balance ID on the bench sheet. Record weight on bench sheet. Blend with approximately 5-10 grams sodium sulfate mix well to ensure the sample is free flowing and sand like consistency. Additional drying agent may be needed to achieve this consistency.

10.2.6. Transfer contents of the glass container to the microwave cells. Add 1 mL of 8082 surrogate solution into the sample. If the sample is a quality control sample, add 1mL of the 8082 spike.

10.2.7. Add 25 ml of 1:1 Hexane/Acetone; hand tighten the cell caps (may need to adjust volume to 25-40 ml according to the matrix).

10.2.8. Place the vessel in the sleeves and onto the rotor then into the microwave. (A minimum of 8 cells can be run at a time. Use the center row and space the cells out evenly.)

10.2.9. Go onto the one touch method, Select the appropriate method for the samples you are running and press start.

10.2.10. Extraction Conditions:

	Ramp (min)	Hold	Power	Temperature(^{o}C)
3546 100C Xpress (Small cells)	15-20	15	1030-1800	100

3546 100C Xpress plus (large cells)	15	15	290-1800	100
3546 100C Xpress plus glass (large cells with liners)	15	15	500-1500	100

10.2.11. When the microwave has finished running, remove samples tray and filter the samples through filter paper containing ~5g of sodium sulfate and collect in a labeled nipple condenser. Rinse the vessel 3 times with hexane, and pour through the funnel.

10.2.12. The extract is now ready for the concentration step.

10.2.13. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.3. 3540C – 8082A PCB Soxhlet Extraction

8082 3540C Recommended Extraction Amount	
Matrix	**Recommended Amount to Extract**
Asphalt Tar	0.5g
Blacktop	0.5g
Brick	3-5g
Caulking	1-2g
Cement	3-5g
Oil	0.5g
Paint (Chips)	2.0g
Paint (Pure)	0.5g
Soil	15g
Plain wood	10g
Wipe	Whole sample

10.3.2. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware/filter paper used for the extraction before the extraction begins.

10.3.3. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not, there must be a comment in the comment section of the bench sheet. If there is no comment, then the sample is expired and must be brought to management's attention immediately.

10.3.4. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match, the bench sheet must be changed to reflect the ID being used.

10.3.5. Wait for sample to come to room temperature. Using a metal spatula mix the sample well inside its own container to homogenize the entire matrix, note an excess of extraneous material(rocks, twigs, vegetation, or other) in the comment section of the SVOC soil extraction bench sheet.

10.3.6. Weigh approximately 15 grams of soil (or use above chart as a guide if different matrix) into a folded soil filter paper cone. Record the balance ID on the bench sheet. Record weight on bench sheet. Blend with approximately 5-10 grams anhydrous sodium sulfate, mix well and let dry at room temperature for five minutes (or until soil is free flowing). **Routine**

PCB samples may be air dried at room temperature up to 48 hours. For PCB wipes place entire wipe(s) into cone. Fold cone to fit collector tube and seal top.

10.3.7. Add 1 mL of surrogate solution into the sample. If the sample is a quality control sample, add 1mL of spike. In general a 1660 spike is used for the 8082 batch QC. However, other Aroclors can be spiked upon client request.

10.3.8. Prepare a 250-ml boiling flask with two or three boiling chips. Boiling chips must first be cleaned and tested before being used.

10.3.9. **NOTE: Boiling chips are cleaned by washing with Alconox and water. They are then rinsed with acetone (3X) and CH_2Cl_2 (3X). 10g of the boiling chips are extracted in 10mL of Hexane and tested on the 8082 instrument. If there are PCBs present the boiling chips must be rewashed and retested before use.**

10.3.10. Add 160-mL solvent to the boiling flask. Use 9:1 hexane: acetone for soil/sediment.

10.3.11. Connect all sections on the hot plate (boiling flask-> extraction tube-> condensation tower).

10.3.12. Turn on the water chiller.

10.3.13. Bring the solvent to a slow boil so that there are four complete cycles per hour.

10.3.14. Let the system reflux for 16 hours+/- 2 hours.

10.3.15. After 16 hours shut the system off and let cool for at least ½ hour. Turn off the hotplates then 15 minutes later turn off the cold water.

10.3.16. Drain any residual solvent in the extraction tube into the boiling flask. Filter the hexane in the boiling flask through the anhydrous sodium sulfate into a nipple condenser. Rinse the flask and filter. If water is observed in the sample, re-filter into a clean flask through sodium sulfate.

10.3.17. Store all portions of the extraction solvent and the solvent rinsate in a 250 mL amber bottle or nipple condenser until ready for the concentration step.

10.3.18. The extract is now ready for the concentration step.

10.3.19. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.4. 3580A- 8082A PCB Waste Dilution

10.4.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware/filter paper used for the extraction before the extraction begins.

10.4.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not there must be a comment in the comment section of the bench sheet. If there is no comment then the sample is expired and must be brought to management's attention immediately.

10.4.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.4.4. On an analytical balance transfer 1g of sample into a torn 10ml volumetric vial. Use a clean oil matrix if the sample is a quality control sample.

10.4.5. Record the balance ID on the bench sheet. Record weight on bench sheet.

10.4.6. Add 1 mL of 8082 surrogate solution into the sample. If the sample is a quality control sample, add 1mL 8082 spike.

10.4.7. Dilute to a 10 ml final volume using hexane. Pour into marked scintillation vials.

10.4.8. The sample is now ready for clean-up steps.

10.5 Concentration steps for PCB

10.4.9. The lab tech is responsible for labeling all needed vials with the correct number for the sample. The Lab ID, analysis, final volume, and techs initials are recorded in the bench sheet in TALS.

10.4.10. Carefully pour the sample extract into the Turbovap nipple condenser, rinse any glassware with appropriate solvent, and load the glassware into the vap.

10.4.11. Close the main lid, activate the active cells by pressing the associated button. The vap will initiate upon closure of the lid.

10.4.12. Maintain an ongoing visual observation of the concentration process through the window on the main lid. Once the solvent has reached a lower level, 10-2ml, the vap can be paused by simply lifting the main lid. The vap will continue once the lid closes.

10.4.13. Once the concentration process is complete, press the cell button to cancel gas flow or open the main lid. Transfer the nipple condenser.

10.4.14. Concentrate 8081/8082 extracts to approximately 2ml.

10.4.15. Solvent exchange water extracts in CH_2Cl_2 with 25 ml of Hexane, then concentrate to approximately 1ml. Using a 9" disposable glass pipette transfer the extracts to a 2ml Class A volumetric and rinse the nipple condenser with Hexane. Use the rinsate to top off the extract to 2ml then transfer the extract to a 4mL Vial.

10.4.16. Concentrate soil extracts in hexane to approximately 2ml. Using a 9" disposable glass pipette transfer the extracts to a 5ml Class A volumetric and rinse the nipple condenser with Hexane. Use the rinsate to top off the extract to 5ml then transfer the extract to a 20mL vial.

10.4.17. NOTE: If sample will not go down to recommended volume, note the final volume in the logbook and bench sheet.

10.4.18. The sample is now ready for necessary clean-up steps. See SVOC Sample Prep SOP *NE-ORG-ORGP-SOP49332*.

10.4.19. Once the concentration and clean-up steps are followed the extracts are ready to be analyzed.

NOTE: If using the 2 mL auto-sampler vials to determine the extract volume, Calibrate a vial with a volumetric syringe.

- **Measure out 1ml of solvent in a 1ml volumetric syringe, and transfer the solvent to the 2ml vial and cap the vial**
- **Mark off the solvent level on the vial and use this vial as a measuring tool.**
- **Calibration of the 2 mL auto-sampler vial should be done each day and for each solvent**

11) Calculations / Data Reduction

11.1. Waters, µg/L = C x D

Where:
C = Concentration of sample , µg/L.
D = Dilution Factor

11.2. Solids, µg/kg (dry weight basis) = (C x D x F) ÷ E

Where:
C = Concentration of sample , µg/L
D = Dilution Factor
E = (100 % - percent moisture) ÷ 100 %
F = Volume/Weight Factor - Volume of final extract (mL) divided by weight of sample (g)

11.3. Duplicates (Relative Percent Difference):

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\ \%$$

Where:
X1 = Original Results
X2 = Duplicate

11.4. LCS Percent Recovery:

$$\text{LCS \% Recovery} = \left(\frac{\text{Observed Conc. in LCS}}{\text{True LCS Conc.}}\right) \times 100\ \%$$

11.5. MS Percent Recovery:

$$\% \text{ Recovery of MS} = \left(\frac{\text{Observed Conc. in Spiked Sample} - \text{Sample Conc.}}{\text{True Spike Conc.}} \right) \times 100\ \%$$

11.6. Relative Error calculation:

$$RE = \frac{|\text{true conc} - \text{found conc}|}{\text{True conc.}}$$

11.7. Calculating the Calibration Factor (CF)

The Chrom software is utilized to automatically calculate the sample responses and calibration factors. For the Internal standard calibration using the average calibration factor, the CF is calculated as follows by using information taken from a known calibration sample.

$$RF = \frac{A_s \times C_{is}}{A_{is} \times C_s}$$

Where:

A_s = Peak area (or height) of the analyte or surrogate.
A_{is} = Peak area (or height) of the internal standard.
C_s = Concentration of the analyte or surrogate, in µg/L.
C_{is} = Concentration of the internal standard, in µg/L.

11.8. Calculating Parameter Concentration

The following equation is used to calculate the actual concentrations of constituents by using the raw data generated by the software.

$$C = Cr \times df$$

Where:
df = the dilution factor

$$df = d \times F$$

Where:
d = dilution used when running sample and normally will be documented in the sequence run log.

$$F = \frac{1000 \times vf}{vi \text{ or } wi}$$

Where:
vf = final volume of the extract (normally will be 1 or 2 mL)
vi = initial volume of the sample
wi= initial weight of the sample.

11.9. Manual integrations will be processed as stated in the most recent revision of the Manual Integration SOP, *NE-QA-QAS-SOP49197*.

11.10. %RSE Calculation:

To calculate RSE you need to know:

1. The true concentration of each calibration standard. This is x_i
2. The measured concentration of each calibration standard. This is x'_i
3. The number of standard levels in the curve. This is n
4. The type of curve (average, linear or quadratic) the type of curve determines the value of p. For an average curve, p=1, for linear p=2 and quadratic p=3

$$\%RSE = 100 \times \sqrt{\sum_{i=1}^{n} \frac{\left[\frac{x'_i - x_i}{x_i}\right]^2}{n-p}}$$

12) Method Performance

12.1. The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2. Demonstration of Capabilities – Prior to the analysis of samples, a Demonstration of Capabilities (DOC) as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.3. Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP, (*NE-QA-QAS-SOP49199*), must be performed initially and whenever a significant change is made to the analytical system. The MDL must be re-evaluated from quarterly MDL points at least every 12 months.

12.4. LOD and LOQ studies will be performed per the most current DOD requirement as described in the current SOP (*NE-QA-QAS-SOP49199*). The LOD and LOQ will be verified quarterly, in which DOD samples are analyzed.

13) Pollution Control

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*) for "Waste Management and Pollution Prevention" and the Rhode Island Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687).

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution.

14) Waste Management

14.1. Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to NE-EHS-HS-SOP54687. The following waste streams are produced when this method is carried out:

14.1.1. Contaminated disposable glassware utilized for the analysis. This waste is placed in trash containers and disposed with the regular lab trash.

15) References / Cross-References

15.1. EPA Methods 608.3-Organochlorine Pesticides and PCBs by GC/HSD. 40 CFR Part 136, Appendix A, December 2016.

15.2. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3510C: Separatory Funnel Liquid, Liquid Extraction, December, 1996, Revision 3.

15.3. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3540C: Soxhlet Extraction; December, 1996, Revision 3.

15.4. USEPA Test Methods for Evaluating Solid Waste (S-846); Method 3546: Microwave Extraction: February, 2007, Revision 0.

15.5. USEPA Test Methods for Evaluating Solid Waste (S-846); Method 3580A: Waste Dilution: July, 1992, Revision 1.

15.6. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3665A: Sulfuric Acid Cleanup; December 1996, Revision 1.

15.7. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3630C: Silica Gel Cleanup; December 1996, Revision 3.

15.8. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3620C: Florisil Cleanup; July 2014, Revision 4.

15.9. SW-846 Methods 8082A test methods for evaluating solid waste. Volume B: Laboratory Methods, physical / chemical methods, February 2007, Revision 1.

15.10. Massachusetts DEP, Feb 24,1999.

15.11. Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup, WSC-CAM, Revision No. 2, Section: V A Specific QA/QC Requirements and Performance Standards for SW-846 Method 8082A, February, 2024.

15.12. Connecticut DEP RCP, QA & QC Requirements, Polychlorinated Biphenyls by Method 8082, SW-846 Version 3.0 May 2024.

15.13. SW846 Method 8000D, Determinative Chromatographic Separations, Revision 4, July 2014, Update V.

16) Method Modifications

None

17) Revision History

Rev 1; 10/29/19
SOP put in use.

Rev 2; 12/16/19
LCS preparation volumes updated.
Updated the use of internal surrogate

Rev 3; 4/3/20
Grammatical corrections
Update 608 to 608.3 throughout
Clarify blank acceptance criteria
Remove reference to packed columns. Use of dual column clarified

Rev. 4, 5/1/20
IXX Reference updated to reflect 40 CFR Part 136, Appendix A.
IX updated to reflect blank runs reported to MDL- 2 sig. figure
IX added criteria for reporting analytes at lowest dilution level.
Clarified concentration steps for 8081B & 608.3

Rev. 5, 2/9/21
Section VII,A,2,D- Clarification of soil handling and preparation procedure.
Section VII,A,3,D- Clarification of soil handling and preparation procedure.
Section VII,A,4,D- Clarification of soil handling and preparation procedure.
Attachment II – updated instrument run method conditions.

Rev. 6, 1/25/22
Updated GC instrument conditions – Valve Front: changed from "Splitless" to "Split" in Attachment II.
All references to Element updated to reflect TALs

Changes to current revision:
Throughout the SOP: Conversion to standard D4 SOP format; Removal of reference to method 3550 Sonication; Update to procedure of 3510 to LVI 250ml parameters; Addition of residual chlorine check for 608.3 samples; Addition of method revision numbers; Update MCP & CRP reference versions; Removed HPS#21
Removed the following Sections because they were incorporated into other Sections of the SOP or covered by other SOPs: Leak (Wipe) Test Kit for Ni-63 ECD, Personnel Qualifications, MDL/LOQ/LOD, Data Management and Records
Section 2: Added that current reporting limits and control limits are found in TALS
Section 3: Added and removed some definitions
Sections 4, 5, 8, 10, 12, 14 and 15: Updated text
Section 6: Changed name from Apparatus and Materials to Equipment and Supplies; Updated text
Section 7: Removed Isooctane; Updated text
Section 9: Added Table 6; Updated text
Sections 11, 16, 18.9, 18.10 and 18.11: Added new Sections - Calculations / Data Reduction and Method Modifications, Corrective Actions, Turbovap Operating Conditions and 608.3 QC Acceptance

Criteria
Section 13: Changed name from Pollution Prevention to Pollution Control; Updated text
Sections 18.4 and 18.6: Updated column type

18) Appendix

18.1. Settings and Temperature Programs

18.2. Instrument Conditions

18.3. This section describes the instrument conditions (temperature programs) for the GCs and the retention times (which are subject to shift) for the method analytes. HPS#11, HPS#12 and #19 are the primary PCB instruments.

18.4. Primary GC with Confirmation Column (Penomenex ZB-CLPestiside 1 & 2 Columns)

18.5. Agilent 6890 Series GC System (HPS #11 and #12 with dual ECDs) instrument conditions:

Initial Temp	180
Oven Temp 1	230
Oven Temp 2	310
Oven Temp 4	(Off)
Injector Temp Cap Front	280
Detector Temp ECD Front	320
Detector Temp ECD Back	320
Time 1	0.50min
Purge Gas Front	30.0 mL / min
Purge Gas Back	30.0 mL / min
Makeup Gas Front	60.0 mL / min
Makeup Gas Back	60.0 mL / min
Rate 1	10 degrees / minute
Rate 2	15 degrees / minute
Valve Front	Split
Output	ECD Front
Output	ECD Back

18.5.1. Parameter:

Parameter:	Ret. Time (min): CH A	CH B
2-4-5-6-TC-M-Xylene (Surrogate)	2.362	2.072
PCB-1221	*	*
PCB-1232	*	*
PCB-1242	*	*
PCB-1248	*	*
PCB-1254	*	*
PCB-1260	*	*
PCB-1262	*	*
PCB-1268	*	*

Decachlorobiphenyl (surrogate)	10.980	8.290

* Multiple Peak Response

18.6. Primary GC with Confirmation Column (Penomenex ZB-CLPestiside 1 & 2 Columns)

Agilent 7890 Series GC System (HP #19 with dual ECDs) instrument conditions:

Initial Temp	180
Oven Temp 1	230
Oven Temp 3	310
Oven Temp 4	(Off)
Injector Temp Cap Front	210
Detector Temp ECD Front	320
Detector Temp ECD Back	320
Time 1	0.50m
Purge Gas Front	30.0 mL / min
Purge Gas Back	30.0 mL / min
Makeup Gas Front	60.0 mL / min
Makeup Gas Back	60.0 mL / min
Rate 1	10 degrees / minute
Rate 2	15 degrees / minute
Valve Front	Split
Output	ECD Front
Output	ECD Back

18.7.

Parameter:	Ret. Time (min): CH A	CH B
2-4-5-6-TC-M-Xylene (Surrogate)	3.03	2.96
PCB-1016	*	*
PCB-1221	*	*
PCB-1232	*	*
PCB-1242	*	*
PCB-1248	*	*
PCB-1254	*	*
PCB-1260	*	*
PCB-1262	*	*
PCB-1268	*	*
Decachlorobiphenyl (surrogate)	11.95	9.65

* Multiple Peak Response

18.8. A second gas chromatograph column or mass spectrometer (GC / MS) technique must be used for the qualitative confirmation when analyzing unfamiliar samples, or samples that are not within the retention time windows. This second column must be a dissimilar phase from the first column. In Eurofins Environment Testing's case HPS#11, #12 and #19 can be used to provide confirmation results because they are all dual ECDs.

18.9 Corrective Actions

If the continuing calibration technical acceptance criteria are not met, it becomes necessary to take corrective actions to achieve the acceptance criteria. Continuing calibration technical acceptance criteria ***MUST*** be met before any samples or required blanks are analyzed in an analytical sequence. Any samples or required blanks analyzed when continuing calibration criteria were not met will require reanalysis. Remedial actions, which include but are not limited to the following, must be taken when criteria are not met:

- Check and adjust GC operating conditions.
- Clean or replace injector liner.
- Flush column with solvent according to manufacturer's instructions.
- Break off a short portion (approximately 2-6 cm) of the column.
- Replace the GC column (performance of all initial calibration procedures are then required).
- Prepare and analyze new continuing calibration
- Prepare a new initial calibration curve.
- See also Section 18.12: Preventative Maintenance Checklist.

18.10 Turbovap Operating Conditions

- Temperature: target set @ 43°C
- Pressure: target set @ 1.0 ml/min

18.11 608.3 QC Acceptance Criteria

TABLE 4 – QC ACCEPTANCE CRITERIA

Analyte	Calibration verification (%)	Test concentration (µg/L)	Limit for s (% SD)	Range for $\bar{X}$ (%)	Range for P (%)	Maximum MS/MSD RPD (%)
Aldrin	75 - 125	2.0	25	54 - 130	42 - 140	35
alpha-BHC	69 - 125	2.0	28	49 - 130	37 - 140	36
beta-BHC	75 - 125	2.0	38	39 - 130	17 - 147	44
delta-BHC	75 - 125	2.0	43	51 - 130	19 - 140	52
gamma-BHC	75 - 125	2.0	29	43 - 130	32 - 140	39
alpha-Chlordane	73 - 125	50.0	24	55 - 130	45 - 140	35
gamma-Chlordane	75 - 125	50.0	24	55 - 130	45 - 140	35
4,4'-DDD	75 - 125	10.0	32	48 - 130	31 - 141	39
4,4'-DDE	75 - 125	2.0	30	54 - 130	30 - 145	35
4,4'-DDT	75 - 125	10.0	39	46 - 137	25 - 160	42
Dieldrin	48 - 125	2.0	42	58 - 130	36 - 146	49
Endosulfan I	75 - 125	2.0	25	57 - 141	45 - 153	28
Endosulfan II	75 - 125	10.0	63	22 - 171	D - 202	53
Endosulfan sulfate	70 - 125	10.0	32	38 - 132	26 - 144	38
Endrin	5 - 125	10.0	42	51 - 130	30 - 147	48
Heptachlor	75 - 125	2.0	28	43 - 130	34 - 140	43
Heptachlor epoxide	75 - 125	2.0	22	57 - 132	37 - 142	26
Toxaphene	68 - 134	50.0	30	56 - 130	41 - 140	41
PCB-1016	75 - 125	50.0	24	61 - 103	50 - 140	36
PCB-1221	75 - 125	50.0	50	44 - 150	15 - 178	48
PCB-1232	75 - 125	50.0	32	28 - 197	10 - 215	25
PCB-1242	75 - 125	50.0	26	50 - 139	39 - 150	29
PCB-1248	75 - 125	50.0	32	58 - 140	38 - 158	35
PCB-1254	75 - 125	50.0	34	44 - 130	29 - 140	45
PCB-1260	75 - 125	50.0	28	37 - 130	8 - 140	38

S = Standard deviation of four recovery measurements for the DOC (Section 8.2.4)
$\bar{X}$ = Average of four recovery measurements for the DOC (Section 8.2.4)
P = Recovery for the LCS (Section 8.4.3)

Note: *These criteria were developed from data in Table 5 (Reference 2). Where necessary, limits for recovery have been broadened to assure applicability to concentrations below those in Table 5.*

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18.12

Gas Chromatograph Preventative Maintenance Checklist
HP 6890 & 7890 Gas Chromatograph Preventative Maintenance Checklist

- ☐ If detectors are operational and in the "on" state: note the starting signal for later reference.
- ☐ Note instrument parameters.
- ☐ Power down the system.
- ☐ Open instrument covers and clean out any loose dirt or dust. Pay particular attention to cooling fans.
- ☐ Perform a general inspection looking for safety or electronic/mechanical failures. Including loose cables and proper insulation of heated zones.
- ☐ Power the instrument "on" and observe the self-test. Note any errors and refer to service manual.
- ☐ Check oven motor for noise and excessive vibration (spin down is a good qualitative indicator of bearing condition).
- ☐ Check operation of all cooling fans that are present for airflow (including inlet cooling fan, rear electronics fan, and oven intake fan).
- ☐ Check operation of oven flaps in the rear of the instrument.
- ☐ Perform injection port maintenance including replacement of the septum, inlet liner, inlet seal, and split line filter.
- ☐ Perform an inlet leak test as described in the appropriate instrument service manual.
- ☐ Clean and inspect the exterior of the instrument.
- ☐ If an autosampler (7673) is installed on the GC, then perform the required maintenance:
    - o Check bracket alignment and belt tension.
    - o Check tray, clean gripper jaws and tray arm.
    - o Check controller and clean any dust off of the boards, vents and cover.
    - o Check injector,
        - ▪ Pull out the injection turret and clean.
        - ▪ Clean the needle guide cone, the needle support and nearby surfaces.
        - ▪ Clean the surface of the injector.
        - ▪ Clean any dust that builds around the electronics assembly.
        - ▪ Re-install turret.
- ☐ Perform detector maintenance as required:
    - o Flame Ionization detectors include cleaning of the sample path and the jet. Check make-up gas flow, airflow, and hydrogen for proper settings. Light flame and note signal.
    - o Notes:_____
    - o Electron Capture detectors. Lab personnel cannot clean electron capture detectors. Check make-up gas flow, anode purge flow and note signal level. Depending on signal level and consistency of sensitivity, ECD may need to be exchanged; consult with logbook for detector history.
    - o Notes:_____
    - o Photo ionization detectors include checking auxiliary gas flow and signal level. Note that signal level is dependent on lamp power supply setting. Clean lamp lens. Replace lamp. Confirm proper connection of signal and power supply leads.
    - o Notes:_____

End of document

Version history

Version	Approval	Revision information	
6	20.SEP.2022	D4 Template for Analytical SOPs -	
7	14.JUN.2024		
8	08.AUG.2024		

eurofins	Always check on-line for validity. **Metals by ICP SW846 6010D**	Level: **Standard Operating Procedure**
Document number: **NE-WC-ICPAES-SOP49298**		
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Version: **1**		Organisation level: **4-Business Unit**
Approved by: **SBB9** Effective Date: **15-SEP-2022**	Document users: **EENE_Metals**	Responsible: **EENE_QA**

The attached document was previously approved by the Eurofins Environment Testing Americas QA through TANet or Sharepoint. The document is added here for access to those laboratories using D4.

1.0) Scope and Application

Attachment:
1, Metals by ICP SW846 6010D (.pdf)

End of document

Version history

Version	Approval	Revision information	
1	15.SEP.2022	D4 Template for Analytical SOPs -	

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STANDARD OPERATING PROCEDURE
For
Metals Analysis
By
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)

SW846 6010D, SM2340B

Prepared by: 01/31/2022

Reviewed by:

Laboratory Director: Mark Brueu 01/31/2022

TABLE OF CONTENTS
Metals Analysis by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)
SW846 6010B, SM2340B

I. SCOPE AND APPLICATION

A. This method describes the measurement of metals extracted from soil and water using nitric and hydrochloric acids.

B. This method can be used to calculate Total Hardness and Calcium Hardness by SM2340B.

C. The following metals may be determined by this method:

Aluminum	Manganese
Antimony	Molybdenum
Arsenic	Nickel
Beryllium	Phosphorus
Barium	Potassium
Boron	Selenium
Cadmium	Silicon
Calcium	Silver
Chromium	Sodium
Cobalt	Strontium
Copper	Thallium
Iron	Tin
Lead	Titanium
Lithium	Vanadium
Magnesium	Zinc

II. SUMMARY OF METHOD

A. This method provides the conditions for the detection of ppb levels of certain metals by inductively coupled plasma (ICP) spectrometry.

B. A sample of known volume (50 mL) or known weight (1 g) is digested using nitric and hydrochloric acids.

C. The digestate is diluted to a known final volume with DI water.

D. The sample is pumped through the ICP.

E. This method utilizes the internal standard calibration technique to determine the metals present. This is done by comparing the intensity of the sample for each metal to the response of the calibration standard relative to the corresponding internal standard element.

III. HEALTH & SAFETY

To maintain the application of OSHA regulations regarding the safe handling of the chemicals specified

in this method, the laboratory must follow proper safety procedures:

A. All chemical solvents should be transported on a cart when moved from room to room.

B. All analytical operations, such as digestions, must be performed under a hood expressly designed for acid use.

C. Safety glasses, gloves and protective clothing must be worn when preparing standards and digesting samples.

D. The analyst must wear safety glasses and take extra care when opening the gas cylinders or checking for leaks in the gas lines. (See Eurofins Environment Testing New England's chemical hygiene plan on using compressed gas cylinders.)

E. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the hood and chemical cabinets. (See Eurofins Environment Testing New England's waste disposal plan.)

IV. CAUTIONS

A. Be sure to carefully filter each sample to prevent particles getting into the ICP and clogging the nebulizer.

B. Glassware must be carefully washed using our labware washing SOP.

V. INTERFERENCES

A. Overlapping of spectral lines is the major source of possible interference. High concentrations of certain elements may interfere with the accurate reading of another element's intensity. To correct for this possibility, interference check standards are run to determine the proper compensation, if necessary.

B. Method interference may also be caused by contaminates in other reagents and glassware. Therefore, to further prevent cross contamination of samples, all these materials must be routinely checked by running a laboratory blank which has been digested under the conditions of the analysis.

C. High concentrations of any metals can cause memory effects. Therefore, the tubing should be rinsed after a heavily contaminated sample and periodically during any run. All glassware used should be thoroughly acid-rinsed to remove any existing contamination.

D. Matrix interference by co-extracted materials can pose a problem in determination of metal concentrations. Periodic matrix spikes can help determine if this is indeed the case.

VI. REAGENTS

A. Hydrochloric acid (HCl): TraceMetal grade.

B. Nitric acid (HNO_3): TraceMetal grade.

C. Reagent water: deionized water of sufficient quality to assure all targets are below the RL.

D. Various Primary and Secondary Standards as listed in Table 2. All prepared working standards and reagents must be logged into Element with all pertinent information including solvent (acid) lot numbers.

NOTES:

- All newly received standards and reagents from the vendors must be logged into TALS. The COA must be scanned and added to TALS on the doc window on the Reagent screen for the appropriate standard. If the COA is not supplied with the standard, then the vendor must be contacted to obtain a copy of the COA.

- The standards and reagents must be properly labeled with the TALS ID, received date, expiration date, and opened/prepared date with the preparer's initials, if made in-house.

- Check all reagents and standards for expiration date prior to use.

VII. APPARATUS AND MATERIALS

A. Inductively Coupled Plasma Spectrometers(ICP):

1) Thermo iCAP 6500 DUO

2) Thermo iCAP 7400 DUO

3) Optimization:

a) See Tables 3 and 4 for maintenance and trouble shooting

b) An Auto Peak can be performed on an approximate monthly basis to correct any drift of the peak alignment.

B. Volumetric flasks = 25, 50, and 100 mL with glass stoppers, Class A

C. Plastic solvent wash bottles

D. Mechanical Pipetters – variable volume capacities with tips

VIII. INSTRUMENT CALIBRATION

A. Obtain a stock solution of each of the metals to be run. Keep tightly capped in a plastic bottle away from the samples to be analyzed. Silver standards should be kept in a box to block exposure to light.

B. Prepare calibration standards at a minimum of four concentrations plus a blank by spiking the appropriate amount of stock solution into one liter of 5% nitric acid solution as shown in Table 2. The low level calibration standard concentrations are equivalent to the aqueous method reporting limits.

C. Refer to the instrument manual for exact directions on running the calibration. The instrument should be calibrated before each run or 24 hour period.

D. Separate calibrations must be performed for aqueous and solid analyses; all standards must have acid concentrations that are matrix matched.

E. Any single standard may be rerun once. However, a repeated failure requires that the standard be re-prepped and reanalyzed. If it fails again, then the instrument calibration must be rerun.

Note: The concentration ranges of these solutions must **bracket** the linear working range of the instrument for each elemental wavelength if an LDR study is not performed.

IX. SAMPLE COLLECTION, PRESERVATION, AND HANDLING

Refer to the SOP for *Sample Preparation for Metals Determination.*

X. PROCEDURE

A. Refer to the SOP for *Sample Preparation for Metals Determination* for the proper digestion procedure for samples.

B. Refer to Table 3 and perform the required preventative maintenance. Be sure to record all maintenance activity in the appropriate maintenance logbook.

C. To light the instrument, click on the grey flame icon on the bottom of the task bar and then the plasma on button. Once lit, allow the instrument to warm for a minimum of 30 minutes prior to calibrating.

D. To set up a calibration, right click on the most recent group header under the analysis tab, and click copy/edit method. This will bring you to the method tab. Under automated output, change both file names to today's date and then press the apply to all sample types button. Click on

sequence automation line to change the rinse time to 30 seconds and add "calibration" to the initial action box. Press save, then go to the sequence tab. Click auto-session, new autosampler to save a new rack. Once the rack is added to the queue on the left, right click autolocate to automatically position the nine calibration standards (see table 2 for list of calibration standards and concentrations). Press the triangle play button to begin calibration.

E. Once the calibration is complete, click on the method tab and select "elements" to view the calibrations. All calibrations should be set to linear, with a minimum R^2 value of 0.998.

a. Any standard can be remade and rerun once per calibration. To rerun a calibration point, go back to the analysis tab, and click on Run, then calibration. This will open a box with all of the calibration standards listed. Manually move the autosampler to the desired standard in the sequence window. Click on the standard you are rerunning, select which analytes are to be run (any IECs of the selected lines will automatically be included) and then click run. Once you are satisfied with the calibration, click done, which will print the calibration curves for each analyte.

F. Once a calibration has been accepted, right click on the group header and copy/edit method to go back to the method tab. On sequence automation, delete the "calibrate" line that was previously added and increase the rinse to a minimum of 90 seconds when soils are being run, 60 seconds for aqueous samples. Press save.

G. To run initial calibration QCs, go to the sequence tab and click on the autosampler rack that was previously added for calibration. The 9 calibration standards should be gone from the rack, if they are still present, close the rack and reopen a new one. Add a sample to the rack. You can then click the yellow tube icon 7 times to add the necessary QCs. On the right hand column, select each standard's check table, and rename the qc to match. Enter the position numbers (counts starting from top left, then moving across row 1-5 before moving down a row to number 6, etc). Once positioned, the batch sample that was added can be deleted. Press play to run the initial QCs. See section XIII.B. for criteria for each QC.

H. Print a hard copy of the calibration blank. Label with the initials of the analyst, the calibration date, whether the calibration was aqueous or soil, any calibration standards that were rerun (and for what analytes) and the internal standard used on the header. On the bottom, document any initial qc failures, as well as any analytes that failed the calibration.

I. Samples can also be added manually using the add sample button. Add all instrument QCs using the yellow tube button. Once all sample and rack positions are entered, press the grid icon to toggle between list view and the rack image view. Confirm that the pictured rack positions match the poured sample rack. Press the triangle play button to begin. At any time, samples can be added to the queue. Sample data will automatically print to pdf files, as well as be exported for uploading in LIMS.

XI. DATA CALCULATION

The instrument prints out a value in ppm for each element run. This number is multiplied by the factor for the sample. The factor is the final volume divided by the initial volume or weight. If additional dilutions are made to the sample due to high concentrations of target elements this must also be incorporated into the calculation for the final result. This calculation is done by our LIMS system: TALS. The analyst and the manager check the relative standard deviation between the readings for each element to assure it is less than 20 and make sure QC samples are in control. When each batch is thoroughly

checked it is updated to lab completed. For soil/sediment samples the results must be reported on a dry weight basis.

Example calculation for soil/sediment samples:

$$\frac{\text{Final volume X post-digestion dilution (if applicable) X result from instrument}}{\text{Initial weight X \% solids}}$$

Example calculation for aqueous samples:

$$\frac{\text{Final volume X post-digestion dilution (if applicable) X result from instrument}}{\text{Initial volume}}$$

The 6010D results can also be used to calculate the Total Hardness and Calcium Hardness by SM2340B of a sample. The calculation is as follows:

2.497 [Calcium concentration] + 4.118 [Magnesium concentration] = Total Hardness mg/L $CaCO_3$

2.497 [Calcium concentration] = Calcium Hardness mg/L $CaCO_3$

XII. COMPUTER HARDWARE AND SOFTWARE

Each instrument has its own specific software, and thus has its own computer to operate the instrument. The iCAP instruments are operated by *iTEVA* software. The laboratory-wide LIMS is *TALS*.

XIII. QUALITY CONTROL

A. Initial Demonstration of Performance

1. An MDL study is performed on a yearly basis or whenever major changes are made to the instrument setup. Refer to section XIV for more information.

2. A Precision and Accuracy (P&A) study is tabulated once a year for each analyst and when methods change dramatically. Each new analyst must perform a P&A study as part of their training. The analyst must analyze at least 4 LCS samples separately at least one day apart. The standard deviation is calculated to give a measure of the precision and accuracy of the analyst and/or method. Refer to section XIV for more information.

3. An IDL study should be performed at a minimum on an annual basis, use of new equipment, after major instrument maintenance, and/or at a frequency designated by the project. IDL's are determined as the mean of the blank results plus three times the standard deviation of 10 replicate analyses of the reagent blank solution. Each measurement should be performed as though it were a separate analytical sample.

4. All inter-element correction factors must be verified and updated every six months, at a minimum. IEC's are verified by analyzing single element standards to show analytes not added to the standard are less than ± RL for those analytes.

5. Because of the multi-point calibration used, a linearity check, LDR (Linear Dynamic Range) is **not** performed. Therefore, all results exceeding the concentration of the highest calibration standard must be diluted and reanalyzed until the result is within the working calibration range. However, an LDR should be analyzed if a multi-point calibration is not used. The LDR is determined by analyzing progressively higher standard concentrations until the observed concentration is not less than 90% of the standard true value. If being used, the LDR should be analyzed quarterly and verified daily after calibration before sample analysis.

B. Daily calibration:

1. A minimum of three replicate exposures are required for standardization, all Quality Control, and sample analyses. The average result of the multiple exposures shall be used.

2. A regression curve is calculated. The analyst must check the correlation coefficients(r), which must be ≥ 0.995, or the coefficient of determination (r^2) should be ≥0.990. This is checked to determine the accuracy of the standard solutions and the instrument run.

   NOTE: Inversely weighted linear regressions are recommended in order to minimize curve fitting errors at the low end of the calibration curve. However, second-order calibration curves may be used for alkali or alkaline earth metals. In which case, the effective range must be checked and the second-order fit should have a correlation coefficient(r) ≥0.995.

3. Initial Calibration Verification/Blank (ICV/ICB), a blank, and a mid-level QC are run immediately after calibration to check the calibration curve. This QC is made from a different source than the calibration standards. The recovery from this QC must fall within 10% of its known value. The blank must be less than ½ of the reporting level of each element.

4. Interference check standards are run to insure proper corrections for interferences. The ISCA (aka SIC, IFA) is run first and has high concentrations of interfering elements. The ICSAB (aka IFB) is run next which is a mix of ICSA and ICSAB. The results must be within 20% of the known value for the analytes included in the ICSA and ICSAB. The absolute value of the concentrations for analytes not included in the ICSA and ICSAB must be < 2X RL. The check standards are run at the beginning and end of each run and every 12 hours.

5. Samples with concentrations of elements higher than the IFA check must be diluted until the concentration is less than the IFA check solution. Reanalysis of a diluted sample is required even it the high concentration element is not required to be reported since the purpose of the IFA solution is to evaluate spectral interferences on other elements.

NOTE: Method 6010D only requires the analysis of the IFA solution at least once per day, immediately after the initial calibration. The analysis of the IFB is included above due to requirements by some regulating agencies who have not yet adopted 6010D.

6. A low level QC standard, CRI, is analyzed after each calibration. The concentration of the CRI must be equivalent to the reporting level of the analytes and prepared from the same source standards as the calibration. The CRI shall be run for every wavelength used for analysis. The results must be within 20% of the known value.

C. After all of these checks pass, a sample run may be started. During the run, several QC checks are performed, some starting from the digestion process (refer to the SOP for *Sample Preparation for Metals Determination)*:

1. A method blank is prepared for every batch of 20 samples or less. The purpose is to detect any contamination in the reagents or glassware used. The method blank should be <1/2 RL or < 10% of the lowest sample concentration for each analyte in the batch.

2. A Blank Spike/Blank Spike Duplicate, SRM/SRM Duplicate (LCS/LCSD) are also run every 20 samples. A Blank Spike and a Blank Spike Duplicate are prepared with DI water (for aqueous samples) or leachate fluid (for leachate samples) that has been fortified with a known concentration of metals. For soil, sediment, sludge, paint chip, or dust wipe samples an SRM and SRM Duplicate are prepared from a soil with a known. The recovery must be within 15% of the calculated value for the Blank Spike. The SRM must be within vendor limits. This check determines if there is a technical error in the way the method is being performed. The RPD between the Blank Spike/Blank Spike Duplicate must be $\leq$20.

3. A calibration check standard is run to ensure good results and is prepared from the same source standards as the calibration. This CCV must be within 10% of true value. The CCV is run every 10 samples and at the end of the run.

4. Calibration blanks are prepared in the same manner as the standards using laboratory reagent water. The calibration blanks (CCB) are analyzed every 10 samples after the CCV and at the end of the run.

5. A low level QC standard, CRI, should be analyzed after each batch of samples. The analysis of a CRI on a more frequent basis will minimize the number of samples for re-analysis should the CRI fail. The concentration of the CRI must be equivalent to the reporting level of the analytes. The CRI shall be run for every wavelength used for analysis. The results must be within 20% of the known value.

6. There is a duplicate digested and run for every batch of 20 samples or less. The RPD between the source sample and duplicate must be $\pm$ 20% for results $\geq$5X the RL or be within $\pm$RL for results <5X the RL. If the duplicate is greatly different the lab may elect to re-digest the sample for confirmation. The discrepancy is narrated in the LIMS.

7. For each batch of 20 or less samples, a matrix spike and matrix spike duplicate are performed. A known amount of metals is added to the sample. The RPD between the MS and MSD must be within 20%. The % recovery must +/- 25%. If it is not, then a post digestion spike (PDS) is performed to determine if the data is suspect due to matrix interference.

   a. If the post digestion spike does not meet the % recovery of 75-125% then matrix interference is confirmed. However, if the MS, MSD, and post spike recoveries are <30% and the samples have detectable concentrations, perform the serial dilution. See grey box below on how to perform serial dilution:

Serial Dilution:
A sample is analyzed along with a 1:5 dilution of the sample. If the sample is analyzed with an initial dilution, then a 1:5 dilution of the diluted sample must be analyzed for the dilution test. An analysis of a 1:5 dilution should agree within ± 20% of the original determination. If not, then a chemical or physical interference effect should be suspected.

If matrix spike recoveries are <30% and there no detectable concentrations in the samples, then re-digest the samples and re-analyze. If the recoveries in the re-digest are also <30%, then report both sets of data.

D. If any of these QC checks fail, another is run. If it fails again, the instrument is checked thoroughly. The tubing must be checked for clogs and leaks, and the Argon pressure should be similar to what it was at the beginning of the run. If no problems are found, the instrument is recalibrated. In case of serious problems in the running of the instrument, the manufacturer can be contacted.

E. Any samples with out-of-control data are automatically re-run when instrument QC results are acceptable. If needed, samples may be reported with a raised reporting limit when blank results are high.

F. Samples that exceed the concentration of the highest calibration standard, or LDR, must be rerun at a dilution that will bring the resulting concentration within the calibration range.

G. If at any time the instrument is not running acceptably, samples may be run using method 6020 on the ICP-MS.

H. Dissolved metals should always be less than total metals. However, depending on the sample, dissolved and total metals may be the same. When this is the case, the results for dissolved metals may be greater than the total metals. If the results are within 20% RPD, the data can be reported. If, however, the RPD is > 20%, both the total and dissolved sample aliquots must be repeated to confirm the data.

$$\% \text{ RPD} = [(A-B)/C]X100$$

Where A and B are the results of the total and dissolved
C= Average of results of total and dissolved

XIV. METHOD DETECTION LIMIT

A. MDLs

1. Eurofins Environment Testing New England performs MDLs also known as Limit of Detection (LOD) study on all instruments/ method in support of state and other program requirements such as CAM, RCP, ASP, CLP-like deliverables and specific project quality assurance objectives by carrying out a new study annually or by completion of quarterly limit of detection (LOD) verification and Limit of Quantitation (LOQ) analysis.

2. MDL studies are performed in accordance with the revision 2 procedures in 40 CFR Part 136, appendix B. Initial MDL studies are performed when a new instrument is installed or undergoes major maintenance. Quarterly data collection is performed thereafter. Please refer to the current SOP for Establishment and Reporting of Detection Limits for specific details.

B. LOD Verification

Limit of Detection (LOD) verification is defined as an estimate of the minimum amount that an analytical process can reliably detect. Prior to use, MDL values are verified quarterly by preparing an LOD at a concentration less than four times the MDL The LOD is acceptable if it produces a peak at least 3 times above the instrument's noise level. If a response is not acceptable or detected, the concentration of the failing analyte shall be increased until an acceptable response is observed, however, it should not exceed the reporting limit. LOD verifications are analyte, matrix, extraction method, and instrument configuration specific. The LOD verifications are logged in by QA on an annual basis. LOD verification will replace the annual MDL study except where specified by the method or program that a reoccurring MDL study is required.

C. LOQ

Limit of Quantitation (LOQ) is defined as the minimum concentration of an analyte/compound that can be reported with a specified degree of confidence or the lowest concentration that produces a quantitative result within specified limits of precision and bias. LOQ is set at or above the concentration of the lowest initial calibration standard. EETNE defines the LOQ = RL. The LOQs are analyzed once per analysis, matrix and extraction method. The LOQ may also serve as ongoing demonstration of capability of analyst. A minimum of four consecutive replicates are analyzed at a concentration of the lowest initial calibration standard on a quarterly and/or annual basis; however, LOQ may be analyzed as high as 2 times the reporting limit.

D. Precision & Accuracy (P&A)

P&A is an annual requirement for each analyst and is an ongoing demonstration of their capability. As mentioned above, the LOQ can also serve as the P&A; however, each analyst performing the method must demonstrate capability on an annual basis. If an LOQ was not performed by an analyst, then four LCS spikes must be entered into the P&A demonstration of capability form to calculate the P&A recovery within the method limits. For analytical methods that don't have LCS spikes, blind proficiency tests can serve as ongoing capability.

See the most recent revision of the SOP for Establishment and Reporting of Detection Limits

XV. METHOD PERFORMANCE

A. Control charts are a useful tool when monitoring the quality system within the lab. They are used to monitor trends and detect out of control conditions such as shifts in mean recovery. Control charts can be generated in TALS based on a variety of instrument and batch QCs. The control chart will utilize a minimum of 30 data points and also show standard deviation, the mean, 2S and 3S lower and upper limits for review. Corrective actions can include, but are not limited to, replacing a degrading standard or recalibrating an instrument that is showing repeated problem.

B. All corrections made in any record or document pertaining to the analytical process **must** be in accordance with the following NELAC requirement: "Entries in records shall not be obliterated by methods such as erasures, overwritten files or markings. All corrections to record-keeping errors shall be made by one line marked through the error. The individual making the correction shall sign (or initial) and date the correction. These criteria also shall apply to electronically maintained records."

XVI. POLLUTION PREVENTION

A. Never dispose of samples, reagents, chemicals, or waste waters by pouring them down the sink. Always use designated waste containers for disposal.

B. Plan accordingly to limit waste accumulation. Make only the amount of reagent that can be used before the expiration date. Do not make in excess.

C. Clients should provide a sufficient amount of the sample for the requested analysis. Excess amounts of the sample result in increased disposal fees for the laboratory.

XVII. WASTE MANAGEMENT

EETNE is dedicated to implementing ways to efficiently utilize resources along with complying with all environmental laws and regulations in order to reduce the accumulation of waste as defined in EETNE's

Chemical Hygiene Plan. All questions and/or problems should be referred to the Health and Safety Manager.

A. Aqueous Wastes:

1. All solvent contaminated water must be collected in lab satellite-containers then transferred to a waste drum in the hazardous waste staging area where they are monitored and ultimately disposed of by a hazardous waste disposal facility.

2. All non-solvent contaminated aqueous wastes (including preserved water, digestates, instrument effluents, and corrosive aqueous wastes) are accumulated in lab satellite-containers and transferred to a drum in Hazardous Waste staging area #2 where they will be disposed by a licensed hazardous waste facility.

3. COD(Chemical Oxygen Demand) vials are disposed in a designated drum.

B. Solids:

1. Expired soil samples in the storage area are emptied into a drum and a sample is collected. The method of disposal will be determined by the findings of the sample profile.
2. Expired PCB (polychlorinated biphenyls) containing samples (marked with yellow tape) are segregated and collected in the waste staging area and packed for disposal by a licensed hazardous waste facility.

3. Objects containing high levels of mercury (samples, broken thermometers, etc.) are segregated and collected in the waste staging area and packed for disposal by a hazardous waste facility.

C. Sludge, Tars, Oils: These samples are accumulated in the waste staging area and packed for disposal by a hazardous waste facility/transporter.

D. Highly contaminated objects (reagents, chemicals, vials, samples) are segregated and collected by each dept. to avoid mixing of incompatible materials. It is then collected, and packed periodically throughout the year by hazardous waste disposal facilities.

XVIII. REFERENCES

"Method 6010D, Inductively Coupled Plasma Atomic Emission Spectroscopy," *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* , U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, Revision 4, July 2014.

ASP Exhibit E, Part III – Inorganic Analysis Specific QA/QC requirements, NYSDEC, 07/2005.

"SM2340B (11)", *Standard Methods for the Examination of Water and Wastewater*.

"Method 7010 Graphite Furnace Atomic Absorption Spectrophotometry," *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, Revision 0, February, 2007, Figure 1.

Comprehensive Quality Assurance Manual, Eurofins Spectrum Analytical, Inc, most current revision, Table 13.1

Client-specified Standards, QAM and QAP, see SAI SOP program for most current revision.

XIX. REVISIONS

- 11/19/19 Revision 0- SOP created
- 1/14/22 Revision 1
  - Element replaced by TALS throughout document
  - Updated header to replace logo
  - Section X.I- removed references to old sequence builder. Changed print type from pcl to pdf.
  - Section XI.- changed validation to lab completed
  - Section XIII.B.6- replaced CRL with CRI
  - Section XIII.I- removed (special client information, no longer relevant)
  - Section XV.A- removed reference to former control chart program
  - Section XX- TALS added to definitions

XX. DEFINITIONS

BLK - Blank

BS – Blank Spike

CCB – Continuing Calibration Blank

CCV – Continuing Calibration Verification

COA – Certificate of Analysis

DI – de-ionized

DQO – data quality objective

Duplicate (DUP) – Sample Duplicate

EETNE- Eurofins Environment Testing New England

ICV – Initial Calibration Verification

ICB – Initial Calibration Blank

ICP – Inductively Coupled Plasma

ICP-MS – Inductively Coupled Plasma Mass Spectrometry

ICSA/ICSAB – ICSA/ICSB - INFA/INFAB – SIC-Interference Check Standards contain known amounts of interference

IDL – Instrument Detection Limit

g – grams

L – liters

LCS – Laboratory Control Sample

LCS Duplicate (LCSD)– Laboratory Control Sample Duplicate

LIMS System – Laboratory Information Management System

Linear Range – The highest concentration where the measured value is within 10% of the actual prepared value of the standard**.**

LLQ – Lower limit of quantification

Low Level Calibration check Standard (CRL) – Check standard at the Reporting Limit

MDL – Method Detection Limit

mL – milliliters

MS/MSD – Sample Fortified with a known Concentration

OSHA – Occupational Safety and Health Agency

P&A – Precision and Accuracy

pH – potential of Hydrogen

ppm – parts per million

RL - Reporting Limit

SRM – Standard Reference Material

SRM Duplicate – Standard Reference Material Duplicate

TALS- Test America Laboratory System (LIMS)

µm – micrometer

TABLES

TABLE 1
Routine Quality Control Sample Acceptance Limits

Initial QC/ICV/QCS	Must be within 10% of true value.	If this fails, it is run again. If it fails again, the instrument is re-calibrated.
CCV/IPC	Must be within 10% of true value.	If this fails, it is run again. If it fails again, the instrument is re-calibrated. Any samples that were run after the last good CCV must be rerun.
CRI	Must be within 20% of true value	If this fails, it is run again. If it fails again, the instrument is re-calibrated. Any samples that were run after the last good CRI must be rerun.
ICSA/AB	Must be within 20% of the known value at the beginning, the end of a run, and every 8 hours.	If this fails, it is run again. If it fails again, the interference corrections must be re-evaluated. Samples may be run but those with high interfering concentrations are suspect and must be diluted.
LCS/Fortified blank/SRM	LCS: Must be within 15%. SRM: Must be within vendor limits	Rerun the QC sample again. If this fails and the CCV passes, there must have been a problem with the digestion and the samples from the batch should be re-digested.
MS/MSD	Must be within 25%.	Rerun the QC sample again. If this fails and the LCS and CCV pass then matrix interference is suspected. The sample can be re-digested, the method of standard additions can be used, or a post digestion spike can be used to verify matrix interference.
PDS	Must be within 20%	Rerun the QC sample again. If it fails again and MS/MSD and PS are <30% recovery then perform a dilution test to confirm matrix effects.

TABLE 2
Working Standard Solution Preparation

Standard ID	Source	mL to add	Final Volume (mL) 2% HNO_3, 5% HCl for Aq samples; 10% HNO_3, 5% HCl for soils
Cal Std CRL	Spectrum CRL-AQ 30-el low std (High Purity custom blend SM-150-065 solution A)	1.0	1000
	Spectrum CRL-AQ 30-el low std (High Purity custom blend SM-150-065 solution B)	1.0	
Cal Std3	Cal Std4	100	1000
Cal Std4	Cal Std6	100	1000
Cal Std5	Cal Std6	250	500
Cal Std6	Single Element Stock Stds: Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn (High Purity)	10 of each individual 1000 ppm stock std. (or 1.0 of each individual 10,000 ppm stock std.)	1000
Cal Std7	Single Element Stock Stds: Al, Ba, Ca, Cr, Cu, Fe, K, Li, Mg, Na, P, Pb, and Si. (High Purity)	25 of each individual 1000 ppm stock std. (or 2.5 of each individual 10,000 ppm stock std.)	500
Cal Std8	Single Element Stock Stds: Al, Ca, Fe, K, Mg, Na, and Pb	5 of each individual 10,000 ppm stock std.	500
Cal Std9	Single Element Stock Stds: Al, Ca, Fe, K, and Na	25 of each individual 10,000 ppm stock std.	500
CCV	CCV Stock Solution A (High Purity custom blend SM-150-077 Solution A)	25	1000
	CCV Stock Solution B (High Purity custom blend SM-150-077 Solution B)	25	

IFA	CLP Interference Check Stock Std #1 (High Purity)	50	1000

TABLE 2, *continued*
Working Standard Solution Preparation

Standard ID	Source	mL to add	Final Volume (mL) 2% HNO_3, 5% HCl for Aq samples; 10% HNO_3, 5% HCl for soils
IFB	CLP Interference Check Std. #1 (High Purity)	50	1000
	CLP Analyte Std. B (High Purity custom blend)	5.0	
	Single Element Stock Stds: As and Tl	0.45 of each 1000 ppm stock std.	
ICV	QC Std. #1 (AccuStandard)	20	1000
	QC Std. #2 (AccuStandard)	20	
	1000ppm stock S std. (AccuStandard)	2	
AQ CRI	Spectrum CRL-AQ 30-el low std (High Purity custom blend SM-150-065 solution A)	1.0	1000
	Spectrum CRL-AQ 30-el low std (High Purity custom blend SM-150-065 solution B)	1.0	
Soil CRI	Soil CRL solution A (High Purity custome blend SM-150-066 Solution A)	1.0	1000
	Soil CRL solution B (High Purity custome blend SM-150-066 Solution B)	1.0	

Internal Standard for iCAP	10,000 ppm Y Stock Std. (High Purity)	0.40	1000
	10,000 ppm In Stock Std. (High Purity)	4	

TABLE 2, *continued*
Working Standard Solution Preparation

Standard ID	Source	mL to add	Final Volume (mL) 5% HNO_3
Metals ICP Spike Solution	QC Std. #1 (AccuStandard)	500	2000
	QC Std. #2 (AccuStandard)	500	
	1000 ppm Stock S Standard (AccuStandard Secondary Source)	50	
	10,000 ppm Stock Ca Standard (AccuStandard Secondary Source)	20	
	10,000 ppm Stock Si Standard (AccuStandard Secondary Source)	25	
	10,000 ppm Stock Na Standard (AccuStandard Secondary Source)	20	
	1000 ppm Stock Ag Standard (AccuStandard Secondary Source)	25	

TABLE 3 Instrument Maintenance Schedule	
Minimum Frequency	**Maintenance Function**
Daily	Change peristaltic pump tubing.
	Check/Clean the periscope viewing window or optic sleeve (iCAP)
Weekly	Clean the torch and injector tip.
	Clean the spray chamber and elbow (iCAP)
	Clean the nebulizer.
Monthly	Check the peak alignment for drift; Perform mapping or Auto Peak on the instrument (iCAP)
	Check the POP optical window; clean as needed (iCAP)

TABLE 4 Trouble Shooting	
Instrument not igniting	Check that the power is on
	Check the instrument status window for which interlock is disengaged and correct the problem.
	Check that the torch and injector tip is dry.
	Call tech support if above are all okay. The RF generator or power tube may be bad.
Low intensity	Check that the sample cup has sufficient sample volume.
	Check that the autosampler is functioning properly.
	Check for clogs in any of the tubing and mixing T
	Perform the daily, weekly, and/or the monthly maintenance. Call tech support if this does not restore the intensity.
Increased instrument noise	Check that the tension on the pump tubing is adjusted correctly.
	Perform the daily, weekly, and/or the monthly maintenance. Call tech support if this does not decrease instrument noise.

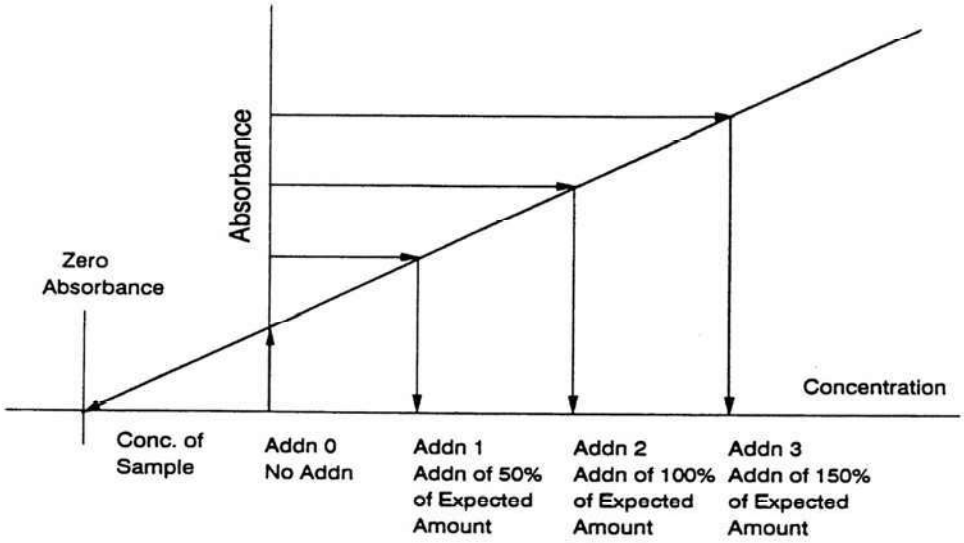
TABLE 5
Internal Standard Reference

Indium	Yttrium 224.3	Yttrium 360.0	Yttrium 371.0
Tl	As, B, Cd, Co, Mo, Ni, P, Pb, S, Sb, Se, Si, Sn, Zn	Ag, Al, Be, Cr, Cu, Mn, Ti, V	Al, Ba, Ca, Fe, Li, K, Mg, Na, Sr

ATTACHMENT 1

FIGURE 1

STANDARD ADDITION PLOT



eurofins	Always check on-line for validity. **Sample Preparation for Metals Determination**	Level: **Standard Operating Procedure**
Document number: **NE-WC-MPREP-SOP49304**		
Old Reference: **30.002**		
Version: **4**		Organisation level: **4-Business Unit**
Approved by: **HFO2, SBB9, YBF9** Effective Date: **14-JUN-2024**	Document users: **EENE_Metals**	Responsible: **EENE_QA**

1) Scope and Application

1.1. This SOP describes the procedures for extracting metals, except for Mercury, from aqueous and non-aqueous matrices for analysis via ICP or ICP-MS. For Mercury extraction, refer to the most current revision of the SOP for Mercury Sample Preparation, *NE-WC-MPREP-SOP79306*.

1.1.1. The procedures provided reference methods EPA 200.7 and 200.8, SW846-3005A, 3010A, and 3050B.

1.1.2. The following metals may be analyzed by EPA 200.7 and SW846-6010 (analyzed via ICP-AES):

Aluminum
Antimony
Arsenic
Beryllium
Barium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silicon
Silver
Sodium
Sulfur
Strontium
Thallium

Iron	Tin
Lead	Titanium
Lithium	Vanadium
Magnesium	Zinc
Manganese	

Silica, Calcium Hardness and Hardness by calculation

1.1.3.The following metals may be analyzed by EPA 200.8 (analyzed via ICP-MS):

Aluminum	Lead
Antimony	Manganese
Arsenic	Molybdenum
Barium	Nickel
Beryllium	Selenium
Cadmium	Silver
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc

1.1.4.The following metals may be analyzed by SW846-6020 (analyzed via ICP-MS):

Antimony	Manganese
Arsenic	Molybdenum
Barium	Nickel
Beryllium	Selenium
Cadmium	Silver
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc
Lead	

2) Summary of Method

2.1. These procedures provide the conditions for the detection of ppb levels of certain metals, as listed above.

2.2. A sample of known volume (50 mL) or known weight (1 g) is digested using nitric and hydrochloric acids. For non-aqueous samples, hydrogen peroxide is also used.

2.3. The digestate is diluted to a known final volume with DI water.

2.4. The digestates are analyzed for metals by inductively coupled plasma spectrometry (ICP) or inductively coupled plasma-mass spectrometry (ICP-MS).

3) Definitions

BLK – Method Reagent Blank

COA – Certificate of Analysis

CT RSR – State of Connecticut's Department of Environmental Protection's Recommended Reasonable Confidence Protocols

DI – de-ionized

Duplicate (DUP) – Sample Duplicate/Matrix Duplicate

EETNE- Eurofins Environment Testing New England

g – Gram

HCl – Hydrochloric acid

HNO_3 – Nitric acid

ICP – Inductively Coupled Plasma

ICP-MS – Inductively Coupled Plasma Mass Spectrometry

L – Liter

LCS/BS/BSD – Laboratory Control Standard/(Method) Blank Spike/Blank Spike Duplicate

LIMS System – Laboratory Information Management System

MA CAM - Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup's Compendium of Analytical Methods

MDL – Method Detection Limit

mL – milliliters

MS/MSD – Sample Fortified with a known Concentration (Matrix Spike)

NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

NELAC - National Environmental Laboratory Accreditation Conference

NIST- National Institute of Standards and Technology

NTU - Nephelometric Turbidity Units

OSHA – Occupational Safety and Health Agency

P&A – Precision and Accuracy

pH – potential of Hydrogen

ppb – parts per billion

ppm – parts per million

PDS – Post-Digestion Spike

QA – Quality Assurance

RL – Reporting Limit

SOP – Standard Operating Procedure

SRM – Standard Reference Material

SRM Duplicate – Standard Reference Material Duplicate

TALS –Laboratory Information Management System (LIMS)

Temperature Blank - A beaker containing the appropriate acid mixes and water used to monitor the sample digestion temperature

µL – microliter

µm – micrometer

°C – Degrees Celsius

4) Interferences

4.1. Method interference may be caused by contaminates in other reagents and glassware. Therefore, to further prevent cross contamination of samples, all these materials must be routinely checked by running a laboratory blank which has been digested under the conditions of the analysis.

4.2. High concentrations of any metals can cause memory effects. Therefore, all non-disposable labware used should be thoroughly acid-rinsed to remove any existing contamination.

4.3. Matrix interference by co-extracted materials can pose a problem in determination of metal concentrations. Periodic matrix spikes can help determine if this is indeed the case.

5) Safety

Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-

SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.1. The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Hydrochloric Acid	Corrosive Poison	5 ppm-Ceiling	Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death. Can cause redness, pain, and severe skin burns. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Nitric Acid	Corrosive Oxidizer Poison	2 ppm-TWA 4 ppm-STEL	Nitric acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison. Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract. Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.2. All chemicals should be transported on a cart when moved from room to room.

5.3. All analytical operations, such as digestions, must be performed under a hood expressly designed for acid use.

5.4. Safety glasses, gloves and protective clothing must be worn when preparing standards and digesting samples.

5.5. The analyst must wear safety glasses and take extra care when opening the gas cylinders or checking for leaks in the gas lines.

5.6. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the hood and chemical cabinets.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. Analytical balance capable of accurately weighing 0.0001g.

6.2. Volumetric glassware, Class A, various sizes.

6.3. Class "A" Volumetric pipettes or calibrated multi-channel pipetters.

6.4. Hot plates.

6.5. Plastic wash bottles.

6.6. Watch glasses = ribbed and plain.

6.7. Beakers = 250 mL Griffin.

6.8. Muffled metal spatula.

6.9. Metal Scoopula.

6.10. Filter paper = 0.45 µm pore diameter membrane filter and acid washed Whatman 41 (or equivalent).

6.11. Funnels = plastic.

6.12. Filter flasks = 1 L.

6.13. Filtering funnel assembly = 300 mL.

6.14. Vacuum pump.

6.15. HotBlock Digestion Apparatus.

6.16. Plastic digestion vessels, with caps, for HotBlock = 50 mL, certified metals free and volume certified.

6.17. Plastic reflux caps for plastic digestion vessels.

6.18. Plastic watch glasses for plastic digestion vessels.

6.19. Filtermate and plunger, certified metals free.

6.20. Thermometers and thermocouples capable of measuring to 110°C.

6.21. Plastic weighing boat.

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Hydrochloric acid (HCl): Trace Metal grade.

7.2. Nitric acid (HNO_3): Trace Metal grade.

7.3. Reagent water: deionized water of sufficient quality to ensure all target analytes are below RL.

7.4. Hydrogen Peroxide H_2O_2: 30% ACS grade.

7.5. Metals Spiking solution: Prepared from various secondary standards as listed in Table 1. All prepared working standards and reagents must be logged into TALS with all pertinent information including solvent (acid) lot numbers. The spiking solution must be entered into TALS.

7.6. Standard Reference Material (SRM): solid matrix quality control standard purchased from a vendor (ERA or equivalent) with stated vendor limits. This SRM must be entered into TALS using vendor limits.

7.7. Notes:

7.7.1. All newly received standards and reagents from the vendors must be logged into TALS. This COA must be scanned and added to TALS as a document attachment on the reagent. If the COA was not included in the shipment, then the vendor must be contacted to obtain the COA.

7.7.2. The standards and reagents must be properly labeled with the TALS ID, received date, expiration date, and opened/prepared date with the preparer's initials, if made in-house.

7.7.3. Check all reagents and standards for expiration date prior to use.

8) Sample Collection, Preservation, Shipment and Storage

8.1. Sample containers must be pre-washed with detergents, acids, and DI water. Glass and plastic are both acceptable.

8.2. For determination of dissolved elements in water samples, the sample must be filtered with a 0.45 µm pore membrane filter paper at the time of collection and acidified with concentrated nitric acid immediately to a pH < 2. The filtration and preservation can also be done in the laboratory. This must be done within 24 hours of the sampling time. To lab filter, rinse the filter paper and apparatus with DI water to begin. Filter approximately 250mL of unpreserved sample through the vacuum filtration set up.

If samples have heavy sedimentation, this can be filtered in increments, replacing the filter paper every 50-100 mL as needed. A lab filter blank of DI water is filtered each day that lab filtrations are done. Once filtration is complete, samples are preserved with nitric acid at a ratio of 1% of the final sample volume. Document filtration in TALS in a filtration ME batch, and label the lab filter samples with output labels from this batch. These samples can be analyzed via direct aspiration except for samples requiring silver, which must be digested.

8.3. For the determination of total recoverable elements in aqueous samples, acidify with conc. nitric acid at the time of collection to a pH < 2. The sample should not be filtered prior to analysis. For metals tests, an aqueous sample may be collected and shipped without acid preservation. However, acid must be added at least 24 hours (16 hours for drinking water samples) before analysis to dissolve any metals that adsorb to the container walls. Check the pH again immediately prior to analysis. If the pH is >2, then re-acidify the sample and recheck the pH again after 24 hours. Record this information in the batch information. If properly acid preserved, the sample can be held up to six months before analysis.

8.4. Solid samples require no preservation but should be stored between 0°C-6°C. The sample can be held up to six months if properly stored between 0°C-6°C.

8.5. Samples must be properly homogenized prior to measuring an aliquot for analysis.

8.5.1. For aqueous samples and watery product-solid samples, invert the sample container several times to ensure that any solids that are present in the container are evenly distributed throughout the sample. Make sure that there are no solids adhering to the bottom of the container. If the container builds pressure during the inversions, gently vent the container in the hood before continuing. If multiple aliquots of the sample are needed, then cap the container and invert the container several times in-between decanting the separate aliquots.

8.5.2. For soil samples, mix the contents of the sample jar by stirring several times with a clean spatula. Make sure that clumps are mashed and incorporated throughout the sample. All elements of the sample, i.e. vegetation, non-soil particles etc. must be evenly distributed throughout the sample.

8.5.3. For clay samples, take a core of the sample using a scoopula. Mix the core sample well on a weighing boat or other clean vessel. Make sure that the multiple layers of clay (often with different colors), if present, are evenly distributed throughout the mixed core sample.

9) Quality Control

Table 1 – QC Requirements

Quality Controls	Frequency
Method Blank (MB)	With every batch of 20 or less
Laboratory Control Sample (LCS)	With every batch of 20 or less
Laboratory Control Sample - Soluble (LCSS) - For solid matrix batches only[1]	1/20 samples

Quality Controls	Frequency
Matrix Spike (MS)	1/10 samples (200.7/200.8) 1/20 samples (6010/6020)
Matrix Spike Duplicate (MSD) (run either Duplicate or MSD)	1/10 samples (200.7/200.8) 1/20 samples (6010/6020)

[1]Standard is a prepared soil with known concentrations and ranges. The acceptance criteria are listed in the reagent tab of TALS.

9.1. A batch of samples shall consist of no more than 20 field samples.

9.2. A method blank (MB) is prepared for every batch of samples. Metals-free Teflon boiling chips are used for the non-aqueous method blank sample. The amount of Teflon boiling chips to be used should be equivalent to the weight of the samples in the batch. DI water is used in the aqueous method blank sample. Leachate fluid is used for the leachate method blank sample. The method blank is brought through the entire digestion process. The purpose is to detect any contamination in the reagents or glassware used.

9.3. A Blank Spike/SRM; (LCS) is also run every batch of 20 samples or less. The LCS shall be matrix matched. The Blank Spike is prepared with DI water (and with a clean wipe for wipe batches) or leachate fluid (for leachate samples) that has been fortified with a known concentration of metals. See Section 10.7 for the spiking procedure. For soil, sediment, sludge, paint chip, solid waste, or dust wipe samples an SRM, (LCSSRM) is prepared from a soil with a known concentration. The Blank Spike/ SRM is then brought through the entire digestion process and analyzed. This check determines if there is a technical error in the way the method is being performed.

9.3.1. NOTE: If Sulfur or Phosphorus is needed for a solid sample, an additional LCS is needed in addition to the LCSSRM. This is prepared by adding spike solution to Teflon boiling chips.

9.4. A sample matrix duplicate (DUP) is digested in every batch. This check is used to demonstrate precision.

9.5. Sample Matrix Spikes (MS/MSD):

9.5.1. Metals Analysis by Method 200.7 and 200.8: On one of every ten samples, a sample matrix spike is performed. A known amount of metals is added to an aliquot of sample.

9.5.2. Metals Analysis by Method 6010 and 6020: For each batch of samples, a sample matrix spike and a sample matrix spike duplicate are performed. A known amount of metals is added to separate aliquots of sample.

9.5.3. See Section 10.7 for the spiking procedure.

9.5.3.1. Using the ICP Spike Solution, for both 6010 and 200.7, use 4mL of standard in MS, MSD, and LCS, if MCP and RCP are asked for, then a spike of 2mL will be used for the LCS. If the randomly chosen quality control sample is MCP or RCP then the MS/MSD will also be spiked at 2mL.

Using the ICP Spike Solution, both 6020 and 200.8, use 0.1 mL of standard in a 50 ml digestion. In the case of MCP or RCP, use 0.05mL (50uL) of standard and follow QC procedure as reference for 6010 and 200.7 for MS/MSD.

9.5.4. For solid batches, the LCSSRM is used and does not get spiked, MS/MSD do get spiked with the same amounts as stated above.

9.6. Additional Client Specific Criteria

9.6.1. Refer to the sample comments on the bench sheet for select clients for which the following will be applicable:

9.6.2. If the only aqueous samples in a sample delivery group (SDG) are identified as aqueous field/trip blanks associated with solid samples, a separate set of DUP, MS, MSD, and serial dilution analyses need not be prepared for the aqueous field/trip blank.

9.6.3. Field and trip blanks must be stored in the same refrigerator as the samples with which the samples are associated, unless they are prepared immediately upon receipt. The field and trip blanks must also be analyzed on the same instrument used to analyze the associated samples.

9.6.4. The source sample for the DUP, MS, and MSD must be identical.

9.7. Control Charts

9.7.1. Control charts are a useful tool when monitoring the quality system within the lab. They are used to monitor trends and detect out of control conditions such as shifts in mean recovery. Corrective actions can include, but are not limited to, replacing a degrading standard or recalibrating an instrument that is showing repeated problem.

9.8. Troubleshooting

9.8.1. For samples that form crystals, or precipitates, during digestion, or react violently with reagents used for digestion, dilute an aliquot of sample by a factor of 5 and repeat the digestion. If the sample still reacts similarly, then dilute another aliquot of sample by a factor of 10 and repeat the digestion. Continue to make larger dilutions of the sample until the digestion procedure can be completed without crystals or precipitates forming. Note the reason why the sample was diluted in TALS via a nonconformance memo.

9.9. Cautions

9.9.1. Be sure to carefully filter samples when necessary to prevent particles getting into the ICP and ICP-MS nebulizers and clogging them.

9.9.2. When digesting samples, do not let the digestion cup or beaker boil or go dry. If this happens, the sample must be re-digested.

9.9.3. Glassware must be carefully washed using the procedure described in the SOP for Labware Cleaning for Trace Metals Analysis, *NE-WC-ICPMS-SOP49302*.

10) Procedure

10.1. Calibrations

10.1.1. The thermometer calibrations must be verified annually against a NIST traceable thermometer. This is performed and recorded by the QA department.

10.1.2. Daily, verify the HotBlock temperature calibration with a temperature blank before use.

10.1.2.1. Place the temperature blank in different well each day.

10.1.2.2. Allow it to come to temperature with the HotBlock.

10.1.2.3. If the HotBlock does not heat to the required temperature of 90-95°C, then adjust the setting on the HotBlock with the buttons on the digital display. Repeat step 10.1.2.2.

10.1.2.4. Record the temperatures in the batch info in TALS.

10.1.7. Quarterly, verify the calibration of the mechanical pipetters by pipetting a known amount of DI water into a weighing vessel on the tared balance. Record the findings in TALS.

10.1.8. Quarterly, verify the calibration of the volumetric dispensers by dispensing a known amount of DI water into a tared weighing vessel on the balance and record the findings in TALS.

10.1.9. Daily, the calibration of the balances must be verified before use. Record the findings in TALS.

10.2. **Aqueous Sample Preparation:**

The pH of the sample immediately prior to digestion must be noted in TALS in the pH column. See Section 8 for further instructions.

10.2.1. **Preparation of Aqueous Samples for Total Metals via 200.7 and 6010:**

10.2.2. **Hot Plate Digestion**

10.2.2.1. Transfer 50 mL of well-mixed sample to an appropriate beaker along with 1 mL of HNO_3 and 2.5 mL of HCl.

Method 200.7 Note: For samples containing more than 1% undissolved solids, bring a well-mixed 20 mL aliquot up to 50 mL with DI water.

10.2.2.2. Along with a temperature blank, place the sample on a hot plate at 80-85^{o}C.

10.2.2.3. Evaporate to approximately 20-40 mL (depending on final volume) being careful that the sample does not boil or go dry and record the digestion temperature on

the bench sheet.

10.2.2.4. For method 200.7, place a watch glass on the beakers and reflux the sample for 30 min. Otherwise, proceed to next step.

10.2.2.5. Allow the sample to cool thoroughly.

10.2.2.6. Transfer sample to a 50 mL digestion vessel. Wash beaker walls and watch glass with DI water.

10.2.2.7. Dilute with DI water to a final volume of 25 mL or 50 mL, depending upon the analysis required for the samples.

10.2.2.7.1. For a final volume of 50 mL, place screw cap on vessel and secure it tightly. Mix sample thoroughly. Uncap vessel and filter with Filtermate, if there is sediment present.

10.2.2.7.2. For a final volume of 25 mL, filter by gravity with the acid washed Whatman 41, or equivalent, filter paper into a new, clean digestion vessel if there is sediment present.

10.2.2.8. Cover with a screw cap.

10.2.3. **HotBlock Digestion**

10.2.3.1. Transfer 50 mL of well-mixed sample to a digestion cup along with 1 mL of HNO_3 and 2.5 mL of HCl.

Method 200.7 Note: For samples containing more than 1% undissolved solids, bring a well-mixed 20 mL aliquot up to 50 mL with DI water.

10.2.3.2. Place sample on a HotBlock.

10.2.3.3. Cover with a ribbed plastic watch glass and reflux until samples have been reduced to approximately 20 mL, being careful that the sample does not go dry. This usually takes approximately 6-7 hours. This process can be performed overnight using a timer.

10.2.3.4. Allow the sample to cool thoroughly.

10.2.3.5. Bring up to a final volume of 25 mL or 50 mL with DI water, depending upon the analysis required for the samples.

10.2.3.5.1. For a final volume of 50 mL, place screw cap on vessel and secure it tightly. Mix sample thoroughly. Uncap vessel and filter with Filtermate if there is sediment present.

10.2.3.5.2. For a final volume of 25 mL, filter by gravity with the acid washed Whatman 41, or equivalent, filter paper into a new, clean digestion vessel if there

is sediment present.

10.2.3.6. Cover with a screw cap.

10.2.4. **Preparation of Aqueous Samples for Total Metals via 200.8 and 6020:**

10.2.5. **Hot Plate Digestion:**

10.2.5.1. Transfer 50 mL of well-mixed sample to a beaker along with 2 mL of HNO_3 and 1 mL of HCl. (If the final volume after complete digestion will be 25 mL, then only add 1mL HNO_3 and 0.5 mL HCl.) Along with the temperature blank, place the sample on the hot plate at 80-85 degrees Celsius.

Method 200.8 NOTE: If the sample contains more than 1% undissolved solids, a well-mixed aliquot containing no more than 1 g of particulate material should be evaporated slowly to near 10 mL and extracted using the soil method below in Section 10.4.

10.2.5.2. Evaporate the sample to approximately 20 mL, being careful that the sample does not boil or go dry. Record the digestion temperature on the bench sheet.

10.2.5.3. Allow the sample to cool thoroughly.

10.2.5.4. Transfer the sample to a 50 ml digestion vessel. Wash beaker walls and watch glass with DI water.

10.2.5.5. Dilute to a final volume of 50 mL or 25 mL with DI water, depending upon the analysis required for the samples.

10.2.5.5.1. For a final volume of 50 mL, place screw cap on vessel and secure it tightly. Mix sample thoroughly. Uncap vessel and filter with Filtermate if there is sediment present.

10.2.5.5.2. For a final volume of 25 mL, filter by gravity with the acid washed Whatman 41, or equivalent, filter paper into a new, clean digestion vessel if there is sediment present.

10.2.5.6. Cover with a screw cap.

10.2.6. **HotBlock Digestion**

10.2.6.1. Transfer 50 mL of well-mixed sample to a digestion vessel along with 2 mL of HNO_3 and 1 mL of HCl. (If the final volume after complete digestion will be 25 mL, then only add 1 mL HNO_3 and 0.5 mL HCl.)

Method 200.8 NOTE: If the sample contains more than 1% undissolved solids, a well-mixed aliquot containing no more than 1 g of particulate material should be evaporated slowly to near 10 mL and extracted using the soil method below in Section 10.4.

10.2.6.2. Place the sample on a Hotblock. Cover with a ribbed plastic watch glass and reflux until the samples have been reduced to approximately 20 mL, being careful that the sample does not go dry. This usually takes approximately 6-7 hours. This process can be performed overnight using a timer.

10.2.6.3. Allow the sample to cool thoroughly.

10.2.6.4. Bring up to a final volume with DI water to either 50 mL or 25 mL, depending upon the analysis required for the samples.

10.2.6.4.1. For a final volume of 50 mL, place screw cap on vessel and secure it tightly. Mix sample thoroughly. Uncap vessel and filter with Filtermate if there is sediment present.

10.2.6.4.2. For a final volume of 25 mL, filter by gravity with the acid washed Whatman 41, or equivalent, filter paper into a new, clean digestion vessel if there is sediment present.

10.2.6.5. Cover with a screw cap

10.2.7. **Preparation of Aqueous Samples for Dissolved Metals via 200.7, 200.8, and 3005/6010**

10.2.7.1. Sample must first be filtered through a 0.45 µm pore diameter membrane filter and preserved to a pH of <2. This may be done in the field or in the lab.

10.2.7.2. Immediately prior to analysis, check the pH of the sample. If the pH of the sample is > 2.0 remove it from the batch and add HNO_3 to pH < 2.0. Let sit for an additional 24 hours. Repeat the pH check before analysis.

10.2.7.3. If a precipitate is formed, the sample must be treated as a total recoverable sample and digested with an initial dilution.

10.2.7.4. The filtered sample that has been properly preserved can be analyzed via direct aspiration unless the sample is being analyzed for silver. If the sample is being analyzed for silver, then the sample must be digested. Refer to 10.2.1 or 10.2.4 for the appropriate method.

10.2.7.5. Pour sample into a digestion vessel and place in the rack of samples to be run.

10.2.7.6. When the sample is to be analyzed for any of the following elements: As, Sb, or Tl or when special RLs are required such as for CT RSR's or MA CAM (Pb), dissolved waters will be concentrated. 10.2.1 or 10.2.4 for the appropriate method.

10.2.8. **Preparation of Drinking Water Samples via 200.7 and 200.8**

10.2.8.1. Sample must first be preserved to a pH of <2; this may be done in the field or in the lab.

10.2.8.2. Each sample must be checked for turbidity.

10.2.8.2.1. The turbidity of the drinking water samples must be written on the bottle after the test (i.e., T<1 or T>1).

10.2.8.2.2. All samples with turbidity < 1.0 NTU can be analyzed via direct aspiration.

10.2.8.2.3. All samples with a turbidity > 1.0 NTU must be digested. Refer to 10.2.1 or 10.2.4 above.

10.2.8.3. All samples being analyzed for silver must also be digested regardless of turbidity. Refer to 10.2.1 or 10.2.4 above for the appropriate method.

10.2.8.4. Immediately prior to analysis, check the pH of the sample. If the pH of the sample is > 2.0 remove it from the batch and add HNO_3 to pH < 2.0. Let sit for an additional 16 hours. Repeat the pH check before analysis.

10.2.8.5. Drinking waters must be analyzed via ICP-OES for sodium, iron, calcium, magnesium, manganese, potassium and silica. All other drinking water I and II metals are analyzed via 200.8.

10.3. TCLP and SPLP Extract Preparation via 3010/6010

10.3.1. Transfer 50 mL (100 mL for samples requiring Sb or Tl) of well-mixed extract to an appropriate beaker along with 3 mL of concentrated HNO_3.

10.3.2. Place sample, along with a temperature blank, on a hot plate at 80-85^{o}C.

10.3.3. Evaporate the sample to a low volume, being careful to avoid boiling, or letting the sample go dry, and record the digestion temperature on the bench sheet. Watch glasses can be used to prevent samples going dry during this step.

10.3.4. Cool the beaker and add another 3 mL of concentrated HNO_3. Cover with a watch glass and reflux, adding acid as needed, until the sample is light in color or the appearance does not change with continued acid and heating. Evaporate the sample to a low volume uncovered, being careful to avoid boiling, or letting the sample go dry.

10.3.5. Cool the beaker and add 2.5 mL HCl. Cover the beaker and reflux for 15 minutes with the sample at 80-85^{o}C. Remove the sample from the heat and let it cool.

10.3.6. Transfer the sample to a digestion vessel. Wash down the beaker walls and watch glass with DI water. Dilute to 50 mL with DI water in a digestion vessel.

10.3.7. Place a screw cap on the vessel and secure tightly. Mix sample thoroughly.

10.3.8. Uncap vessel and filter the sample with a FilterMate and cover with a screw cap.

10.4. Non-Aqueous Sample Preparation- Method 3050B

10.4.1. Mix sample thoroughly and weigh out 1.00-2.00 g in a digestion vessel. For samples with high liquid content, larger sample size may be used as long as digestion is completed.

10.4.2. Add 5 mL conc. HNO_3 and 5 mL DI H_2O. Heat the sample to 90-95^oC on the HotBlock.

10.4.3. Place a reflux cap on top and maintain the temperature at 90-95^oC. Reflux for 15 minutes without vigorous boiling.

10.4.4. Allow the sample to cool. Add 5 mL conc. HNO_3 and reflux for 30 minutes.

10.4.5. Allow the sample to cool. Add 5 mL conc. HNO_3 and reflux for 2 hours to ensure complete oxidation. Ensure that sample does not boil and maintain a covering of solution over the bottom of the vessel.

10.4.6. Remove the vessel from the HotBlock and allow it to cool.

10.4.7. Add 2 mL of DI water and 3 mL of 30% H_2O_2. Return the samples to the HotBlock to start the peroxide reaction. Heat until the effervescence subsides. Cool the vessel.

10.4.8. Continue to add 30% H_2O_2 in 1-mL aliquots with warming until effervescence is minimal or sample appearance is unchanged. Do not add more than 10 mL of 30% H_2O_2.

10.4.9. Allow the sample to evaporate to approximately 5 mL or for two hours without boiling. Be sure to maintain a covering of solution over the bottom of the vessel.

10.4.10. Add 2.5 mL conc. HCl and reflux for 15 minutes.

10.4.11. Allow the sample to cool. Bring the sample to a final volume of 50 mL. Secure a screw cap onto the vessel and mix thoroughly. Allow the sample to settle, preferably overnight.

10.4.12. Uncap vessel and filter the sample with Filtermate, if needed, then cover with screw cap.

10.5. Paint Chip Sample Preparation

10.5.1. Mix the sample thoroughly and weigh out 0.5000 g of the sample into the appropriate digestion vessel.

10.5.2. Follow the guidelines in Section 10.4 (Non-Aqueous Sample Preparation, Method 3050B).

10.6. Dust Wipe Sample Preparation

10.6.1. An entire wipe is used for metals analysis. Another whole wipe is used for mercury analysis.

10.6.2. If there is one wipe given for metals and mercury, then the client must be notified so the client can determine which test should be performed.

10.6.3. Put the wipe to be used for metals determination in an appropriately sized digestion vessel.

10.6.4. Follow the guidelines in Section 10.4 (Non-Aqueous Sample Preparation, Method 3050B). Ensure that the wipe has completely dissolved into the acid before applying heat to the sample to prevent it from bubbling over.

10.7. **Addition of Spike Solution**

10.7.1. For 200.7 and 6010 Analysis:

10.7.2. For the MS/MSD and aqueous LCS add the following amounts of the Metals Spiking Solution (see Table 2):

10.7.2.1. If the digestate is to be brought to a final volume of 25 mL, then add 2.0 mL.

10.7.2.2. If the digestate is to be brought to a final volume of 50 mL, then add 4.0 mL

10.7.3. For 200.8 and 6020 Analysis

10.7.4. For the MS/MSD and aqueous LCS, add the following amounts of the Mass Spec. Spike:

10.7.4.1. If the digestate is to be brought to a final volume of 25 mL, then add 250 µL.

10.7.4.2. If the digestate is to be brought to a final volume of 50 mL, then add 500 µL.

11) Calculations / Data Reduction

11.1. Not Applicable

12) Method Performance

12.1. The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2. Precision & Accuracy (P&A)

Precision & Accuracy (P&A) or Demonstration of Capabilities (DOC) – Prior to the analysis of samples, a Demonstration of Capabilities as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.2.1. P&A (or DOC) is an annual requirement for each analyst and is an ongoing demonstration of their capability. As mentioned above the LOQ can also serve as the P&A, however each analyst performing the method must demonstrate capability on an annual basis. If

an LOQ was not performed by an analyst, then four LCS spikes prepared at least one day apart must be entered into the P&A demonstration of capability form to calculate the P&A recovery within the method limits. For analytical methods that don't have LCS spikes, blind proficiency tests can serve as ongoing capability.

12.3. MDLs

Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP, (*NE-QA-QAS-SOP49199*), must be performed initially and whenever a significant change is made to the analytical system. The MDL must be re-evaluated from quarterly MDL points at least every 12 months.

12.3.1. Eurofins Environment Testing New England performs MDLs on all instruments/ method in support of state and other program requirements such as CAM, RCP, ASP, CLP-like deliverables and specific project quality assurance objectives by carrying out a new study annually or by completion of quarterly limit of detection (LOD) and Limit of Quantitation (LOQ) analysis.

12.3.2. MDL studies are performed in accordance with the revision 2 procedures in 40CFR Part 136, appendix B. Initial MDL studies are performed when a new instrument is installed or undergoes major maintenance. Quarterly data collection is performed thereafter. Please refer to the current SOP for Establishment and Reporting of Detection Limits for details.

12.5. LOD

12.5.1. Limit of Detection (LOD) is defined as an estimate of the minimum amount that an analytical process can reliably detect. Prior to use, MDL values are verified quarterly by preparing an LOD at a concentration 2-3 times the MDL The LOD is acceptable if it produces a peak at least 3 times above the instrument's noise level. If a response is not acceptable or detected, the concentration of the failing analyte shall be increased until an acceptable response is observed, however, it should not exceed the reporting limit. LODs are analyte, matrix, extraction method, and instrument configuration specific. The LODs are logged in by QA on an annual basis. LOD will replace the annual MDL study except where specified by the method or program that reoccurring MDL study is required.

12.6. LOQ

12.6.1. Limit of Quantitation (LOQ) is defined as the minimum concentration of an analyte/compound that can be reported with a specified degree of confidence or the lowest concentration that produces a quantitative result within specified limits of precision and bias. LOQ is set at or above the concentration of the lowest initial calibration standard. EETNE defines the LOQ = RL. The LOQs are analyzed once per analysis, matrix and extraction method. The LOQ may also serve as ongoing demonstration of capability of analyst. A minimum of four consecutive replicates are analyzed at a concentration of the lowest initial calibration standard on an annual basis; however, LOQ may be analyzed as high as 2 times the reporting limit.

12.7. See the most recent revision of the SOP for Establishment and Reporting of Detection Limits, NE-QA-QAS-SOP49199.

13) Pollution Control

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687).

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution).

13.3. Never dispose of samples, reagents, chemicals, or waste waters by pouring them down the sink. Always use designated waste containers for disposal.

13.4. Plan accordingly to limit waste accumulation. Make only the amount of reagent that can be used before the expiration date. Do not make in excess.

13.5. Clients should provide a sufficient amount of the sample for the requested analysis. Excess amounts of the sample result in increased disposal fees for the laboratory.

14) Waste Management

14.1. Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to *NDSC-US-EHS-QP46060*. The following waste streams are produced when this method is carried out.

EETNE is dedicated to implementing ways to efficiently utilize resources along with complying with all environmental laws and regulations in order to reduce the accumulation of waste as defined in EETNE's Chemical Hygiene Plan. All questions and/or problems should be referred to the Health and Safety Manager.

14.2. Aqueous Waters

14.2.1. All solvent contaminated water must be collected in lab satellite-containers then transferred to a waste drum in the hazardous waste staging area where they are monitored and ultimately disposed of by a hazardous waste disposal facility.

14.2.2. All non-solvent contaminated aqueous wastes (including preserved water, digestates, instrument effluents, and corrosive aqueous wastes) are accumulated in lab satellite-containers and transferred to a drum in the hazardous waste staging area where they will be disposed by a licensed hazardous waste facility.

14.2.3. COD (chemical oxygen demand) vials are disposed in a designated drum.

14.3. Solids:

14.3.1. Expired soil samples in the storage area are emptied into a drum and a sample is collected. The method of disposal will be determined by the findings of the sample profile.

14.3.2. Expired PCB (polychlorinated biphenyls) containing samples (marked with yellow tape) are segregated and collected in the waste staging area and packed for disposal by a licensed hazardous waste facility.

14.3.4. Objects containing high levels of mercury (samples, broken thermometers, etc.) are segregated and collected in the waste staging area and packed for disposal by a hazardous waste facility.

14.4. Sludge, Tars, Oils:

14.4.1. These samples are accumulated in the waste staging area and packed for disposal by a hazardous waste facility/transporter.

14.4.2. Highly contaminated objects (reagents, chemicals, vials, samples) are segregated and collected by each dept. to avoid mixing of incompatible materials. The samples are then collected, and packed periodically throughout the year by hazardous waste disposal facilities.

15) References

15.1. Potable Method 200.7, Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry. EMMC Version, Revision 4.4, May, 1994, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

15.2. Method 200.8, Determination of Trace Elements in Water and Wastes by Inductively Coupled Plasma-Mass Spectrometry, EMMC Version, Revision 5.4, May, 1994, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

15.3. Method 3005, Acid Digestion of Waters for Total Recoverable or Dissolved Metals for Analysis by FLAA or ICP Spectroscopy. Revision 1, December, 1987, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

15.4. Method 3010A, Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy. Revision 1, December, 1987, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

15.5. Method 3050B, Acid Digestion of Sediments, Sludges and Soils. Revision 2, December, 1996, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

16) Method Modifications

None

17) Attachments

17.1 Table 1 - Working Standard Preparation

18) Revision History

11/13/19 Rev. 0- SOP created

3/9/20 Rev. 1:
Added criteria for Sb and Tl leachates to XI.4.B.1
Combined XI.4.C.2.1.5 and XI.4.C.2.1.6
Removed autoblock digestion method

4/6/20 Rev. 2:
Section I.B- Specified which analyses were run by ICP-AES and ICP-MS.
Section VIII.D- Specified ACS grade for hydrogen peroxide.
Updated hotplate and hotblock temperature requirement to 80-85◦C throughout document
Section XI.C- updated subsections from letter groups to numbers for format consistency.
Section XI.C.2- Clarified SOP section to reference
Section XI.C.4.4- Clarified SOP section to reference
Section XVI.C- Added statement to matrix match LCS, and included solid waste.
Section XX- Removed reference to SM2340B

9/3/21 Rev. 3:
Replaced references to Element to TALS throughout document.
Section VIII: Included instructions on where to save COAs within TALS
Section IX: Included temperature ranges dependent on if samples are covered during digestion.
Section IX: Updated balance, pipette, and dispenser checks to be recorded in TALS instead of in logbooks.
Section X.B. Expanded on lab filtration instruction.
Section X.C: Added (16 hours for drinking waters) to pH check wait time.
Section XV.B- Changed reagent header tracking to TALS instructions.

Changes to current revision:
Entire SOP: Updated to new Eurofins Format; Removed the following Sections as they have either been incorporated into other Sections of the SOP or covered under other SOPs-Cautions, Calibration, Troubleshooting, Computer Hardware and Software, Data Management and Records, MDL/LOD/LOQ/P&A; changed 4°C to 0-6°C.
Section 2: Removed 100mL volume from summary, not used.
Section 5: Changed name from Health and Safety to Safety and updated text.
Section 6: Changed name from Apparatus and Materials to Equipment and Supplies; Removed Teflon apparatus, Autoblock, and graduated cylinders, adjusted volumes of glassware used; Updated text.
Section 7: Removed Analytical West Spiking Solution; Updated text.
Section 8: Added holding time for metals filtration.

Section 9: Added Table 1 - QC Requirements; Changed "filter each sample" to "filter samples when necessary"; Note added for solid LCS for samples requiring Sulfur or Phosphorus; Sample Post digestion spike section removed, only applicable in analytical SOP; Added amounts for MS/MSD for all pertaining methods.
Section 10: Changed logbook recording to TALS for temperatures; changed graduated cylinder for dispensers to tared weigh boat.
Section 10: Changed reflux cap to plastic watch glass for aqueous digestion; Removed aliquot step for direct aspiration samples; Changed weight from 1.00g ±.10 g to 1.00-2.00g for solid digestions; Added higher volume may be used for high moisture content samples; Spike volumes adjusted; PS spiking reference removed.
Section 12: Added new Section (Method Performance)
Section 13: Changed name from Pollution Prevention to Pollution Control and updated text.
Section 14: Updated text.
Section 19: Table 2 - Updated volumes; Removed Si Standard.

19) Appendix

Table 2 – Working Standard Solution Preparation

Standard ID	Source	mL to add	Final Volume (mL) 5% HNO_3
Metals ICP/ICP-MS Spike Solution	QC Std. #1 (AccuStandard)	25	100
	QC Std. #2 (AccuStandard)	25	
	10000 ppm Stock S Standard (AccuStandard Secondary Source)	1	
	10,000 ppm Stock Ca Standard (AccuStandard Secondary Source)	.5	
	10,000 ppm Stock Na Standard (AccuStandard Secondary Source)	.5	
	1000 ppm Stock Ag Standard (AccuStandard Secondary Source)	1.25	

NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits
NE-WC-ICPMS-SOP49302 Labware Cleaning for Trace Metals
NE-WC-MPREP-SOP49306 Mercury Sample Digestion by EPA 245.1, SW846 7470A and 7471B

End of document

Version history

Version	Approval	Revision information	
3	20.SEP.2022	D4 Template for Analytical SOPs -	
4	14.JUN.2024		

eurofins	Always check on-line for validity. **Mercury Sample Digestion by EPA 245.1, SW846 7470A and 7471B**	Level: **Standard Operating Procedure**
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The attached document was previously approved by the Eurofins Environment Testing QA through TANet or Sharepoint. The document is added here for access to those laboratories using D4.

1.0) Scope and Application

Attachment:
1, Mercury Sample Digestion by EPA 245.1, SW846 7470A and 7471B (.pdf)

End of document

Version history

Version	Approval	Revision information	
2	20.SEP.2022	D4 Template for Analytical SOPs -	

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Standard Operating Procedures
For
Mercury Sample Preparation
By
EPA 245.1 EMMC Version, Revision 3.0/
SW 846 7470A and 7471B

Prepared by: 01/31/2022

Reviewed by: _____

Laboratory Director
Signature Signifies
Effective Date: Mark Bruce 01/31/2022

TABLE OF CONTENTS
STANDARD OPERATING PROCEDURES
FOR
Mercury Sample Preparation
By
EPA 245.1 EMMC Version, Revision 3.0/
SW 846 7470A and 7471B

I. METHOD SCOPE AND APPLICATION

A. This SOP describes the procedure for extracting mercury from soil and water matrices for analysis by cold vapor atomic absorption.

B. This method can be used for determining mercury in drinking waters, wastewaters, ground and surface waters, soils, sediments, sludge and wipes.

II. METHOD SUMMARY

A. This method provides the conditions for the detection of ppb levels of mercury by cold-vapor atomic absorption.

B. Samples are digested with concentrated acids and heated to break down the mercury compounds that may be present.

C. The digestate is then pumped through the mercury analyzer to determine the precise amount of mercury that is in the sample based on the absorbance of radiation at 253.7 nm by mercury vapor.

III. DEFINITIONS

°C	=	degrees Celsius
COA	=	Certificate of Analysis
EETNE	=	Eurofins Environment Testing New England
DI	=	de-ionized
g	=	grams
L	=	liter
LCS	=	Laboratory Control Sample
MDL	=	Method Detection Limit
mL	=	milliliters
OSHA	=	Occupational Safety and Health Agency
pH	=	potential of Hydrogen
ppb	=	Parts per billion
ppm	=	Parts per million
SRM	=	Standard Reference Material
TALS	=	the Laboratory Information System utilized

IV. HEALTH AND SAFTEY

To maintain the application of OSHA regulations regarding the safe handling of the chemicals specified in this method, the laboratory must follow proper safety procedures:

A. All chemical solvents should be transported on a cart when moved from room to room.

B. All analytical operations, such as digestions, must be performed under a hood expressly designed for acid use.

C. Safety glasses, gloves and protective clothing must be worn when preparing standards and digesting samples.

D. The analyst must wear safety glasses and take extra care when opening the gas cylinders or checking for leaks in the gas lines. (See EETNE's chemical hygiene plan on using compressed gas cylinders.)

E. The analyst must dispose of all unwanted chemicals and acids in properly marked waste containers. (See EETNE's waste disposal plan.)

V. INTERFERENCES

A. Potassium permanganate is added to eliminate possible sulfide interferences.

B. Some samples such as seawater and brine may require additional permanganate. This is due to the increased presence of chlorides which, when converted to free chlorine, absorb at the same wavelength, 253.7 nm. These samples may also need more of the hydroxylamine sulfate reagent to ensure that none of the free chlorine is present in the absorption cell.

VI. APPARATUS AND MATERIALS

A. Analytical balance capable of accurately weighing 0.0001 g.

B. Pipettes: all sizes needed.

C. Weighing paper.

D. Muffled metal spatula and scoopula.

E. Graduated cylinders, Class A

F. Transfer pipettes: medium size with wide tip.

G. Hot Block by Environmental Express

H. Plastic digestion vials for Hot Block, certified Metals Free

VII. REAGENTS AND STANDARDS

A. Purchased

1. Hydrochloric acid (HCl): TraceMetal grade.

2. Nitric acid (HNO_3): TraceMetal grade.

3. Sulfuric acid (H_2SO_4): TraceMetal grade.

4. Reagent water: deionized water of sufficient quality to assure all targets are below the RL.

5. Stannous chloride ($SnCl_2$)

6. Sodium chloride (NaCl)

7. Hydroxylamine sulfate ($(NH_2OH)_2H_2SO_4$)

8. Potassium permanganate ($KMnO_4$)

9. Potassium persulfate ($K_2S_2O_8$)

10. Various primary and secondary standards as listed in Table 1.

11. Standard Reference Material (SRM): solid matrix quality control standard purchased from a vendor with stated vendor limits.

NOTES:

- All newly received standards and reagents from the vendors must be logged into TALS. The COA must be scanned and added to TALS on the Docs window on the Reagents screen for the appropriate standard. If the COA is not supplied with the standard, then the vendor must be contacted to obtain a copy of the COA.

- Check all reagents and standards for expiration date prior to use.

B. Made In-House

1. Stannous Chloride solution: Mix 50 g Stannous Chloride and 50 mL of concentrated hydrochloric acid into 500 mL final volume of DI water. (10% solution) This solution must be prepared fresh daily. This is based on the recommendation of the manufacturer of the instrument.

2. Potassium permanganate solution: Mix 5 g potassium permanganate into 100 mL final volume of DI water. (5% solution)

3. Sodium chloride-hydroxylamine sulfate solution: Mix 120 g of sodium chloride and 120 g of hydroxylamine sulfate into 1 L final volume of DI water.

4. Potassium persulfate solution: Mix 5 g potassium persulfate into 100 mL final volume of DI water. This will need to be stirred and/or heated to get complete dissolution. (5% solution)

5. Aqua Regia: 1 part concentrated HNO3 to 3 parts concentrated HCl. This must be prepared fresh immediately before use. See Table 2 to determine the minimum amount needed for sample preparation according to batch size and volumes of HNO_3 and HCl needed for aqua regia preparation.

VIII. STANDARD PREPARATION

See Table 1.

IX. CALIBRATION

A. The thermometer calibrations must be verified annually against a NIST traceable thermometer. This is performed and recorded by the QA department.

B. Daily, verify the HotBlock temperature calibration with a temperature blank before use:

1. Place the temperature blank in different well each day.

2. Allow it to come to temperature with the HotBlock.

3. If the HotBlock does not heat to the required temperature of 90-95°C , then adjust the setting on the HotBlock with the buttons on the digital display. Repeat step B.2.

4. Record the findings and any adjustments needed in the appropriate logbook.

C. Quarterly, verify the calibration of the mechanical pipetters by pipetting a known amount of DI water into a weighing vessel on the tared balance and record the findings in the Pipetter log book.

D. Quarterly, verify the calibration of the volumetric dispensers by dispensing a known amount into a class A graduated cylinder and record the findings in the logbook.

E. Daily, the calibration of the balances must be verified before use.

F. Instrument Calibration

1. Obtain a commercially prepared mercury standard (100 or 1,000 ppm). Store this in a plastic or Teflon bottle away from other samples and standards.

2. Prepare a blank, six concentrations of mercury (0.2, 0.5, 1, 2, 5, 10 and 20 ppb), and the ICV (5ppb), see Table 1. These need to be prepared the day of their use due to their small concentrations.

3. Process the standards through the entire digestion procedure as outlined in section XI. B. For each 50 mL of standard, add the following amounts of reagents:
   - 2.5 mL H_2SO_4
   - 1.25 mL HNO_3
   - 4 mL $K_2S_2O_8$
   - 7.5 mL $KMnO_4$
   - 3 mL NaCl-$(NH_2OH)_2H_2SO_4$

4. Add the calibration standards as reagents in TALS

5. Refer to the latest revision of the SOP for Mercury by EPA 245.1 EMMC Version, Revision 3.0/ SW 846 7470A and 7471B for calibration of instrument.

X. SAMPLE COLLECTION, PRESERVATION AND STORAGE

A. Sample containers must be pre-washed with detergents, acids, and DI water. Glass and plastic are both acceptable.

B. For the determination of total recoverable elements in aqueous samples, acidify with conc. nitric acid at the time of collection to a pH < 2. (Generally, 1mL conc. Nitric acid per 100mL of sample.) The sample should not be filtered prior to analysis. For metals tests, an aqueous sample may be collected and shipped without acid preservation. However, acid must be added at least 16 hours (drinking water) or 24 hours (non-potable water) before analysis to dissolve any metals that adsorb to the container walls. Check the pH again immediately prior to analysis. If the pH is >2, then re-acidify the sample and recheck the pH again after 16 hours (drinking water) or 24 hours (non-potable water). Record this on the bench sheet.

C. Soils and sludge need no preservation but should be stored at 4°C.

D. Samples must be properly homogenized prior to measuring an aliquot for analysis.

1. For aqueous samples and watery product-solid samples, invert the sample container several times to ensure that any solids that are present in the container are evenly distributed through out the sample. Make sure that there are no solids adhering to the bottom of the container. If the container builds pressure during the inversions, gently vent the container in the hood before continuing. If multiple aliquots of the sample

are needed, then cap the container and invert the container several times in-between decanting the separate aliquots.

2. For soil samples, mix the contents of the sample jar by stirring several times with a clean spatula. Make sure that clumps are mashed and incorporated throughout the sample. All elements of the sample, i.e. vegetation, non-soil particles etc. must be evenly distributed throughout the sample.

3. For clay samples, take a core of the sample using a scoopula. Mix the core sample well on a weighing boat or other clean vessel. Make sure that the multiple layers of clay (often with different colors), if present, are evenly distributed throughout the mixed core sample.

XI. PROCEDURE - SAMPLE PREPARATION AND ANALYSIS

A. Solids

1. Weigh 0.5- 0.7 g of the well homogenized sample into a digestion vessel.

2. Add 5 mL of DI water and add 5 mL of aqua regia.

3. Heat the vessel for 2 min in the HotBlock at or 90-95°C

4. Remove the vessel from the HotBlock and let it cool. Add 23 mL of DI water and 3 mL of potassium permanganate solution. Be sure that the sample remains purple in color. If the sample does not maintain a purple or brown color, add potassium permanganate crystals to the vessel. Repeat this if necessary. If the sample still does not maintain color for at least 15 minutes, discard and redo using a smaller aliquot and diluting.

5. Place vessel back in the HotBlock for 30 min. Record the time the samples are put in and taken out of the HotBlock on prep bench sheet.

6. Cool and add 1.2 mL of sodium chloride-hydroxylamine sulfate solution and swirl it to reduce the excess permanganate. If color does not disappear then add hydroxylamine sulfate crystals. Repeat if necessary.

7. The sample is now ready for analysis.

B. Waters

The pH of the sample immediately prior to digestion must be noted on the prep bench sheet. See section X, part B for further instructions.

1. Measure 20 mL of well-mixed sample into the digestion vial. Add 0.5 mL of nitric

acid and 1 mL of sulfuric acid and mix thoroughly.

2. Add 3 mL of potassium permanganate solution to each vial and let stand for 15 minutes. If the sample does not maintain a purple or brown color, add potassium permanganate crystals to the vessel. Repeat this if necessary. If the sample still does not maintain color for at least 15 minutes, discard and redo using a smaller aliquot and diluting.

3. Add 1.6 mL of potassium persulfate solution. Place lid on loosely to allow venting.

4. Digest samples for 2 hours in the HotBlock at or 90-95°C . Record the time the samples are put in and taken out of the HotBlock on prep bench sheet.

5. Remove samples and let cool. Add 1.2 mL of sodium chloride-hydroxylamine sulfate solution and swirl. If color does not disappear then add some hydroxylamine sulfate crystals. Repeat if necessary.

6. The sample is now ready for analysis.

XII. DATA ACQUISITION, CALCULATIONS AND DATA REDUCTION

Refer to the latest revision of the SOP for *Mercury Analysis by EPA 245.1 EMMC Version, Revision 3.0/SW 846 7470A and 7471B*

All corrections made in any record or document pertaining to the analytical process **must** be in accordance with the following NELAC requirement: "Entries in records shall not be obliterated by methods such as erasures, overwritten files or markings. All corrections to record-keeping errors shall be made by one line marked through the error. The individual making the correction shall sign (or initial) and date the correction. These criteria also shall apply to electronically maintained records."

XIII. QUALITY ASSURANCE AND QUALITY CONTROL

A. Initial Demonstration of Performance

1. MDL studies are calculated on a yearly basis, when a new operator begins work, or whenever, in the judgment of the analyst, a change in analytical performance caused by either a change in instrument hardware or operating conditions would dictate they be re-determined.

2. A Precision and Accuracy (P&A) study is tabulated once a year for each analyst and when methods change dramatically. Each new analyst must perform a P&A study as part of their training. The analyst must prepare/analyze at least 4 LCS samples separately at least one day apart. The standard deviation is calculated to

give a measure of the precision and accuracy of the analyst and/or method. See Section XIV. Method Detection Limit/ Limit of Detection for more information.

B. Batch QC

1. A Method Blank is prepared for every batch of 20 samples or less. Metals-free Teflon boiling chips are used for the non-aqueous method blank sample. The amount of Teflon boiling chips to be used should be equivalent to the weight of the samples in the batch. DI water is used in the aqueous method blank sample. The method blank is brought through the entire digestion process. The purpose is to detect any contamination in the reagents or glassware used.

2. A Fortified Blank, or Laboratory Control Sample (LCS) is prepared for every batch of 20 samples or less. For aqueous batches, this is DI water that has been fortified with a known concentration of mercury, usually about 5 ppb. For soil/sediment batches a solid matrix SRM of a known concentration is purchased from an outside vendor. The mix is then brought through the entire process and analyzed. The recovery must be within 15% of the calculated value for aqueous fortified blanks. The recovery must be within stated vendor limits for the solid matrix SRM. This check determines if there is a technical error in the way the method is being performed.

3. A matrix sample duplicate is prepared for every batch of 20 samples or less. The acceptable RPD must be within 20% for an aqueous and soil samples.

4. On one of every ten samples, a matrix spike is performed. A known amount of mercury is added to the sample. The % recovery must be within 20% or the data is suspect due to matrix interferences. If the matrix spike recovery is <30%, then all affected samples <RL must be redigested and rerun.

XIV. MDL/LOD/LOQ

1. Eurofins Environment Testing New England performs MDLs on all instruments/ method in support of state and other program requirements such as CAM, RCP, ASP, CLP-like deliverables and specific project quality assurance objectives by carrying out a new study annually or by completion of quarterly limit of detection (LOD) and Limit of Quantitation (LOQ) analysis.

2. MDL studies are performed in accordance with the revision 2 procedures in 40CFR Part 136, appendix B. Initial MDL studies are performed when a new instrument is installed or undergoes major maintenance. Quarterly data collection is performed thereafter. Please refer to the current SOP for Establishment and Reporting of Detection Limits for details.

3. Limit of Detection (LOD) is defined as an estimate of the minimum amount that an analytical process can reliably detect. Prior to use, MDL values are verified quarterly by preparing an LOD at a concentration 2-3 times the MDL The LOD is acceptable if it produces a peak at least 3 times above the instrument's noise level. If a response is not acceptable or detected, the concentration of the failing analyte shall be increased until an acceptable response is observed, however, it should not exceed the reporting limit. LODs are analyte, matrix, extraction method, and instrument configuration specific. The LODs are logged in by QA on an annual basis. LOD will replace the annual MDL study except where specified by the method or program that reoccurring MDL study is required.

4. Limit of Quantitation (LOQ) is defined as the minimum concentration of an analyte/compound that can be reported with a specified degree of confidence or the lowest concentration that produces a quantitative result within specified limits of precision and bias. LOQ is set at or above the concentration of the lowest initial calibration standard. EETNE defines the LOQ = RL. The LOQs are analyzed once per analysis, matrix and extraction method. The LOQ may also serve as ongoing demonstration of capability of analyst. A minimum of four consecutive replicates are analyzed at a concentration of the lowest initial calibration standard on an annual basis; however, LOQ may be analyzed as high as 2 times the reporting limit.

5. Precision and Accuracy (P&A) is an annual requirement for each analyst and is an ongoing demonstration of their capability. As mentioned above the LOQ can also serve as the P&A; however, each analyst performing the method must demonstrate capability on an annual basis. If an LOQ was not performed by an analyst, then four LCS spikes must be entered into the P&A demonstration of capability form to calculate the P&A recovery within the method limits. For analytical methods that don't have LCS spikes, blind proficiency tests can serve as ongoing capability.

See the most recent revision of the SOP for Establishment and Reporting of Detection Limits

XV. METHOD PERFORMANCE

Control charts are a useful tool when monitoring the quality system within the lab. They are used to monitor trends and detect out of control conditions such as shifts in mean recovery. Control charts can be run in TALS on a variety of instrument and batch QCs. The control chart will utilize a minimum of 30 data points and also show standard deviation, the mean, 2S and 3S lower and upper limits for review. Corrective actions can include, but are not limited to, replacing a degrading standard or recalibrating an instrument that is showing repeated problem.

XVI. POLLUTION PREVENTION

A. Never dispose of samples, reagents, chemicals, or waste waters by pouring them down the sink. Always use designated waste containers for disposal.

B. Plan accordingly to limit waste accumulation. Make only the amount of reagent that can be used before the expiration date. Do not make in excess.

C. Clients should provide a sufficient amount of the sample for the requested analysis. Excess amounts of the sample result in increased disposal fees for the laboratory.

XVII. WASTE MANAGEMENT

Eurofins Environment Testing New England is dedicated to implementing ways to efficiently utilize resources along with complying with all environmental laws and regulations in order to reduce the accumulation of waste as defined in Eurofins' Chemical Hygiene Plan. All questions and/or problems should be referred to the Health and Safety Manager.

A. Aqueous Wastes:

1. All solvent contaminated water must be collected in lab satellite-containers then transferred to a waste drum in the hazardous waste staging area where they are monitored and ultimately disposed of by a hazardous waste disposal facility.

2. All non-solvent contaminated aqueous wastes (including preserved water, digestates, instrument effluents, and corrosive aqueous wastes) are accumulated in lab satellite-containers and transferred to a drum in Hazardous Waste staging area #2 where they will be disposed by a licensed hazardous waste facility.

B. Solids:

1. Expired soil samples in the storage area are emptied into a drum and a sample is collected. The method of disposal will be determined by the findings of the sample profile.

2. Objects containing high levels of mercury (samples, broken thermometers, etc.) are segregated and collected in the waste staging area and packed for disposal by a hazardous waste facility.

C. Sludge, Tars, Oils:

These samples are accumulated in the waste staging area and packed for disposal by a hazardous waste facility/transporter.

D. Highly contaminated objects (reagents, chemicals, vials, samples) are segregated and collected by each dept. to avoid mixing of incompatible materials. It is then collected, and packed periodically throughout the year by hazardous waste disposal facilities.

XVIII. REFERENCES

Method 7470A, Mercury in Liquid Waste (Manual Cold-Vapor Technique). Revision 1, September, 1994, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Method 7471B, Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique). Revision 2, February, 2007 U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Method 245.1, Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry (Automated), EMMC Version, Revision 3.0, Issued 1994, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio 45268.

XIX. REVISIONS

- 11/13/19 Revision 0- SOP created
- 4/6/20 Revision 1- Temperature updated from 90-95◦C to 80-85◦C throughout document.
- 1/6/22 Revision 2
  - Replaced Element with TALS throughout document
  - Section XV.- removed reference to previous control chart program
  - Section XX table A- updated reagent initial and final amounts

XX. TABLES

Table 1
Working Standard Solution Preparation

Standard ID	Source	mL to add	Final Volume (mL) 2% HNO_3
ICV (5 ppb)	Soil Spike Solution (500 ppb)	0.200	20
1000 ppb Intermediate Calibration Standard	1000 ppm Hg Stock Std. (High Purity Primary Source)	0.100	100
100 ppb Calibration intermediate	100 ppb Calibration intermediate	5	50
20 ppb Calibration Standard	100 ppb Calibration intermediate	4	20
10 ppb Calibration Standard	100 ppb Calibration intermediate	2	20
5 ppb Calibration Standard/ CCV	100 ppb Calibration intermediate	1	20
2 ppb Calibration Standard	10 ppb Calibration Standard	4	20
1 ppb Calibration Standard	10 ppb Calibration Standard	2	20
0.500 ppb Calibration Standard	10 ppb Calibration Standard	1	20
0.200 ppb Calibration Standard/ CRL	2 ppb Calibration Standard	2	20
Soil Spike Solution (500 ppb)	1000 ppm Hg Stock Std. (AccuStandard Secondary Source)	0.100	200
Aqueous Spike Solution (200 ppb)	Soil Spike Solution	40	100

Table 2

Aqua Regia Chart				
# of digestion vessels	mL of Aqua Regia needed	mL of Aqua Regia to make	mL HCL to use	mL HNO3 to use
3	15	16	12	4
4	20	20	15	5
5	25	28	21	7
6	30	32	24	8
7	35	36	27	9
8	40	40	30	10
9	45	48	36	12
10	50	52	39	13
11	55	56	42	14
12	60	60	45	15
13	65	68	51	17
14	70	72	54	18
15	75	76	57	19
16	80	80	60	20
17	85	88	66	22
18	90	92	69	23
19	95	96	72	24
20	100	100	75	25
21	105	108	81	27
22	110	112	84	28
23	115	116	87	29
24	120	120	90	30
25	125	128	96	32
26	130	132	99	33
27	135	136	102	34
28	140	140	105	35
29	145	148	111	37
30	150	152	114	38

eurofins	Always check on-line for validity. **Mercury Analysis by EPA 245.1, SW846 7470A and 7471B**	Level: **Standard Operating Procedure**
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Approved by: **HFO2, SBB9, YBF9** Effective Date: **13-AUG-2024**	Document users: **EENE_Metals**	Responsible: **EENE_QA**

1) SCOPE AND APPLICATION

1.1. This SOP describes the procedure for extracting mercury from soil and water matrices for analysis by cold vapor atomic absorption.

1.2. This method can be used for determining mercury in drinking waters, wastewaters, ground and surface waters, soils, sediments, sludge and wipes.

1.3. This method describes the measurement of mercury extracted from soil and water with nitric and hydrochloric or sulfuric acids.

1.4. These methods can be used for determining mercury in aqueous drinking waters, wastewaters, ground waters, soils, sediments, sludge and wipes.

2) SUMMARY OF METHOD

2.1 This method provides the conditions for the detection of ppb levels of mercury by cold-vapor atomic absorption.

2.2 Prior to analysis, samples are digested with concentrated acids and heated to break down the mercury compounds that may be present.

2.3. The digestate is then pumped through the mercury analyzer to determine the precise amount of mercury that is in the sample

2.4. The mercury analyzer used is based on the absorbance of radiation at 253.7 nm by mercury vapor. The mercury has to be reduced to the elemental state and aerated from the solution through the vapor cell. Absorbance of the radiation measured is shown on the screen and printed out.

2.5 This method utilizes the external standard calibration technique to determine the mercury present. This is done by comparing the intensity of the sample absorbance to the response of the calibration standard.

3) DEFINITIONS

3.1 TALS –Laboratory Information Management System (LIMS)

3.2 NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

3.3 Refer to the glossary in the Laboratory Quality Manual (*QM-QM49163*) for additional definitions.

4) INTERFERENCES

4.1 Potassium permanganate is added to eliminate possible sulfide interferences.

4.2 Some samples such as seawater and brine may require up to 25 mL of additional permanganate. This is due to the increased presence of chlorides which, when converted to free chlorine, absorb at the same wavelength, 253.7 nm. These samples may also need more of the hydroxylamine sulfate reagent to ensure that none of the free chlorine is present in the absorption cell.

4.3 High concentrations of mercury can cause memory effects. Therefore, the tubing should be rinsed after a heavily contaminated sample, between each sample, and at the end of the run. The mercury analyzer detects when a sample has a high level of mercury by the slope of the absorbance peak. The system then performs a high-speed rinse of the liquid and gaseous phase parts. There is also a clean-out procedure outlined in the operation manual for extreme or organic contamination.

5) SAFETY

Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.1. The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the

method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Sulfuric Acid	Corrosive Oxidizer Dehydrator Poison	1 mg/m^3-TWA	Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. Symptoms of redness, pain, and severe burn can occur. Contact can cause blurred vision, redness, pain and severe tissue burns. Can cause blindness.
Nitric Acid	Corrosive Oxidizer Poison	2 ppm-TWA 4 ppm-STEL	Nitric acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison. Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract. Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Hydrochloric Acid	Corrosive Poison	5 PPM -Ceiling	Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death. Can cause redness, pain, and severe skin burns. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Potassium Permanganate	Oxidizer	5 mg/m^3 for Mn Compounds	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Dry crystals and concentrated solutions are caustic causing redness, pain, severe burns, brown stains in the contact area and possible hardening of outer skin layer. Diluted solutions are only mildly irritating to the skin. Eye contact with crystals (dusts) and concentrated solutions causes severe irritation, redness, and blurred vision and can cause severe damage, possibly permanent.

Potassium Persulfate	Oxidizer	None	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Causes irritation to skin and eyes. Symptoms include redness, itching, and pain. May cause dermatitis, burns, and moderate skin necrosis.
Stannous Chloride (Tin (II) Chloride)	Irritant	2 mg/m^3 TWA as Tin	Causes irritation to the respiratory tract. Can irritate skin and eyes. Symptoms include coughing and shortness of breath. Contact with skin and/or eyes may cause redness, itching and pain.
Mercury (1,000ppm standards)	Oxidizer Corrosive Poison	0.1 mg/m^3 Ceiling (Mercury Compounds)	Extremely toxic. Causes irritation to the respiratory tract. Causes irritation. Symptoms include redness and pain. May cause burns. May cause sensitization. Can be absorbed through the skin with symptoms to parallel ingestion. May affect the central nervous system. Causes irritation and burns to eyes. Symptoms include redness, pain, and blurred vision; may cause serious and permanent eye damage.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.2. Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded; other gloves will be cleaned immediately.

5.3. Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.4. The analyst must wear safety glasses and take extra care when checking for leaks in the gas lines.

5.5. The analyst must dispose of all unwanted chemicals and acids in properly marked containers. (See EETNE's waste disposal plan.)

Note**All work must be stopped in the event of a known or potential compromise to the health and safety of a Eurofins New England associate. The situation must be reported immediately to a laboratory supervisor or the EH&S coordinator.

6) EQUIPMENT AND SUPPLIES

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if

with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. Analyzer. See Table 2 and Attachments 3 and 4 for Maintenance and Trouble Shooting.

6.2. Volumetric glassware, Class A, various sizes

6.3. Calibrated fixed and adjustable volume pipetters

6.4. Analytical balance capable of accurately weighing 0.0001 g

6.5. Weighing boats.

6.6. Muffled metal spatula and scoopula

6.7. Tubes: plastic to fit in autosampler rack.

6.8. Hot Block by Environmental Express

6.9 Plastic digestion vials for Hot Block, certified Metals Free

7) REAGENTS AND STANDARDS

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Purchased

7.1.1. Hydrochloric acid (HCl): TraceMetal grade

7.1.2. Nitric acid (HNO_3): TraceMetal grade.

7.1.3. Sulfuric acid (H_2SO_4): TraceMetal grade

7.1.4. Reagent water: deionized water of sufficient quality to assure all targets are below the RL

7.1.5. Stannous chloride ($SnCl_2$)

7.1.6. Sodium chloride (NaCl)

7.1.7. Hydroxylamine sulfate ($(NH_2OH)\ 2H_2SO_4$

7.1.8. Potassium permanganate ($KMnO_4$)

7.1.9. Potassium persulfate ($K_2S_2O_8$)

7.1.10. Mercury (Hg) standards - 1,000ppm

7.2. NOTES:

7.2.1. All newly received standards and reagents from the vendors must be logged into TALS. This COA must be scanned and added to TALS on the docs screen in the reagents section for the appropriate

standard. If the COA is not supplied with the standard, then the vendor must be contacted to obtain a copy of the COA.

7.2.2. The standards and reagents must be properly labeled with the TALS ID, received date, expiration date, and opened/prepared date.

7.2.3. Check all reagents and standards for expiration date prior to use. The expiration date of prepared standards or reagents may not exceed the expiration date of the parent standard.

7.3. Made Internally

7.3.1. Stannous Chloride solution: Mix 50 g Stannous Chloride and 50 mL of concentrated hydrochloric acid into 500 mL final volume of DI water. (10% solution) This is based on the recommendation of the manufacturer of the instrument. This solution will be prepared fresh daily.

7.3.2. Potassium permanganate solution: Mix 50 g potassium permanganate into 1000 mL final volume of DI water. (5% solution)

7.3.3. Sodium chloride-hydroxylamine sulfate solution: Mix 120 g each of sodium chloride and hydroxylamine sulfate into 1 L final volume of DI water.

7.3.4. Potassium persulfate solution: Mix 50 g potassium persulfate into 1000 mL final volume of DI water. This will need to be stirred and/or heated to get complete dissolution. (5% solution)

7.3.5. Aqua Regia: Add 1 part concentrated HNO_3 to 4 parts concentrated HCl. This will result in a 3:1 molar ratio of HCL to HNO_3. This must be prepared fresh immediately before use.

7.3.6. 10% Hydrochloric Acid Rinse solution: Add 100 mL of concentrated hydrochloric acid to 900 mL of DI water.

8) SAMPLE COLLECTION, PRESERVATION, SHIPMENT AND STORAGE

8.1. Refer to the most recent revision of the SOP for Mercury Sample Preparation, *NE-WC-MPREP-SOP49306*.

9) QUALITY CONTROL

Table 1 – QC Requirements

Quality Controls	Frequency	Control Limit
Initial Calibration	Daily	>.995 Correlation <50% %RE at low point (CRI) <30% %RE at mid point
ICV (Second Source Standard)	Daily	95-105% (245.1) 90-110% (7470/7471)
Continuing Calibration Verification CCV	Every 10 samples or less	90-110%
ICB and CCBs	After every ICV/CCV	Less than the absolute value of the RL
Method Blank (MB)	1/20 samples	Less that the absolute value of the RL
Laboratory Control Sample (LCS) - Water	1/20 samples	7470/7471 - 80-120% 245.1 – 85-115%
Laboratory Control Sample – Standard Reference Material (LCSSRM) - For solid matrix batches only	1/20 samples	Standard of a known concentration, Acceptable recoveries % is stated in the reagent tab.

Quality Controls	Frequency	Control Limit
Duplicate (DU)	1/20 samples	RPD - <20%
Matrix Spike (MS)	1/10 samples (245.1) 1/20 samples (7470/7471)	7470 – 75-125% 7471 – 80-120% 245.1 – 85-115%
Matrix Spike Duplicate (MSD)	1/10 samples (245.1) 1/20 samples (7470/7471)	See MS recoveries RPD - <20%

9.1. Initial Demonstration of Performance

9.1.1. MDL studies are calculated on a yearly basis or whenever, in the judgment of the analyst, a change in analytical performance caused by either a change in instrument hardware or operating conditions would dictate they be re-determined.

9.1.2. A Precision and Accuracy study is done on a yearly basis or whenever a new analyst starts. The analyst must analyze at least 4 LCS samples separately at least one day apart. The standard deviation is calculated to give a measure of the precision and accuracy of the analyst and/or method. Refer to section XIII for more information.

9.1.3. Instrument Detection Limit is determined initially, or whenever, in the judgment of the analyst, a change in analytical performance caused by either a change in instrument hardware or operating conditions would dictate they be re-determined. The IDL is the analyte concentration that is required to produce a signal greater than three times the standard deviation of the noise level. Determine the average of three standard deviations obtained from the analysis of a reagent blank solution with ten consecutive measurements over three nonconsecutive days.

9.2. Calibration

9.2.1. The instrument is calibrated before each run using a minimum of a calibration blank and 5 calibration standards. The calibration standard must include a concentration at the established Limit of Quantitation (LOQ). The highest calibration standard establishes the linear range of the calibration

9.2.2. A correlation coefficient of $r2 \geq 0.995$ must be met before analyzing samples.

9.2.3. Percent relative error (% RE)

9.2.3.1. The %RE of the calibration standard at the midpoint of the calibration curve must be < 30% and the %RE of the lowest calibration standard must be < 50% for the calibration curve to be considered acceptable.

9.2.4. An initial calibration check (ICV and CCV)) must be analyzed directly following the calibration. At least one of these samples, preferably the ICV, must fall within 5% of its true value, while the other one may be within 10% of true value. The CCV during the remainder of the analytical run must be within 10% of true value.

9.2.5. The absolute value of ICB and CCB's must be <RL, otherwise the reporting limit for the day must be raised above the absolute value of the ICB/CCB.

9.2.6. If any of these QC checks fail, it is reanalyzed. If it fails again, and no other problem is found, the instrument is re-calibrated. In case of serious problems in the operation of the instrument, the manufacturer

can be contacted.

9.3 Sample Analysis

9.3.1. The Method Blank must be <10% of the affected sample(s) concentration or the absolute value must be <RL. Otherwise, the affected sample(s) must be rerun, redigested, or the reporting limit raised.

9.3.2. The Fortified Blank or Laboratory Control Sample (LCS) must be within 15% of the calculated value for aqueous fortified blanks for method 245.1, or 20% for 7470. The recovery must be within stated vendor limits for the solid matrix SRM.

9.3.3. The acceptable relative percent difference (RPD) for sample matrix duplicate must be within 20% for aqueous and soil samples.

9.3.4 The sample matrix spike (MS) % recovery must be within 25% of spiked value for 7470, 20% for 7471, and 15% for 245.1.

9.3.5. If the matrix spike recovery is <30%, then all affected samples <RL must be re-digested and rerun.

9.3.6. If any of these QC checks fail, it is reanalyzed. If it fails again, and no other problem is found, the instrument is re-calibrated. In case of serious problems in the operation of the instrument, the manufacturer can be contacted

9.3.7. Any data, which exceeds the out-of-control limits, is automatically re-run. As necessary, the samples may be re-digested.

9.3.8. Drinking Water samples reviewed within 24 hours of analysis. Samples results which exceed the primary drinking water MCL must be uploaded within the 24 hour period following analysis.

9.4 Corrections

9.4.1. All corrections made in any record or document pertaining to the analytical process must be in accordance with the following NELAC requirement: “Entries in records shall not be obliterated by methods such as erasures, overwritten files or markings. All corrections to record-keeping errors shall be made by one line marked through the error. The individual making the correction shall sign (or initial) and date the correction. These criteria also shall apply to electronically maintained records.

10) PROCEDURE

10.1 Set-Up Procedure

10.1.1 Open the CVAA software and turn on the Hg lamp in the software’s instrument controls window. Let the lamp warm up for at least 30 minutes.

10.1.2 Ensure Nitrogen gas lines are open and set to about 15psi.

10.1.3 Ensure all tubing is properly connected to the sample induction system, reductant bottle, liquid/gas separator, etc.

10.1.4 Prior to starting a calibration or sample run, start the instrument using the green run button in the analysis window and start a pre-rinse. The chart recorder (under instrument tools) can be used to

see when the instrument is baselined. Once the baseline has leveled, calibration or sample runs can be started.

10.2 Instrument Calibration

10.2.1 Obtain a commercially prepared mercury standard (100 or 1,000 ppm). Store this in a plastic or Teflon bottle away from other samples and standards

10.2.2 Prepare a blank and seven concentrations of mercury (0.2, 0.5, 1, 2, 5, 10 and 20 ppb), see Table 1. These need to be made within 24 hours of their use due to their small concentrations.

10.2.3 Process the standards through the entire digestion procedure as outlined in the most recent revision of the SOP for Mercury Sample Preparation. Reagents must be added to TALS to document the digestion of the calibration and calibration verification standards.

10.2.4 The instrument manual describes the procedure for running the calibration

10.2.5 The regression is then shown on the screen and has to be manually accepted to continue running the instrument. A correlation coefficient of $r^2 \geq 0.995$ must be met before analyzing samples.

10.2.6 The LDR is equal to the concentration of the highest calibration standard in the accepted calibration curve.

10.2.7 Allow the instrument to warm up for a minimum of 30 minutes before calibration.

10.2.8 The instrument is calibrated before each run using the manufacturer's instructions and the following guidelines:

10.2.9 Standards are made up fresh daily from the working intermediate of 1 ppm.

10.2.10 A minimum of 5 standards, one of which must be at equivalent to the CRL check standard, are used along with a blank. However, the following seven standards are recommended: 0.2, 0.5, 1, 2, 5, 10, and 20 ppb.

10.2.11 The %RE of the calibration standard at the midpoint of the calibration curve must be < 30% and the %RE of the lowest calibration standard must be < 50% for the calibration curve to be considered acceptable.

10.2.12 A linear regression curve is displayed on the screen. This is checked to determine the accuracy of the standard solutions and the instrument calibration, which must be accepted before

the sequence can be run. A correlation coefficient of $r^2 \geq 0.995$ must be met before analyzing samples.

10.2.13 A blank and a mid-level QC at 5 ppb are run to check the calibration curve. An initial calibration check (ICV and CCV)) must be analyzed directly following the calibration.

10.2.14 Calibration blanks are prepared in the same manner as the standards using laboratory reagent water and the appropriate standards. The ICB and CCB are analyzed after the ICV and CCV, respectively.

10.2.15 If the instrument is idle for 2 hours or more, then analyze a CCV and CCB prior to resuming the analytical run.

10.3 Sample Analysis

10.3.1 After all of these checks pass, a run may be started. During the run, several QC checks are performed, some start from the digestion process.

10.3.2 A Method Blank is prepared for every batch of 20 samples or less. The purpose is to detect any contamination in the reagents or glassware used.

10.3.3 A Fortified Blank, or Laboratory Control Sample (LCS), is prepared for every batch of 20 samples or less. For non-aqueous batches a solid matrix SRM of a known concentration is purchased from an outside vendor. For aqueous matrix, add 1 mL of the Aqueous Spike Solution. This check determines if there is a technical error in the way the method is being performed.

10.3.4 A sample matrix duplicate is prepared for every batch of 20 samples or less.

10.3.5 On one of every ten samples, a matrix spike is performed. A known amount of mercury is added to the sample. Add 0.250 mL of Soil Spike Solution for soil batch or 1 mL of Aqueous Spike Solution for aqueous batch.

10.3.6 After every ten samples and at the end of the sequence, a QC check standard (CCV) is automatically run. This is a QC of 5 ppb.

10.3.7 An instrument blank, the CCB, is run every 10 samples and at the end of the sequence after the CCV.

10.3.8 Samples with concentrations that exceed the highest calibration standard must be diluted and reanalyzed to be within the linear calibration range. All dilutions should be made using the mercury reagent blank, never dilute using only DI water.

11) CALCULATION / DATA REDUCTION

11.1 Waters, mg/L = C x D

Where:
C = Concentration of sample , mg/L.
D = Dilution Factor

11.2. Duplicates (Relative Percent Difference):

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\ \%$$

X_1 = Original Results

X_2 = Duplicate

11.3 LCS Percent Recovery:

$$\text{LCS \% Recovery} = \left(\frac{\text{Observed Conc. in LCS}}{\text{True LCS Conc.}} \right) \text{x } 100\ \%$$

11.4 MS Percent Recovery:

$$\text{\% Recovery of MS} = \left(\frac{\text{Observed Conc. in Spiked Sample} - \text{Sample Conc.}}{\text{True Spike Conc.}} \right) \text{x } 100\ \%$$

11.5 %Relative Error calculation for curve readback:

$$\%RE = \frac{|\text{true conc} - \text{found conc}|}{\text{True conc.}} * 100\%$$

12) METHOD PERFORMANCE

12.1 The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2 Demonstration of Capabilities – Prior to the analysis of samples, a Demonstration of Capabilities (DOC) as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.3 Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP (*NE-QA-QAS-SOP49199*) must be performed initially and whenever a significant change is made to the analytical system/ The MDL must be re-evaluated from quarterly MDL points at least every 12 months

12.3.1 EETNE performs MDLs also known as Limit of Detection (LOD) study on all instruments/ method in support of state and other program requirements such as CAM, RCP, ASP, CLP-like deliverables and specific project quality assurance objectives by carrying out a new study annually or by completion of quarterly limit of detection (LOD) verification and Limit of Quantitation (LOQ) analysis.

12.3.2 MDL studies are performed in accordance with the revision 2 procedures in 40CFR Part 136, appendix B. Initial MDL studies are performed when a new instrument is installed or undergoes major maintenance. Quarterly data collection is performed thereafter. Please refer to the current SOP for Establishment and Reporting of Detection Limits for details.

12.4 LOD Verification

12.4.1 Limit of Detection (LOD) verification is defined as an estimate of the minimum amount that an analytical process can reliably detect. Prior to use, MDL values are verified quarterly by preparing an LOD at a concentration no more than 3 times the MDL for single analyte tests, no more than 4 times the MDL for multiple analyte tests and no greater than the RL. The LOD is acceptable if it produces a peak at least 3 times above the instrument's

noise level. If a response is not acceptable or detected, the concentration of the failing analyte shall be increased until an acceptable response is observed, however, it should not exceed the reporting limit. If the LOD verification fails due to lack of detection, then the laboratory must perform and pass two consecutive LOD verifications at the higher spike concentration. LOD verifications are analyte, matrix, extraction method, clean-up technique and instrument configuration specific. If LOD verifications are not performed on all combinations, the laboratory must base the verification on the "worst case basis" by including all applicable clean-up techniques. Surrogates are required to be included in this study as well. Surrogates must be spiked at the lowest Initial Calibration concentration. The LOD verifications are logged in by QA on an annual basis. LOD verification will replace the annual MDL study except where specified by the method or program that a reoccurring MDL study is required.

12.5 LOQ

12.5.1 Limit of Quantitation (LOQ) is defined as the minimum concentration of an analyte/compound that can be reported with a specified degree of confidence or the lowest concentration that produces a quantitative result within specified limits of precision and bias. LOQ is set at or above the concentration of the lowest initial calibration standard. Eurofins Environment Testing New England defines the LOQ = RL. The LOQs are analyzed once per analysis, matrix and extraction method. The LOQ may also serve as ongoing demonstration of capability of analyst. A minimum of four consecutive replicates are analyzed at a concentration of the lowest initial calibration standard on an annual basis; however, LOQ may be analyzed as high as 2 times the reporting limit.

13) POLLUTION CONTROL

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687).

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution.).

13.3. Never dispose of samples, reagents, chemicals, or waste waters by pouring them down the sink. Always use designated waste containers for disposal.

13.4. Plan accordingly to limit waste accumulation. Make only the amount of reagent that can be used before the expiration date. Do not make in excess.

13.5. Clients should provide a sufficient amount of the sample for the requested analysis. Excess amounts of the sample result in increased disposal fees for the laboratory.

14) WASTE MANAGEMENT

14.1 Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to NE-EHS-HS-SOP54687. The following waste streams are produced when this method is carried out:

14.2 Aqueous Wastes:

14.2.1 All solvent contaminated water must be collected in lab satellite-containers then transferred to a waste drum in the hazardous waste staging area where they are monitored and ultimately disposed of by a hazardous waste disposal facility.

14.2.2 All non-solvent contaminated aqueous wastes (including preserved water, digestates, instrument effluents, and corrosive aqueous wastes) are accumulated in lab satellite-containers and transferred to a

drum in the hazardous waste staging area where they will be disposed by a licensed hazardous waste facility.

14.3 Solids:

14.3.1 Expired soil samples in the storage area are emptied into a drum and a sample is collected. The method of disposal will be determined by the findings of the sample profile.

14.3.2 Objects containing high levels of mercury (samples, broken thermometers, etc.) are segregated and collected in the waste staging area and packed for disposal by a hazardous waste facility.

14.4 Sludge, Tars, Oils:

14.4.1 These samples are accumulated in the waste staging area and packed for disposal by a hazardous waste facility/transporter.

14.5 Highly contaminated objects (reagents, chemicals, vials, samples) are segregated and collected by each dept. to avoid mixing of incompatible materials. It is then collected, and packed periodically throughout the year by hazardous waste disposal facilities

14.6 Contaminated disposable glassware utilized for the analysis. This waste is placed in trash containers and disposed with the regular lab trash.

15) REFERENCES/ CROSS-REFERENCES

15.1. "Method 7470A, Mercury in Liquid Waste (Manual Cold-Vapor Technique)", Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, Revision 1, September, 1994.

15.2. "Method 7471B, Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)," Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, Revision 2, February, 2007

15.3. "Method 245.1, Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry (Automated)", U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio 45268, EMMC Version, Revision 3.0, Issued 1994.

15.4. "Part III - Inorganic Analysis Specific QA/QC Requirements," Analytical Service Protocol Exhibit E Quality Assurance/Quality Control Requirements, New York State Department of Environmental Conservation, 07/2005.

16) ATTACHMENTS

None

17) REVISION HISTORY

17.1. 11/13/19 Revision 0 – SOP Created

17..2. 1/14/22 Revision 1

17.2.1. Replaced Element with TALS throughout document

17.2.2. Section V.B. and V.C combined

17.2.3. Section XII.B.4- added requirement to raise reporting limit based on ICB/CCB failure

17.2.4. Removed Section XII.D- special procedures for select client programs no longer run at EETNE

17.2.5. Section XIV- removed reference to former control chart program

17.2.6. XIX- added TALS to glossary

17.2.7. Removed Table A

17.3 Changes to current revision:

17.3.1 Section 7.3 – Added that Stannous Chloride is prepared daily.

17.3.2. Section 9 – % Relative Error added.

17.3.3. Section 10 – Start-up procedure added, % Relative error added into procedure.

17.3.4. Section 11 – Calculation for % Relative error added.

18) APPENDIX

NA

QM-QM49163 Quality Assurance Manual
NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits
NE-WC-MPREP-SOP49306 Mercury Sample Digestion by EPA 245.1, SW846 7470A and 7471B

End of document

Version history

Version	Approval	Revision information	
1	15.SEP.2022	D4 Template for Analytical SOPs -	
2	12.AUG.2024		

eurofins	Always check on-line for validity.	Level:
	DRO - Diesel Range Organic SW846 8015D Modified	**Standard Operating Procedure**
Document number: **NE-ORG-GCSV-SOP49322**		
Old Reference: **50.004**		
Version: **5**		Organisation level: **4-Business Unit**
Approved by: **BAA3, HFO2, SBB9** Effective Date: **08-AUG-2024**	Document users: **EENE_SEMIs, EENE_VOAs**	Responsible: **EENE_QA**

1) Scope and Application

1.1. This method describes the measurement of the collective concentrations of diesel range organics (DRO – 8015DM) in various matrices solids (soil, concrete etc.), sludge and water using methylene chloride (CH_2Cl_2) as a solvent extraction.

This method introduces a wide range of total petroleum hydrocarbons that corresponds to a boiling point range between 150°C to 340°C.

1.2. This method utilizes a solvent extraction technique (CH_2Cl_2) followed by gas chromatography (GC) instrumentation equipped with a flame-ionization detector (FID). An experienced analyst must perform this method according to the stated procedure. This is documented with a Demonstration of Capability which is kept on file at the lab for each analyst.

1.3. This method is developed to measure the concentration of various petroleum hydrocarbon distillates from Gasoline to Waste Oil, within the C10-C28 Diesel Carbon range. The concentration of the following Petroleum within the C10-C28 range may be determined by using this method:

1. Mineral spirits
2. Petroleum Naphtha
3. Aviation fuel
4. Kerosene
5. Diesel fuel

6. #2 Fuel Oil
7. #4 Fuel Oil
8. #6 Fuel Oil
9. Crude Oil
10. Lubricating Oil
11. Motor Oil and Waste Oil
12. Other Oil such as Hydraulic Oil, Cutting Oil

1.4. This method also covers the determination of certain weathered petroleum hydrocarbons that have undergone chemical or physical changes such as oxidation or bacterial degradation.

1.5. This method is a performance-based method. This technique takes into consideration that adequate documentation has been developed to demonstrate an equivalent level of performance and provide quality results.

1.5.1. A gas chromatography-mass spectrometry (GCMS) technique can be utilized to confirm non-related petroleum hydrocarbon sources and possible hydrocarbon background that impacts overall petroleum signatures. This confirmation utilizes SW846 8270D/E method (PAH's) followed by a library search and a reference standard calibration procedure.

1.5.2. When GCMS confirmation is needed to identify PAH compounds vs organic interference, additional QC requirements must be included, according to the SW846 8270D/E method such as a DFTPP tuning check every 12 hours, target ion identification, and continuing calibration verifications and laboratory control spikes for both the full semi-volatile list and aromatic fraction list, if the qualitative values are to be reported. See SOP *NE-ORG-GCMS-SOP49310* for full 8270D/E procedure.

1.5.3. The Practical Quantitation Limits (PQL) for this method (TPH-DRO) are listed below.

Table 1
PQL
DRO – 8015D

Matrix	Fraction	PQL
Soil	Hydrocarbon Distillate	27 mg/Kg
Water	Hydrocarbon Distillate	0.2 mg/L

2) Summary of Method

2.1. The DRO – 8015D method utilizes a methylene chloride extraction technique as defined in the SOP for SVOC Preparation Extraction, *NE-ORG-ORGP-SOP49332*.

The DRO extract is concentrated to a V_f =1mL. 1uL is injected into a gas chromatography (GC) instrument equipped with a flame ionization detector (FID) followed by data processing, quality interpretation and reporting.

2.2. Listed below are the specific GC analysis and interpretations.

2.3. Diesel range organics, by gas chromatography (DRO – 8015D), is measured as the total collected area from the C10 – C28 peaks. This quantitation is based on an external standard procedure using #2 Fuel Oil/Diesel Fuel products as calibration standards.

Table 2
Various Petroleum Hydrocarbons Products (DRO – 8015DM)

Compound	Retention Time (Min)
Aviation Fuel	1.80-12.0
#2 Fuel Oil	1.80-10.0
#6Fuel Oil	3.0-16.0
Motor Oil	8.0-17.0
Other Oil	8.0-17.0

3) Definitions

3.1. TALS –Laboratory Information Management System (LIMS)

3.2. NCM – Non-Conformance Memo – a system within TALS for the lab to communicate to project management and others when there is an anomaly seen with the samples or batch, or a QC failure.

3.3. Refer to the glossary in the Laboratory Quality Manual (*QM-QM49163*) for additional definitions.

3.4. Aliphatic Hydrocarbon Standard is defined as a 14 component mixture of the normal alkanes. The compounds comprising the Aliphatic Hydrocarbon Standard are used to define and establish windows for the DRO C10-C18 range.

3.5. Analytical Batch is defined as a group of field samples with similar matrices which are processed as a unit. For Quality Control purposes, if the number of samples in such a group is greater than 20, then each group of 20 samples or less are defined as separate analytical batches.

3.6. Calibration Check Verification (CCV) is defined as a calibration standard used to periodically check the calibration state of an instrument. The calibration check standard is prepared from the same stock standard solution as calibration standards, and is generally one of the mid-level range calibration standard dilutions.

3.7. Calibration Standards are defined as a series of standard solutions prepared from dilutions of a stock standard solution, containing known concentrations of each analyte and surrogate compound of interest.

3.8. Field Duplicates are defined as two separate samples collected at the same time and location under identical circumstances and managed the same throughout field and laboratory procedures. Analysis of field duplicates gives a measure of the precision associated with sample collection, preservation and storage, as well as laboratory procedures.

3.9. Laboratory Duplicates are defined as split samples taken from the same sampling container and analyzed separately with identical procedures. The analysis of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

3.10. Laboratory Method Blank is defined as an aliquot of reagent water or clean sand spiked with a surrogate standard. The laboratory method blank is treated exactly as a sample, exposed to all glassware, solvents, reagents, and equipment. A laboratory method blank is analyzed with every batch of samples, to determine if method analytes or other interferences are present in the laboratory environment, reagents, or equipment.

3.11. System Solvent Blank is defined as an aliquot of a method solvent (e.g., hexane or methylene chloride, pesticide grade or better, that is directly injected into the GC system. The purpose of the System Solvent Blank is to determine the level of noise and baseline rise attributable solely to the GC system, in the absence of any other analytes or system contaminants.

3.12. Surrogate Standards are compounds spiked into all samples, blanks, and matrix spikes to monitor the efficacy of sample extraction, chromatographic, and calibration systems.

3.13. All other terms are as defined in SW-846, "Test Methods for Evaluating Solid Waste", USEPA, September 1986, and as amended and updated.

4) Interferences

4.1. Method interferences may be caused by contaminants in other reagents and glassware (i.e., Turbo-Vap apparatus). To prevent cross contamination of samples, all these materials must be routinely and thoroughly cleaned before each use.

4.2. Carryover is the result of running a sample that contains high levels of heavy petroleum distillates. The interference is the lingering contaminants of a heavily contaminated sample that does not burn off in the normal run time and are present in the following run. To avoid problems due to carryover, analysts must dilute samples that may be heavily contaminated and run solvent blanks after high level samples.

4.3. Matrix interference by co-extracted materials such as plant matter, animal fats, waxes and phthalate ester can pose a major problem in TPH determination when using the flame ionization detector. An exhaustive clean-up of reagents and glassware may be required to eliminate background phthalate contamination.

5) Safety

5.1. Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*), the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.2. The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Acetone	Flammable	1000 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache.
Hexane	Flammable Irritant	500 ppm (TWA)	Inhalation of vapors irritates the respiratory tract. Overexposure may cause lightheadedness, nausea, headache, and blurred vision. Vapors may cause irritation to the skin and eyes.
Methylene Chloride	Carcinogen Irritant	25 ppm (TWA) 125 ppm (STEL)	Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting, and headache. Causes irritation, redness and pain to the skin and eyes. Prolonged contact can cause burns. Liquid degreases the skin. May be absorbed through skin.
Hydrogen Gas	Explosive	None	The main hazard is flammability. Exposure to moderate concentrations may cause dizziness, headache, nausea, and unconsciousness. Exposures to atmospheres less than 8 to 10% oxygen will bring about sudden unconsciousness, leaving individuals unable to protect themselves. Lack of sufficient o
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.3. Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded; other gloves will be cleaned immediately.

Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.4. The preparation of standards, reagents, and glassware cleaning procedures that involve solvents such as methylene chloride will be conducted in a fume hood with the sash closed as far as the

operations will permit. The analyst must dispose of all unwanted chemicals and acids in properly marked containers inside the fume hood and store the containers in the specified chemical cabinets.

5.5. All work must be stopped in the event of a known or potential compromise to the health and safety of a Eurofins associate. The situation must be reported immediately to a laboratory supervisor or the EH&S coordinator.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1. GC/FID
HPS16

Agilent 6980N series gas chromatograph with a 7683B series Injector, Flame ionization detector (FID)
Column – ZB-5MS, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.2. HPS18 (back-up)

Agilent 6980N series gas chromatograph with a CTC Leap-PAL Injector, Flame ionization detector (FID)
Column – ZB-5MS, 30 meters, 0.25mm diameter 0.25um film (or equivalent)

6.3. Laboratory Oven (Blue M)

6.4. Centrifuge (variable speed lab grade)

6.5. Analytical Balance Capable of Accurately Weighing 0.01g

6.6. PTFE Separatory Funnel = 2000 ml with Teflon

6.7. Volumetric Flasks(class A): 1mL, 2mL, 10mL, 25mL, 50mL, 100mL, 200mL, 1000mL

6.8. Vials = 2mL, Teflon-Lined crimp cap and PTFE Rubber-Lined Crimp Top

6.9. PTFE Solvent Wash Bottle

6.10. Disposable Borosilicate Glass Pasteur Pipettes

6.11. 100mL Graduated Cylinder (class-A)

6.12. Microsyringe: 10 uL, 100 uL, 250 uL, 500 uL, 1000 uL

6.13. Dispensett- capable of dispensing 25 ml of solvent

6.14. Metal Spatula

6.15. Filter Paper; Fisher P8 Filter Paper or equivalent

6.16. Crimper and Decrimper for 2 ml Vials

6.17. Glass Filter Funnel

6.18. PTFE Stirring Rod with Magnetic End

6.19. "Glass-Col" 3-D Shaker

6.20. TurboVap Concentrator

6.21. Drying Oven

6.22. CEM Mars6 Microwave, with Teflon vessels, ferrules, and caps

6.23. Each analytical instrument has its own software and a computer to run the instrument. All GC instruments are operated by Chemstation software. The data processing software is Chrom. The laboratory-wide LIMS system is TALS.

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met. Please refer to the SDS prior to the use of any reagent or standard.

7.1. Methylene chloride (CH_2Cl_2) – GC resolve

7.2. Hexane – pesticide quality or equivalent

7.3. Sodium sulfate: granular, anhydrous and purify by heating at 400°C for four hours.

7.4. Silica Gel: prepared by lab and activated at 400°C for four hours.

7.5. Reagent water: deionized water (ASTM Type I).

7.6. Methanol (CH_3OH) – ASC grade or equivalent.

7.7. Alconox cleaning agent.

7.8. TPH-8100M Calibration Standards: #2 Fuel Oil (Home Heating) such as 20mg/mL from Restek or equivalent. (0.2, 0.5, 1.0, 2.0, 5.0, 10.0, and 20.0 mg/ml.)

Gasoline, Jet Fuel, #2 Fuel Oil, Dielectric, #6 Fuel Oil, Hydraulic Oil and Motor Oil & Other standards are run as necessary for fingerprint identification.

7.9. ICV/LCS Pure Product Diesel Fuel Oil obtained from a local fuel company. LCS Standard: 500mg of neat #2 fuel to a final volume of 100ml (final con. 5,000ppm). Second Source Material must be

purchased from a different supplier than Primary Source.

7.10. Marker Standard – C9 – C36 aliphatic standard.

7.11. Surrogates: Chlorooctadecane (COD) – Stock : 2.130g into 100ml acetone (20,000ppm). O-terphenyl (OTP) – Stock : 2.045g into 100ml acetone (20,000ppm).

Working surr : 5ml of COD and 5ml of OTP into 1L acetone (100 ppm)

7.12. Nitrogen - Vendor: Airgas

7.13. Expiration dates for prepared standards are 6 months from prepared date. Expiration date for pure products is 5 years from day of purchase. Expiration dates for ampules are assigned by the vendor or one year after open.

7.14. Any standard/reagent that comes with a Certificate of Analysis must be scanned into TALS-reagent tab. Ensure proper labeling of standards including a TALS ID, received date, expiration date, and opened/prepared date.

7.15. Analysts must check all standards for expiration dates on a specific timeframe.

8) Sample Collection, Preservation, Shipment and Storage

8.1. The following details Eurofins Environment Testing's policy regarding collection, preservation and handling of all samples that are submitted for total petroleum hydrocarbon analysis. These guidelines are in accordance with the Massachusetts DEP Methods for the Determination of Extractable Petroleum Hydrocarbons (TPH-8100M).

8.2. Sample Collection, Preservation and Handling for DRO – 8015D

8.2.1. All samples must be cooled to 0-6°C immediately after collection.

8.2.2. A Chain of Custody must accompany all samples that are submitted for analysis documenting the time and date of sampling and any addition of preservative.

8.2.3. A summary of sample collection, preservation and holding times is provided in Table 3.

Table 3
Holding Times and Preservation for DRO – 8015DM Samples

MATRIX	CONTAINER	PRESERVATION	HOLDING TIME
Aqueous Samples	1L amber glass bottle with Teflon-lined screw cap	Add 5 mL of 1:1 HCl; Cool to 0-6°C	Samples must be extracted within 7 days and analyzed within 40 days
Soil/Sediment Samples	4-oz. or 6-oz wide mouth	Cool to 0-6°C	Samples must be extracted

	amber glass jar with Teflon-lined screw cap.		within 14 days and analyzed within 40 days

9) Quality Control

Table 4 – QC Requirements

Quality Controls	Frequency	Control Limit
Initial Calibration	As necessary	%RSD<20%, R^2>0.990, %RSE<20%
ICV (Second Source Standard)	After ICAL	<20% Drift or Difference
Continuing Calibration Verification CCV	Before and after analytical batch and after every 20 injections or 24hr	<20% Drift or Difference
Method Blank (MB)	One per extraction batch (up to 20 samples)	Value less than the RL
Laboratory Control Sample (LCS) – Water & Solid	One per extraction batch (up to 20 samples)	40-140% or statistically derived control limits in TALs
Laboratory Control Sample Duplicate (LCSD) – Water & Solid	One per extraction batch (up to 20 samples)	40-140% or statistically derived control limits in TALs
Laboratory Duplicate (If volume allows. May substitute with LCSD)	One per extraction batch (up to 20 samples)	50% RPD
Matrix Spike (MS) –	(As requested by client)	40-140% recovery
Matrix Spike Duplicate (MSD) – (run either Duplicate or MSD)	(As requested by client)	40-140% recovery, 50% RPD

9.1. Seven calibration standards must be prepared from the #2FO petroleum product to construct a calibration curve. The concentration range of these standards must bracket the linear working range of the instrument for all components. On a routine basis, the calibration will be prepared from the primary stock solution in DCM at the following concentrations: 0.2, 0.5, 1.0, 2.0, 5.0, 10.0, and 20.0 mg/mL.

9.2. The relative standard deviation (RSD) should be equal to or less than 20%. If linearity is used r^2 must be equal to or greater than 0.990 and have an %RSE of less than 20%. These values will be calculated by CHROM. If the calibration fails these parameters, instrument maintenance and a new calibration must be performed. Only Average and Linear regressions are accepted.

9.3. An Initial Calibration Verification (ICV) must be analyzed using a second source standard different than that of the calibration standards. The ICV is a mid-range concentration of the method analytes. The recoveries for the ICV are set at 80-120% in LIMS.

9.4. Low calibration verification (LCV) need to be verified for each analyte with each calibration. This is calculation is done by automatically by the Chrom software in the "calibration" tab. The low point

readback needs to be reviewed upon initial calibration review. The percent recoveries for each analyte should be between 30% drift. If LCV criteria is not met for a specific reporting level, than the reporting level for the analyte should be raised to the level which it does pass the 70-130% criteria however must be within the method established reporting limits.

9.5. Calibrations points must be run as a 'single event'. All points must be run within the same 12 hour tune window. If a point is dropped from the middle of the curve, then the whole point is to be discarded. If a point needs to be rerun, it must be done in the same run as the rest of the curve, prior to sample analysis.

9.6. Eurofins Environment Testing, Inc. adheres to a strict quality assurance and quality control plan to assure accurate and precise results. The following quality control steps are specific to this method. Each analyst must comply to these steps to ensure the quality of results.

9.6.1. System Blank (Instrument QC)

9.6.2. 5000 ug/ml DRO #2 Fuel Oil CCV

9.6.3. Method Blank

9.6.4. Laboratory control sample

9.6.5. Duplicate (If enough volume submitted, as requested)

9.6.6. Matrix Spike (If enough volume submitted, as requested)

9.6.7. Matrix Spike Duplicate (If enough volume submitted, as requested)

9.6.8. Closing DRO (no more than 20 injections from CCV-CCV)

Method blank and laboratory control sample are run 1 each per analytical batch of 20. The duplicate, matrix spike and matrix spike duplicates are analyzed upon request and available sample. Refer to table 4 for acceptance criteria for all batch and instrument QC.

10) Procedure

10.1. 3510C 8015DRO - Extraction

10.1.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware used for the extraction and needs to be double checked by a secondary tech before the extraction begins.

10.1.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not, there must be a comment in the comment section of the bench sheet. If there is no comment, then the sample is expired and must be brought to management's attention immediately.

10.1.3. The standard spike IDs need to be checked against what is being used and what is found on the TALS bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.1.4. Check the pH of the sample with wide-range pH paper and if necessary adjust with HCl to a pH < 2.0. The pH is checked by dipping a pipette into the sample and touching it to the pH paper. Note the initial pH on the bench sheet.

10.1.5. Add about 5-10g of NaCl, as an ionic buffer to all samples and QC.

10.1.6. Mark the water meniscus on the side of the glass sample container, spike all waters with 1mL of EPH/TPH surrogate and transfer the contents to a 2L separatory funnel. Spike 1mL of DRO LCS spikes into the batch LCS/D. If there are MS/D on the batch they receive 1mL of DRO LCS spike as well. Rinse the container with CH_2Cl_2 and shake for 30 seconds and pour into the separatory funnel.

10.1.7. Add 60mL of CH_2Cl_2 to the sample container; rinse the entire surface and transfer the solvent to the separatory funnel.

10.1.8. Seal and shake the separatory funnel vigorously for 2 minutes with periodic venting to release excess pressure.

10.1.9. Replace the funnel in its stand and allow the water and the CH_2Cl_2 phases to separate for a minimum of 10 minutes. If the emulsion interface between layers is more than 1/3 the size of the solvent layer, the tech must employ mechanical techniques to complete the phase separation. A stirring rod, pre-cleaned with CH_2Cl_2 will work in most cases. If emulsion still occurs, the emulsion layer is transferred into 40ml VOAs and centrifuged for phase separation. Transfer back the aqueous layer to the separatory funnel.

10.1.10. Slowly drain the CH_2Cl_2 layer through a filter funnel containing filter paper and both sodium sulfate and silica gel into a labeled nipple condenser tube. The sodium sulfate and the silica gel are layered in the filter funnel with ~2.5g sodium sulfate on the bottom ~6g of silica gel in the middle and another ~2.5g sodium sulfate on the top.

10.1.11. Repeat the extraction (10.1.7 through 10.1.9) with 60ml of CH_2Cl_2 added to separatory funnel two more times, combining the extracts into the same nipple condenser each time along with thoroughly rinsing the filter funnel each time.

10.1.12. The initial volume is taken by returning the extracted water from the separatory funnel to the original amber liter. The level is brought to the line that was marked as the meniscus and then poured into a Class A graduated cylinder or calibrated Class B graduated cylinder. The initial volume is recorded on the bench sheet.

10.1.13. The extract is now ready for the concentration step.

10.1.14. The extraction tech is responsible for entering the extraction information into the TALS system and ensuring it is correct.

10.2 3546 8015 DRO

10.2.1. The lab tech must check the sample ID on the container against the sample ID on the bench sheet. The lab ID (620-#####-##) needs to be written on the all glassware used for the extraction and needs to be double checked by a secondary tech before the extraction begins.

10.2.2. The collection date needs to be double checked to ensure the hold time is within acceptance limits. If it is not there must be a comment in the comment section of the bench sheet. If there is no comment then the sample is expired and must be brought to management's attention immediately.

10.2.3. The standard spike IDs need to be checked against what is being used and what is found on the bench sheet. If these do not match the bench sheet must be changed to reflect the ID being used.

10.2.4. Wait for sample to come to room temperature. Using a metal spatula, remove the top layer of the sample and discard. Mix the remaining sample well inside its own container to homogenize the entire matrix, note an excess of extraneous material (rocks, twigs, vegetation, or other) in the comment section of the SVOC soil extraction bench sheet.

10.2.5. Weigh approximately 15 grams of soil into a tared glass container. Record the balance ID on the bench sheet. Record weight on bench sheet. Blend with approximately 5-10 grams sodium sulfate mix well to ensure the sample is free flowing and sand like consistency. Additional drying agent may be needed to achieve this consistency.

10.2.6. Transfer contents of the glass container to the microwave cells. Add 1 mL of EPH/TPH surrogate solution into the sample. If the sample is a quality control sample, add 1mL of the DRO/8100 spike.

10.2.7. Add 25 ml of 1:1 methylene chloride/Acetone; hand tighten the cell caps (may need to adjust volume to 25-40 ml according to the matrix).

10.2.8. Place the vessel in the sleeves and onto the rotor then into the microwave. (A minimum of 8 cells can be run at a time. Use the center row and space the cells out evenly.)

10.2.9. Go onto the one touch method, Select the appropriate method for the samples you are running and press start.

10.2.10. Extraction Conditions:

	Ramp (min)	Hold	Power	Temperature(^{o}C)
3546 100C Xpress(Small cells)	15-20	15	1030-1800	100
3546 100C Xpress plus(large cells)	15	15	290-1800	100
3546 100C Xpress plus glass (large cells with liners)	15	15	500-1500	100

10.2.11. When the microwave has finished running, remove samples tray and filter the samples through filter paper and both sodium sulfate and silica gel into a labeled nipple condenser tube. The sodium sulfate and the silica gel are layered in the filter funnel with ~2.5g sodium sulfate on the bottom ~6g of silica gel in the middle and another ~2.5g sodium sulfate on the top. Rinse the microwave tube 3 times with methylene chloride into the funnel. Rinse the funnel once the sample has been filtered.

10.2.12. The extract is now ready for the concentration step.

10.2.13. The extraction tech is responsible for entering the extraction information into the LIMS system and ensuring it is correct.

10.3 Concentration steps for 8015 DRO

10.3.1. The lab tech is responsible for labeling all needed vials and VOAs with the correct number for the sample.

10.3.2. Carefully pour the sample extract into the Turbovap nipple condenser and load the glassware into the vap.

10.3.3. Close the main lid, activate the active cells by pressing the associated button. The vap will initiate upon closure of the lid.

10.3.4. Maintain an ongoing visual observation of the concentration process through the window on the main lid. Once the solvent has reached a lower level, 10-2ml, the vap can be paused by simply lifting the main lid. The vap will continue once the lid closes.

10.3.5. Once the concentration process is complete, press the cell button to cancel gas flow or open the main lid. Transfer the nipple condenser to a rack.

10.3.6. Concentrate the TPH 8100/DRO extract to approximately 0.8ml. Do not let the sample go dry! If a sample goes dry, re-extract the entire sample.

Using a 9” disposable glass pipette transfer the extracts to a calibrated 2ml auto sampler vial. Rinse the flask with methylene chloride and use the rinsate to top off the extract to 1ml. If sample will not go down to recommended volume, note the final volume in the bench sheet.

NOTE: If using the 2 mL auto-sampler vials to determine the extract volume, Calibrate a vial with a volumetric syringe.

- **Measure out 1ml of solvent in a 1ml volumetric syringe, and transfer the solvent to the 2ml vial and cap the vial**
- **Mark off the solvent level on the vial and use this vial as a measuring tool.**
- **Calibration of the 2 mL auto-sampler vial should be done each day and for each solvent**

11) Calculations / Data Reduction

11.1. Waters, mg/L = C x D

Where:
C = Concentration of sample , mg/L.
D = Dilution Factor

11.2. Solids, mg/kg (dry weight basis) = (C x D x F) ÷ E

Where:
C = Concentration of sample , mg/L
D = Dilution Factor
E = (100 % - percent moisture) ÷ 100 %
F = Volume/Weight Factor - Volume of final extract (mL) divided by weight of sample (g)

11.3. Duplicates (Relative Percent Difference):

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\ \%$$

X1 = Original Results
X2 = Duplicate

11.4. LCS Percent Recovery:

$$\text{LCS \% Recovery} = \left(\frac{\text{Observed Conc. in LCS}}{\text{True LCS Conc.}}\right) \times 100\ \%$$

11.5. MS Percent Recovery:

$$\text{\% Recovery of MS} = \left(\frac{\text{Observed Conc. in Spiked Sample} - \text{Sample Conc.}}{\text{True Spike Conc.}}\right) \times 100\ \%$$

11.6. % RSE calculation:

To calculate RSE you need to know:

1. The true concentration of each calibration standard. This is x_i
2. The measured concentration of each calibration standard. This is x'_i
3. The number of standard levels in the curve. This is n
4. The type of curve (average, linear or quadratic) the type of curve determines the value of p. For an average curve, p=1, for linear p=2 and quadratic p=3

$$\%RSE = 100 \times \sqrt{\sum_{i=1}^{n} \frac{\left[\frac{x'_i - x_i}{x_i}\right]^2}{n-p}}$$

11.7. Calculating the Calibration Factor (CF)

The Chrom software is utilized to automatically calculate the sample responses and calibration factors. For the External standard calibration using the average calibration factor, the CF is calculated as follows by using information taken from a known calibration sample.

CF = (As / Cs)

Where:
As = Response (area) for the parameter to be measured
Cs = Concentration of the parameter to be measured

11.8. Calculating Parameter Concentration

Using the above calculation, the concentration of the analyte found in an actual sample can then be calculated:

Cr (mg/mL) = (As / CF)

Where:
As = Response for the parameter to be measured
Cr = the raw concentration obtained from the computer printout

11.9. External standard calibration using Linear Regression

Cr (mg/mL) = (As– b)/(a)

Where:
As = Response (area) for the parameter to be measured
a = The Slope of the line
b = The y intercept

11.10. The following equation is used to calculate the actual concentrations of constituents by using the raw data generated by the software.

$$C = Cr \times df$$

Where:
df = the dilution factor

$$df = d \times F$$

Where:
d = dilution used when running sample and normally will be documented in the sequence run log.

$$F = \frac{1000 \times vf}{vi \text{ or } wi}$$

Where:
vf = final volume of the extract (normally will be 1 or 2 mL)
vi = initial volume of the sample
wi= initial weight of the sample.

12) Method Performance

12.1. The supervisor has the responsibility to ensure that an analyst who performs this procedure is properly trained in its use and has the required experience. Performance is monitored through internal QC and outside performance evaluation samples. Please refer to the QA Manual for additional information concerning Precision and Accuracy.

12.2. Demonstration of Capabilities – Prior to the analysis of samples, a Demonstration of Capabilities (DOC) as described in the QA Manual, must be performed initially, annually and any time a significant change is made to the analytical system.

12.3. Method Detection Limit Study – A Method Detection Limit (MDL) study, as described in the Detection Limit SOP, (*NE-QA-QAS-SOP49199*), must be performed initially and whenever a significant change is made to the analytical system. The MDL must be re-evaluated from quarterly MDL points at least every 12 months.

12.4. LOD and LOQ studies will be performed per the most current DOD requirement as described in the current SOP (*NE-QA-QAS-SOP49199*). The LOD and LOQ will be verified quarterly, in which DOD samples are analyzed.

13) Pollution Control

13.1. It is Eurofins New England's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health and Safety Manual (*NDSC-US-EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England Facility Addendum EH&S Manual (NE-EHS-HS-SOP54687).

13.2. This method does not contain any specific modifications that serve to minimize or prevent pollution.

14) Waste Management

14.1. Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to NE-EHS-HS-SOP54687. The following waste streams are produced when this method is carried out:

14.1.1. Contaminated disposable glassware utilized for the analysis. This waste is placed in trash containers and disposed with the regular lab trash.

15) References

15.1. USEPA, Nonhalogenated Organics by Gas Chromatography (SW-846) Method 8015D, June, 2003, Revision 4.

15.2. USEPA Federal Register 40 CFR Part 136, Appendix B, Guidelines Establishing Test Procedures for the Analysis of Pollutants, July, 1992.

15.3. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 8100: Polynuclear Aromatic Hydrocarbons; September, 1986, Revision 0.

15.4. USEPA, Guidance on Evaluation, Resolution, and Documentation of Analytical Problems Associated with Compliance Monitoring, EPA 821-B-93-001; U.S. Government Printing Office, Washington, D.C., June, 1993.

15.5. USEPA Test Methods for Evaluating Solid Waste (SW-846); Method 3510C: Separatory Funnel Liquid, Liquid Extraction, December, 1996, Revision 3.

15.6. USEPA Test Methods for Evaluating Solid Waste (S-846); Method 3546: Microwave Extraction: February, 2007, Revision 0.

15.7. USEPA Test Methods for Evaluating Solid Waste (S-846); Method 3580A: Waste Dilution: July, 1992, Revision 1.

15.8. Eurofins Environment Testing, Inc. Standard Operating Procedures for Establishment and Reporting of Detection Limits, *NE-QA-QAS-SOP49199*; most current revision.

15.9. Eurofins Environment Testing, Inc. Standard Operating Procedures for SVOC Sample Preparations, *NE-ORG-ORGP-SOP49332*; most current revision.

15.10. USEPA Method 8000D: Determinative Chromatographic Separations, Revision 4 July 2014, Update V.

15.11. USEPA Method 8270D; Semi Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique; Revision 5; July 2014.

15.12. USEPA Method 8270E; Semi Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Capillary Column Technique; Revision 6; June 2018.

16) Method Modifications

None

17) Attachments

19.1 GC Instrument Method Conditions

19.2 Corrective Actions

19.3 Turbovap Operating Conditions

18) Revision History

Rev 1, 10/25/19
SOP put in use.

Rev. 2, 2/9/21
Section VII,2,D- Clarification of soil handling and preparation procedure.
Section VII,3,D- Clarification of soil handling and preparation procedure.

Rev 3, 1/27/22
Replace reference to Element with TALS throughout.
Update primary standard provider to Restek

Rev4, 5/9/23
Reference to method 3550C removed
Reference methods updated with revision number.
SW-846 extraction methods added.

Changes to current revision:
Entire SOP: Format changed to align with D4 formatting; Replaced CCC with CCV; Changed 4°C to 0-6°C; Removed the following Sections because they were either combined into other Sections or were covered under other SOPs-TPH Calibration and Calculation, MDL, Troubleshooting and Instrument Maintenance.
Section 1, 2, 3, 6, 7, 10, 11, 12, 13, 14, 15, 19: Updated text.
Section 1.5.1 & 1.5.2: Removed the word 'modified'.
Section 5: Changed name from Health & Safety to Safety and updated text.
Section 9: Added Table 4; Added RSE added to calibration criteria; Listed Average and Linear curve fits as the only acceptable fits. Removed the following: Quadratic regression should not be used and is an indicator GC maintenance.

Section 15: Added references for Methods 8270D & 8270E.
Section 16, 17: Added new Section (Method Modifications, Attachments).

19) Appendix

19.1. GC Instrument Method Conditions

Operating Condition for GC FID

Oven Ramp	°C/minute	Next °C	Hold Minute
Initial		50	2.5
Ramp1	20	300	0
Ramp2	40	340	2

Injector: 300°C Detector: 300°C Carrier Gas: H_2 6ml/min
*- These parameters may change slightly depending on current GC performance.

19.2. Corrective Actions

If the continuing calibration technical acceptance criteria are not met, it becomes necessary to take corrective actions to achieve the acceptance criteria. Continuing calibration technical acceptance criteria ***MUST*** be met before any samples or required blanks are analyzed in an analytical sequence. Any samples or required blanks analyzed when continuing calibration criteria were not met will require reanalysis. Remedial actions, which include but are not limited to the following, must be taken when criteria are not met:

- Check and adjust GC operating conditions.
- Clean or replace injector liner.
- Flush column with solvent according to manufacturer's instructions.
- Break off a short portion (approximately 0.33 cm) of the column.
- Replace the GC column (performance of all initial calibration procedures are then required).
- Prepare and analyze new continuing calibration
- Prepare a new initial calibration curve.

19.3. Turbovap Operating Conditions

- Temperature: target set @ 43°C
- Pressure: target set @ 0.7ml/min

QM-QM49163 Quality Assurance Manual
NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-ORG-GCMS-SOP49310 Semi volatile Organic Compounds by Gas Chromatography Mass Spectrometry: Capillary Column Technique SW846 8270D & 8270E Method
NE-ORG-ORGP-SOP49332 SVOC Sample Preparations Including SW-846 Methods: 3510C Separatory Funnel Liquid-Liquid Extraction, 3540C Soxhlet Extraction, 3546 Microwave Extraction, 3550C Ultrasonic Extraction, 3580A Waste Dilution
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits

End of document

Version history

Version	Approval	Revision information	
3	20.SEP.2022	D4 Template for Analytical SOPs -	
4	14.JUN.2024		
5	08.AUG.2024		

eurofins	Always check on-line for validity. **Analysis of Gasoline Range Organics (GRO) C6-C10**	Level: **Standard Operating Procedure**
Document number: **NE-ORG-GC-SOP49315**		
Old Reference: **60.005**		
Version: **6**		Organisation level: **4-Business Unit**
Approved by: **BAA3, HFO2, SBB9** Effective Date: **08-AUG-2024**	Document users: **EENE_SEMIs, EENE_VOAs**	Responsible: **EENE_QA**

1) Scope and Application

The GRO method describes the measurement of gasoline range organics in a variety of matrices such as water, soil/sediment and product/solids using the purge and trap technique.

GRO corresponds to the range of alkanes from C6 to C10 and covering a boiling point range of approximately 60ºC to 170ºC. The GRO methodology is based on the 8015D method.

This method utilizes a purge and trap technique followed by a gas chromatograph (GC) equipped with a photo ionization detector (PID) and a flame ionization detector (FID) in series. Quantitation is based on FID detector response to a gasoline component standard for the GRO method.

Table 1 outlines the retention times for the system monitoring compounds along with target and marker compounds. Table 2 lists practical quantitation limits (PQLs) by matrix.

TABLE 1
Calibrated Compounds and Approximate Retention Times

System Monitoring Compounds

Compound Name	Approximate Retention Time (minutes)

	FID
2,5-Dibromotoluene	29.68

Target and Marker Compounds

Compound Name	**Approximate Retention Time (minutes)**
	FID
2-Methylpentane	8.76
GRO C6-C10	8.86 to 23.13
1,2,4-Trimethylbenzene	23.23

TABLE 2
Practical Quantitation Limits by Matrix (PQL)

Target Compounds

Compound Name	**Drinking Water (ug/L)**	**Waste Water (ug/L)**	**Soil Solid (mg/kg)**
GRO C6-C10	100	100	0.100

On occasion clients may request slight modifications to this SOP. Any modification to this procedure must be approved by the QA department or the Laboratory or Technical Director, and documented fully in an NCM that accompanies the analytical batch.

2) Summary of Method

Purgeable gasoline range organics in an aqueous state are transferred from an aqueous phase to a vapor phase by purging the sample with an inert gas (helium). The purged vapor stream is concentrated on a trap, a stainless steel tube containing sorbent material capable of trapping the purged VOCs. The volatile hydrocarbons are then desorbed from the sorbent materials onto a capillary column by back-purging the trap with helium at an elevated temperature. The column is temperature-programmed to separate the compounds, which are then detected by a flame ionization detector (FID) interfaced to the gas chromatograph (GC). Quantitation is based on FID detector response to a gasoline component standard for the GRO method.

3) Definitions

VOC – volatile organic compound
VPH – volatile petroleum hydrocarbon
DI – deionized
GC – gas chromatograph
GRO – gasoline range organics
MDL – minimum detection limit
PQL – practical quantitation limit
PID – photo ionization detector
FID – flame ionization detector
QC – quality control
CCC – continuing calibration check
LCS – laboratory control sample
LIMS – laboratory information management system
PPB – parts per billion
PPM – parts per million
CF- Calibration Factor
DNAPL – dense non-aqueous phase liquid
LNAPL – light non-aqueous phase liquid
TALS - Eurofins Laboratory Information Management System (LIMS)
NCM: Non-Conformance Memo, an electronic memo from the laboratory to reviewers and Project Managers, to notify them of a non-conformance, anomaly, or special condition associated with a sample or analytical batch.

4) Interferences

The major sources of interference when analyzing samples with this method and the preventive actions taken to control each of these sources are as follows:

4.1)
Purge/carrier gas supplies

The possibility of impurities from the purge and carrier gases entering the analytical system will be minimized by:

4.1.1) The installation of molecular sieve filters and hydrocarbon filters in the gas plumbing ahead of the instrumentation; and

4.1.2) Utilizing ultra high purity gases.

4.2) Residual instrument background

4.2.1) To avoid the possibility of organic compounds out-gassing from the sample lines and fittings in the purge and trap system, only nickel tubing and silcosteel fittings are used.

4.2.2) A daily system blank is analyzed on each instrument to monitor the system before any samples are run. If the blank shows any contamination, corrective action must be taken before proceeding with sample analysis (see section 9.5.1).

4.2.3) Cross-contamination from the sparging vessels is minimized by removing the vessels after each sample is run rinsing the sparging needle with DI water, and replacing with a clean vessel (refer to cleaning protocol on next page) or alternately programming instrument rinses. In some instances it will be necessary to run a "cleanup blank" in a position that has been exposed to a highly contaminated sample.

4.2.4) Carry-over from a high concentration sample is minimized by: running lower dilution or cleaner samples at the beginning of a sample sequence and samples known to have high contamination at the end of the sequence, and by analyzing a reagent blank directly after the highly contaminated sample.

4.2.5) Frequent bake-out of the trap, transfer lines, and GC oven may be necessary to keep the instrument free from contamination.

4.2.6) Cross-contamination from analyst error is avoided by

4.2.6.1) Keeping gloves clean and dry between loading samples

4.2.6.2) Rinsing the dispensing syringe with reagent water between loading samples (or more rigorous cleaning after highly contaminated samples)

4.2.6.3) Appropriately cleaning dilution syringes between loading samples.

4.3) Cleaning protocols are as follows:

4.3.1)
Purge vessels:
Remove all tubes from the autosystem unit and rinse a minimum of 3 times with hot tap water and 3 times with DI water. Bake for one hour at 230^{o} F. Soapy water or methanol can be used additionally for oily / foamy residue or highly contaminated tubes.

4.3.2)
Syringes:

All syringes used for preparing dilutions shall be cleaned by rinsing them 3 times fully with methanol. Dispensing syringes (5ml Luer Lock) shall be rinsed 3 times with DI water between uses. Additional cleaning may be performed on an as needed basis with soap, hot tap water, methanol and reagent water.

4.3.3)
Glassware:
All flasks used in preparing standards or samples shall be rinsed 3 times with hot tap water and 3 times with DI water. Soapy water or methanol can be used additionally for oily / foamy residue or highly contaminated flasks.

4.4) **CAUTIONS**

Certain activities may result in the degradation of samples, invalidation of results, or damage to equipment. Care should be taken to minimize such events by following proper sample handling and proper laboratory procedures:

4.4.1) In order to ensure the integrity of samples and standards, and to avoid degradation of volatile compounds, keep refrigerated until time of preparation and analysis.

4.4.2) Avoid excessive agitation of samples and standards, which would result in the release of volatile compounds.

4.4.3) Any soapy or frothy samples will require being diluted at time of loading to avoid damage to the trap, column, and detectors during analysis.

4.4.4) Highly contaminated sample(s) with heavy petroleum product shall be diluted sufficiently to avoid excessive system contamination and "carry-over" contamination to other samples in the run sequence.

4.4.5) Analysts in the VOC department shall avoid entering departments in the building that use such solvents as methylene chloride and acetone. This will avoid the possibility of carrying the vapors on their lab coats back to the VOC instrument room, which may cause false positive results on the VOC data.

5) Safety

Employees must abide by the policies and procedures in the NBLSC Environmental Health and Safety Manual (*NDSC-US EHS-QP46060*), the New England EH&S Manual (NE-EHS-HS-SOP54687) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the

user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.1) Specific equipment related hazard areas:

5.1.1)
The gas chromatograph contains zones that have elevated temperatures. The analyst needs to be aware of the locations of those zones, and must cool them to room temperature prior to working on them.

High temperature zones - use caution to prevent burns from:
Transfer line (130°C-150°C)
GC oven and injectors (up to 230°C)
PID detector (260°C)
FID detector (260°C)
Glassware oven (230°F)

5.1.2) There are areas of high voltage in the gas chromatograph. Depending on the type of work involved, either turn the power to the instrument off, or disconnect it from its source of power.

Electrical shock hazard zones - turn instrument off when servicing.
GC - power supply.
Purge and trap - power supply.

5.1.3) High pressure
Purge vessels – back pressure can push liquid out of tube/syringe.
Gas supply.

5.1.4) Procedural Safety
Chemicals - follow Chemical Hygiene Plan when handling samples, standards, or chemicals.
Syringes - use caution to avoid puncture from needles.
Vapors - use caution to avoid inhalation of sample/standard vapors.

5.1.5) The task of opening/closing VOA vials and the task of crimping vials could involve repetitive motions which could cause stress and an illness for the employee. Employees must avoid carrying out these tasks for extended periods of time and the work must be split up among the employees where possible.

5.1.6) To reduce the risk of cuts from broken glassware, cut-resistant gloves must be worn when opening and closing VOA vials.

5.2)
Primary Materials Used

The following is a list of the materials used in this method, which have a serious or significant hazard rating. This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and standards section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Methanol	Flammable Poison Irritant	200 ppm-TWA	A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Symptoms of overexposure may include headache, drowsiness, and dizziness. Methyl Alcohol is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure. Irritant to the eyes.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

5.3) Eye protection that protects against splash, laboratory coat, and appropriate gloves must be worn while samples, standards, solvents, and reagents are being handled. Cut resistant gloves must be worn doing any other task that presents a strong possibility of getting cut. Disposable gloves that have become contaminated will be removed and discarded, other gloves will be cleaned immediately.

5.4) Exposure to chemicals must be maintained as low as reasonably achievable, therefore, unless they are known to be non-hazardous, all samples must be opened, transferred, and prepared in a fume hood or under other means of mechanical ventilation. Solvent and waste containers will be kept closed unless transfers are being made.

5.5) The preparation of standards and reagents will be conducted in a fume hood with the sash closed as far as the operations will permit.

5.6) All work must be stopped in the event of a known or potential compromise to the health and safety

of a Eurofins associate. The situation must be reported immediately to a laboratory supervisor or Safety Coordinator.

6) Equipment and Supplies

The following items are recommended for performing this procedure. Equivalent items should only be used or when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

6.1) Laboratory instrumentation for this method consists of two GC instruments, each of which is controlled by its own computer and software. Both are equipped with 5mL, glass sparging vessels, a VOC trap (Supelco Vocarb 3000 or equivalent) and capillary columns (DB-MTBE or equivalent).

GC / FID / PID (FID1)

EST Centurion autosampler/EST Evolution II concentrator
Vocarb 3000 K trap and conditions used
Agilent 6890n series gas chromatograph
Photo ionization detector (PID) and Flame ionization detector (FID)
Column – RTX-502.2, 105 meters, 0.53mm diameter, 3.00um film

GC / FID / PID (FID2)

OI Eclipse 4660 Autosampler/Concentrator
Supelco Custom Coiled Trap, PT#22613330-10
Agilent 6890n series gas chromatograph
Photo ionization detector (PID) and Flame ionization detector (FID)
Column – RTX-502.2, 105 meters, 0.53mm diameter, 3.00um film

6.2) Analytical balance - Fisher Scientific – accu series capable of reading 0.1mg – 120g

6.3) Flasks

10, 25, 50, 100 and 250ml volumetric with ground glass stoppers.

6.4) Syringes

5mL glass Luer lock tip and PTFE coated plunger; 5, 10, 25, 50, 100 and 500 gas tight microliter syringes.

6.5)
VOA vials

40 ml amber, open top screw cap with PTFE faced silicone septa, pre-cleaned using wash procedure B.

40 ml amber, open top screw cap with PTFE faced silicone septa, pre-cleaned using wash procedure B with 15ml of methanol.

40 ml amber, open top screw cap with PTFE faced silicone septa, pre-cleaned using wash procedure B with Hydrochloric Acid.

20ml clear, open top screw cap with PTFE faced silicone septa, pre-cleaned using wash procedure B.

6.6) Each instrument has its own specific software, and thus has its own computer to run the instrument. All GC and GCMS instruments acquire data and run methods by *ChemStation* software. The data files are processed through *Chom Peak Review.* The laboratory-wide LIMS system is *TALS.*

7) Reagents and Standards

The following items are recommended for performing this procedure. Equivalent items should only be used when they result in an improvement in quality, efficiency, productivity, or cost. An item can be considered equivalent if with its use, the analytical and QA/QC requirements in this SOP can be met.

If alternate vendors are used, if the vendor changes the product or if the laboratory makes a procedural change, standard and reagents concentrations may change. If concentrations change, then the volumes used to prepare these must change accordingly.

Standards are stored in a refrigerator at > 0.0°C but <6.0°C, unless otherwise noted.

7.1) Methanol (CH_3OH) – purge and trap grade.

7.2) Reagent water - ASTM Type II is required.

7.2.1) ASTM Type I is produced using a reverse osmosis pretreatment unit equipped with a series of resin cartridges.

7.3) Stock Standard Solutions - Purchased as Unleaded Gasoline, Absolute Standard Unleaded gasoline 87 Octane-MTBE (PT#71358) or equivalent. Stored at 0-6^{o}C in sealed ampules.

7.4) Secondary Standard Solution - Purchased as Unleaded Gasoline, Restek- Unleaded gasoline 87 Octane-MTBE (PT#730081) or equivalent, as long as it is from a different provider than the Primary source. Stored at 0^{o}C or colder in sealed ampules.

7.5) All standard inventories are controlled and verified on a monthly basis to ensure all standards required are available and used before expiration.

7.6) Any standard/reagent that comes with a Certificate of Analysis must be scanned into TALS.

7.7) Proper labeling of standards including a TALS ID, received date, expiration date, and opened/prepared date.

7.8) Must check all standards for expiration dates on a specific timeframe.

7.9) **STANDARD PREPARATION**

Proper standard preparation is performed by using clean, dry, microliter syringes for the transferal of the appropriate volumes of the primary standard solutions into the volumetric flasks. When dispensing the concentrates into the flasks, the needle of the syringe must be totally immersed in the liquid. Once all appropriate concentrations have been spiked, the flask must be slowly inverted three times only. Agitation of the liquid must be avoided. The liquid in the neck of the flask is discarded and the remaining solution is used to fill the corresponding containers. When filling VOA vials, care shall be taken to not allow any air bubbles to be trapped in the vial when screwing on the cap. All quality control and calibration standards shall have the description, concentration, unique TALS ID, preparation date, and expiration date labeled. All spiking standards (surrogate or matrix) shall be labeled with the description, concentration, unique TALS ID, preparation date and expiration date. The unique TALS ID, date of preparation, analyst initials, concentrations, amount spiked, final volume, and the type of standard are recorded. Additionally the lot number and expiration date of the standard are recorded.

7.9.1) Calibration Standards – Prepare a minimum of five standards from the gasoline source or standard in 50mL volumetric flasks. One of the standard concentrations must be ≤ the practical quantitation limit. The other standards should cover the linear working range of the instrument. Concentrations are typically prepared at 50, 100, 200, 250, 500, 1000 and 2000ug/L. The gasoline and the surrogate compounds will be prepared at varying concentrations, as noted above. The marker compounds are used to bracket the applicable range so they will remain a single concentration, 50ug/L, in the calibration and QC standards. The calibration standards are prepared in reagent water and stored in serum vials with no headspace and must be labeled as to the description, concentration, unique TALS ID, preparation date and expiration date. The calibration standards are not stable and should be used immediately.

7.9.2) Continuing Calibration Verification (CCV) – The CCV is prepared as needed. The CCV is prepared using the primary source standard. The contents of the ampule are transferred into a 2ml vial and are stored in the freezer. It is prepared in 50mL volumetric flasks and stored in 40mL vials at 0-6^{o}C with no headspace for up to 7 days. The CCV will be prepared at a mid level concentration respective to the initial calibration, usually 250 or 500ug/L. They will contain the gasoline, the markers and the surrogate.

7.9.3) Laboratory Control Sample (LCS) Quality Control Standards – The LCS is prepared as needed. The LCS is purchased as separate (different) source standards. The contents of the ampule are transferred into a 2ml vial and are stored in the freezer. It is prepared in 100mL volumetric flasks and stored in 40mL vials at 0-6^{o}C with no headspace for up to 7 days. The LCS will be prepared at a mid level concentration respective to the initial calibration, usually 250 or 500ug/L. They will contain the gasoline, the markers and the surrogate.

7.9.4) Surrogate Solution - The surrogate 2,5-Dibromotoluene is purchased as a certified concentrate in methanol. This is prepared in methanol and stored in a serum vial or a spiking container at 0-6^{o}C and must be labeled with the description, concentration, unique LIMS ID, preparation date, and expiration date.

7.9.5) Matrix spiking solution – The LCS standard will be used as the matrix spiking solution. Samples are spiked directly into the sample matrix vial and stored in 40mL vials with no headspace.

8) Sample Collection, Preservation and Storage

8.1) Water samples via Method 5030C.

8.1.1) All samples for VOC analysis should be collected in pre-cleaned 40-ml VOA vials that have been acidified with hydrochloric acid to a pH of less than 2.0 to prevent biological degradation of aromatic compounds.

8.1.2) The container must be filled completely with the liquid sample so that there are no air bubbles present. The PTFE side of the silicone septa should be against the liquid. Once closed, the sample should not be opened until time of analysis.

8.1.3) All samples are to be iced or refrigerated and maintained at 0-6^{o}C until analysis time.

8.1.4) Collect at least three VOA vials from each location. Properly collected samples may be stored up to 14 days before analysis.

8.1.5) A reagent trip blank should accompany each batch of water samples.

8.2) Soil Samples Method 5035A Compliant.

8.2.1) Samples should be collected in 40ml VOA vials containing 15ml of purge and trap grade methanol provided by Eurofins Environmental.

8.2.2) During collection approximately 15 grams of soil must be added to the pre-measured, pre-weighed methanol vial. All sediment must be removed from the glass threads of the vial to ensure an adequate seal.

8.2.3) Samples should always be collected in duplicate to cover for breakage and or laboratory quality control re-analysis.

8.3) Oily waste samples

The collection of oily samples depends on knowledge of the waste and its solubility in methanol.

8.3.1) If the oily waste is known to be soluble in methanol, collect the sample in accordance with the technique noted for high concentration soils.

8.3.2) If the solubility of the oily waste is not known and cannot be field tested, the sample should be collected in a vial without a preservative. Fill the container as full as possible in order to minimize volatile compound loss in the headspace.

8.3.2.1) Please do not cover the tare weight with your sample identification label.

8.3.2.2) Store samples on ice at 0-6°C until transport to the laboratory facility.

8.3.2.3) A third VOA vial (40ml) must be collected for screening and dry weight determination. This third vial must not contain any sample preservation solution.

8.4) Collection for Laboratory extracted soils.

8.4.1) Fill container as full as possible without any air spaces.

8.4.2) Remove all materials on the vial threads and top of vial to ensure proper seal. PTFE faced septa must seat against glass to prevent loss of volatile compounds.

8.4.3) Refrigerate at 0-6°C until analysis.

8.4.4) Soil samples must be extracted within 14 days of collection date.

8.4.5) Methanol extracts of soils must be refrigerated at 0-6°C and may be held up to 14 days before analysis. Soils collected from Massachusetts may be held up to 28 days before analysis.

8.5) Once samples are received at the laboratory, they are "logged in" by the sample department, assigned a laboratory specific identification number, and are stored in refrigerators before analysis. During the log-in procedure, all information about the sample is entered into the Laboratory Information Management System (TALS). The client sample identification, analyses requested and collection date and time are entered. Once the entry is complete samples are assigned an identification number, which aids in tracking the samples. Samples are then distributed to the appropriate departments depending on the analyses requested. Samples for VOC analyses are stored in a refrigerator specified for VOC samples only and are organized in numerical order for ease of tracking. The "original" and "duplicate" vials for each work order are kept in the same box.

8.6) Samples are kept refrigerated until the work has been "validated". They are then removed from the refrigerator, put in a box labeled with the disposal date, and kept in the sample staging area for an additional 30 days. Samples are disposed of after those 30 days unless otherwise specified for return to the client.

9) Quality Control

9.1) On a daily basis the instruments are cleaned appropriately (see cleaning procedure in section 4). A method blank and four quality control samples (opening CCV, LCS, LCS duplicate and closing CCV) are analyzed with each batch. A matrix Spike, duplicate and / or matrix spike duplicate will be analyzed as well with each batch. An opening CCV for one batch may serve as the closing CCV for another batch if the batches are run simultaneously. The CCV must be analyzed every 12 hours. The CCV sample and the method blank must be analyzed before any samples can be analyzed to ensure that the system is free from any contamination and to prove that the continuing calibration is acceptable. Preparation of these standards is described in section 7. Batch method blanks and LCSs must be matrix specific. Aqueous and drinking water batches will use HCL preserved vials for method blanks and prepared LCSs. High level soil batches must spike methanol which is extracted from a clean sand matrix into the blanks and LCSs representing a 1:50 dilution. (2mL methanol for a 100mL volumetric flask.)

9.2) The CCV must meet GC performance standards and must demonstrate a percent drift / percent difference (%D) of ≤20% for all target compounds and ranges.

9.3) Criteria for the LCS and LCS duplicate are achieving acceptable recovery within the upper and lower limits for each individual compound. Results of every LCS and LCS duplicate are entered into the TALS for each batch and reviewed by the management reviewer and validator and Quality Control Department. Please refer to the Comprehensive Quality Control Manual for specifics on the charting and recording of daily quality control results.

9.4) Surrogate recoveries are set at 70-130%. At a minimum, when surrogate recovery from a sample, blank or QC sample is less than 70% or more than 130%, check calculations to locate possible errors, check the fortifying standard solution for degradation, and check changes in instrument performance. (See section 9.4.1 for further elaboration.)

9.4.1)
This criteria is based on the Massachusetts CAM documentation. Sample re-analysis is required in the following situation:

9.4.1.1) If one surrogate is not in compliance, re-analysis for confirmation is required. The MADEP CAM requirements are as follows.

- Note the non-compliance in the case narrative.
- If re-analysis confirms original analysis, report both results.
- If re-analysis is within holding time and does not confirm and all surrogates pass, report only the re-analysis.
- If re-analysis is performed outside of holding time and all surrogates pass, report both analysis.
- If sample is re-analyzed due to a complex matrix, or not re-analyzed due to obvious interference the chromatogram must be provided with the report.

9.4.1.2) Exceptions to re-analysis.

- Obvious interference present (complex matrix).
- For MEOH preserved samples, re-analysis is not required if % moisture >25 and recovery is > 10%.
- If one surrogate exhibits high recovery and target analytes are not detected in sample.

9.5) It is the responsibility of all department members along with the manager or assistant to assess daily QC standards and method blanks. If QC measurements are not within acceptable ranges, the

analyst must flag the data and notify the department manager. The data must be run with an acceptable set of quality control standards, if flagged compounds were detected in samples that were analyzed on that particular instrument. In the case of out-of-control situations the department manager must notify the QA department. The situation must be documented in the run logbook. The department manager then will recommend and initiate corrective action for that specific situation. Below is a general troubleshooting guide for unacceptable results:

9.5.1) Method blank fails (any method analytes are above MDL)

1. Clean tube, bake trap and column, rerun blank
2. Check DI water for contamination
3. Check surrogate solution for contamination

9.5.2) QC check fails (method analytes fall outside of acceptable recoveries)

1. Rerun QC
2. Prepare fresh QC
3. Calibrate instrument

9.5.3) Daily quality control checks, other than running the system blank, CCV, LCS and MB are:

- One matrix spike sample is analyzed for every 20 samples run (as requested).
- One duplicate sample or matrix spike duplicate is analyzed for every 20 samples run (as requested).
- Trip and Field blanks are submitted at the discretion of the client.

9.6) Please refer to section 10.5 for troubleshooting and section 11.3 for information regarding unacceptable data results and sample reruns and duplicates. In instances where analyst error occurs, a corrective action report (CAR) documenting the problem is submitted by the department manager or the Quality Assurance Department. A response from the department manager indicating corrective actions is returned to the QA Department. Department members who do not follow SOP and / or method guidelines will be subject to disciplinary action which may result in verbal, written warnings and / or termination of employment and may be held responsible for legal recourse.

9.7) **DATA MANAGEMENT AND RECORDS**

Please refer to the Quality Assurance Manual, *QM-QM49163* for laboratory-wide data management.

Record keeping within the VOC Department includes information specific to analysts and instrumentation, such as Department methodology, Standard Operating Procedures, precision and

accuracy studies, MDL studies, LOD, LOQ, calibrations, and instrument and sequence logbooks. The MDL study for each method and instrument are stored on the F drive, as are the precision and accuracy records performed by each analyst. IT manages periodic back-up of folders that stores this information on the F drive.

Additionally, all calibration curves are store electronically in Chorm and filed according to instrument. Completed logbooks for instrument sequences are labeled with beginning and end date and instrument and filed with the Quality Assurance officer in chronological order. (Refer to the electronic logbook SOP.)

9.7.1)
All corrections made in any record or document pertaining to the analytical process **must** be in accordance with the following NELAC requirement: "Entries in records shall not be obliterated by methods such as erasures, overwritten files or markings. All corrections to record-keeping errors shall be made by one line marked through the error. The individual making the correction shall sign (or initial) and date the correction. These criteria also shall apply to electronically maintained records."

The original bench sheet with handwritten weights and the weighing analyst's initials will be retained and submitted with the finalized bench sheet.

10) Procedure

On a daily basis, each department prints from the TALS software a backlog, which indicates all samples that have not yet been analyzed. Listed in the backlog report are laboratory and client ID's, collection date, analysis due date, and analysis requested. By reviewing the backlog, the analyst knows which samples to analyze during that day and can also avoid letting any samples pass their holding time by observing the collection dates.

10.1) Sample Preparation

Once a sample sequence has been determined by use of the backlog, a bench sheet is generated and the samples are taken from the refrigerator and placed in the laboratory. Samples must warm to room temperature before being analyzed. The analyst compares information on the bench sheet with the information on the labels of the samples to ensure that the laboratory and client ID's, collection date and time, and analysis requested are the same. Any discrepancies are relayed to the sample department for correction. In addition, the sample integrity is inspected and the analyst then advances the prep-batch to 2nd level review in confirmation of accuracy. Proper container letters will be traced through the sample bench sheet and in the TALS. A pH reading is taken as each sample is loaded or after it has been analyzed and the result is recorded in the TALS prep-batch. In the event that any sample has an insufficient preservation recorded the analyst will check the pH of the remaining vials. If it is found that duplicate vials have a sufficient pH, the analyst will reanalyze the vial that has been properly preserved according to method criteria. For soil samples, once they are batched, the analyst will spike the surrogate into the methanol in the vials and label the vials with a sticker indicating surrogate is added.

10.1.1) Water samples

10.1.1.1) Screening may be performed on aqueous samples to determine if a dilution is required on the sample. A duplicate vial will be utilized if submitted. This is done by setting the sample to run at a 1:50 dilution and examining the resulting data to determine the dilution needed.

10.1.1.2) The dilution factor should be selected so that the method analyte with the highest concentration in the sample would be 60 to 80% of the highest calibration standard. In certain cases where the sample contains a high level of non-method analytes or area, especially high boiling point compounds, the sample should be diluted enough to prevent system contamination. Similarly, any soapy or frothy samples will require being diluted at time of loading to avoid damage to the trap, column, and detectors during analysis.

10.1.1.3) Once aqueous samples are batched, pulled from the refrigerator, warmed to room temperature, they are to be loaded onto the auto-sampler in the order specified in the sequence. Surrogate for aqueous samples are added directly from the autosampler (1uL of a 250ppm surrogate stock for the Eclipse autosampler and 5uL of a 50ppm surrogate stock for the EST Centurion autosampler).

10.1.1.4) The samples requiring dilutions that are to be analyzed on an auto-sampler unit will be prepared in 50mL volumetric flasks and mixed with the appropriate volume of reagent water to reach a final volume of 50mL. The diluted samples are transferred to 40mL serum vials with no headspace and are analyzed in the sequence run.

10.1.1.5) Typical dilutions are as follows in Table 4:

Dilutions in volumetric flasks

Desired Dilution	Amount of Sample	Amount of DI Water
"Straight"	5.0 ml	0.0 ml
1:5	20 ml	80 ml
1:10	10 ml	90 ml
1:20	5 ml	95 ml
1:25	4 ml	94 ml
1:50	2 ml	98 ml
1:100	1 ml	99 ml
1:200	500 ul	99.5 ml
1:250	400 ul	100 ml
1:500	200 ul	100 ml

Desired Dilution	Amount of Sample	Amount of DI Water
1:1000	100 ul	100 ml
1:2000	50 ul	100 ml
1:2500	40 ul	100 ml
1:5000	20 ul	100 ml

10.1.1.6) When handling samples and standards containing VOCs, it is especially important to carry out the procedure as quickly as possible to avoid possible loss of analytes. Once a water sample has been opened to manually load into the sparge vessel or to prepare a dilution, a pH reading is taken. For samples that were analyzed without a dilution on an auto-sampler unit, the pH reading is taken after the aliquot has been removed from the vial. The results are recorded in the sequence logbook and in the TALS system if required.

10.1.2) Soil sediment & product solid samples

10.1.2.1) Once soil samples are batched, pulled from the refrigerator, warmed to room temperature and weighed, surrogate is spiked into the methanol vials. If the methanol vial is 15mL then 15uL of a 2500ppm ampule of surrogate spike is added. If the methanol vial is 5mL then 5uL of the ampule is added. TALS accounts for the sample dilution when calculating the final recovery of the surrogate. After this spiking by the analyst occurs, the methanol vial is labeled with a sticker.

10.1.2.2) If additional vials are submitted then a duplicate vial will also be spiked with a matrix spiking solution in addition to the surrogate spike. In a 15mL methanol, spike 75uL of a 2500ppm ampule which results in varying concentrations spiked. After this spiking by the analyst occurs, the methanol vial is labeled with an additional sticker denoting matrix spike has been added.

10.1.2.3) The bench sheets will reflect surrogate 1 as being the soil surrogate that is spiked into the methanol vials via pre-prep.

10.1.3) Soil Samples - Extraction

Soil samples that are not field extracted are laboratory extracted in methanol prior to being analyzed by the purge and trap method. All samples must be brought to room temperature before performing extractions. After extraction, the extract solutions are introduced to the GC via SW846 5035A. The following outlines the soil extraction procedure.

10.1.3.1) Compare the label of the soil container with the information on the sample bench sheet.

10.1.3.2) Indicate on the TALS bench sheet the date of extraction, analyst's initials, the FID and PID reading, and nature of the sample (soil, clay or oil).

10.1.3.3) Gently mix the contents to insure a homogeneous sample, care should be taken as to not agitate the sample which could result in loss of VOC analytes. Clean balance dish as required using horsehair brush.

10.1.3.4) Once mixed, ensure that the sample is of a homogeneous nature. Note an excess of extraneous material (rocks, twigs, vegetation, or other) in the comment section of the VOC soil extraction bench sheet.

10.1.3.5) Add about 15 grams (1:1 ratio) of the homogeneous sample in a 40ml vial, equipped with a Teflon lined cap and containing 15ml of purge and trap grade methanol.

10.1.4) Field Extracted Soil Samples (Methods 5035A)

Field extracted samples are collected in methanol.

Note: All methanol extracts of soils must be run at a dilution. All methanol extracts are run at a minimum of 1:50. The pre-screen FID/PID results will give an indication as to what the dilutions shall be. All extracted soil samples must be warmed to room temperature and weighed before loading in order to determine the weight of the soil. The sample is weighed and the weights are recorded in the logbook and on the bench sheet. The analyst shall record in the logbook: the vial weight, the soil and vial weight and the calculated soil weight in grams. The original bench sheet with handwritten weights and the weighing analyst's initials will be retained and submitted with the finalized bench sheet. If the container was previously weighed the analyst will defer to the original weight reading and not reweigh the vial. The final bench sheet will only reflect the calculated soil weight in grams.

10.1.5) Composite Samples

10.1.5.1) Manual compositing

Flask Compositing:

In the flask compositing procedure, a 100mL flask or a non-reactive glass container is used for compositing samples. The compositing must be done in a narrow-mouth flask submersed in an ice bath. The individual samples, maintained at 0-6°C, are slowly poured into the flask. The flask is swirled slowly to mix the individual grab samples. After mixing, multiple aliquots of the composited sample are poured into VOA vials and sealed for subsequent analysis. An aliquot can also be poured off into a syringe for immediate analysis.

10.2) Procedure of Loading a Sample.

10.2.1) Check label of sample container with the sample bench sheet and initial to confirm accuracy.

10.2.2) Bring the sample to room temperature.

10.2.3) Soil Samples: Add surrogate directly into the methanol of the sample.

- If surrogate is out of range the sample will be reanalyzed.
- If duplicate vials are received, a new vial will be spiked and analyzed for high or low surrogate concentration.

10.2.4) Aqueous samples only: Invert the VOA vial gently to mix any DNAPLs and LNAPLs so that an accurate representation of the sample will be used for analysis.

10.2.5) Samples requiring no dilution on auto-sampler system: Load the samples onto the autosampler in the order that corresponds to the sequence log.

10.2.6) Samples requiring dilution on auto-sampler system: Fill a 50mL volumetric flask part way with deionized water. Using a gas tight dilution syringe, withdraw a portion of the sample to rinse the syringe and discard. Repeat three times. Withdraw the appropriate volume of sample (without air bubbles) and inject under the surface of the water. Bring the flask up to volume with DI water. Cap and gently invert no more than 3 times. Slowly pour off the contents into 40mL septa vials and screw the cap on leaving no headspace. Label the diluted vial with the sample ID and dilution factor.

10.2.7) The pH reading of the aqueous sample is taken and recorded in TALS. In the event that any sample has insufficient preservation recorded the analyst will check the pH of the remaining vials. If it is found that duplicate vials have a sufficient pH, the analyst will reanalyzed the vial that has been properly preserved according to method criteria.

10.2.8) Each instrument has its own sequence injection logbook in which the instrument position, TALS identification number, dilution, and analysis are recorded. This information is recorded as each sample is loaded into the system, and samples are loaded in the order in which they will run. Logbooks must clearly indicate the order in which samples were analyzed. Sequence logbooks will be reviewed and initialed daily. Management will review logbooks on a regular basis to ensure compliance with the SOP. Logbooks are printed daily and scanned biannually. Refer to the electronic logbook SOP for more detailed information and instructions for scanning procedures.

10.3) Instrument Set Up

A sequence file and worklist for the day must be generated, indicating the specific instrument and the corresponding date. All data correlating to a batch will be sent to this file. The QC / Sample information is then entered into the computer software and a sequence run is downloaded. The sampler introductory unit is set to run the sequence by entering the starting position and the ending position numbers (ie., position 1 through 16). The appropriate analysis methods shall be selected on both the GC software and the autosampler system (OI Eclipse & EST Centurion).

10.4) **CALIBRATION**

Calibration maintains the accuracy of the instrumentation over an extended period of time. Each instrument must provide adequate results for the calibration to meet acceptance criteria. Once an initial calibration for all method analytes has been established, a continuing calibration check and a laboratory control sample are analyzed with each analytical batch to ensure the quality of the calibration. Instruments are recalibrated after major maintenance, or upon recurrent failure of any daily CCV or LCS check.

10.4.1) Calibration Standards

A minimum of five standard solutions must be prepared to construct a calibration curve. The concentration range of these solutions must bracket the linear working range of the instrument. See "standard preparation" for procedure. Surrogate is added to the calibration at varying concentrations so that the working range of the surrogate is equal to the working range of the range. Markers are added to the calibration standards at a single concentration.

Calibrations must be run as a 'single event', meaning points cannot be rerun and added after the calibration has run. If a point is to be dropped from the middle of the curve due to a poor purge, the entire point is discarded. Points may be dropped from the beginning or end of the calibration but it may affect the reporting limits of the curve.

10.4.2) Calibration Analysis

Analyze the standards as normal samples would be analyzed. Examine the resulting chromatograms for the following parameters:

10.4.2.1) Assure that peaks are symmetrical in shape and that tailing is minimized. If irregularities are observed, appropriate troubleshooting may be necessary (see instrument operation manual).

10.4.2.2) Assure that peak identification software can recognize each analytical peak in its respective retention time window and make correct tentative identifications.

10.4.2.3) The integration for GRO C6-C10 will be as follows: sum the areas of all peaks eluting between

2-Methylpentane and 1,2,4-Trimethylbenzene. Using the resulting data, the multi-point calibration curve must be generated by entering the areas for the range at its respective concentration.

10.4.3) Initial Calibration Acceptance Criteria

The curve for the surrogate or carbon range must have adequate relative standard deviations (RSD) of ≤ 20% on an average fit or correlation coefficient that is ≥ 0.990 on a linear regression for the calibration to be accepted. Quadratic regression is not allowed. If regression is used, curve must not be forced through the origin, and must have a %RSE of ≤ 20% . These values will be calculated by CHROM. If the calibration fails these parameters, instrument maintenance and a new calibration must be performed.

An Initial Calibration Verification (ICV) must be analyzed using a second source standard different than that of the calibration standards. The ICV is a mid-range concentration of the method analytes or range. The target compounds and carbon ranges must recover between 80%-120% of the spiked concentration.

Low calibration verification (LCV) need to be verified for each analyte with each calibration. This is done automatically by the Chrom Software as a % error. The percent error for each analyte should be <30%. If LCV criteria is not met for a specific reporting level, than the reporting level for the analyte should be raised to the level which it does pass the <30% criteria for or the next LCV concentration will be made reportable in addition to the initial LCV concentration demonstrating the high bias.

10.5) **TROUBLESHOOTING AND MAINTENANCE**

10.5.1) Troubleshooting within the lab is performed for reasons such as instrument malfunction, unacceptable quality control results or unacceptable/unexpected data results. For instrument malfunction, the analyst is encouraged to refer to instrument manuals and, if necessary, contact a service technician. Please refer to the Quality Control and Assurances section 9 for troubleshooting of unacceptable quality control results.

10.5.2) In instances of unacceptable or unexpected data results, the analyst must investigate all areas of possible problem. If the results of a sample that was run in duplicate do not match, the analyst must first double check the labels on each vial to ensure all information is correct, including client and laboratory identification. This will determine if there was a mislabeling by the client, or a mis-numbering of the laboratory identification by the log-in analyst. The pH of each vial shall be checked also, as a sample that is not preserved may produce inaccurate results.

10.5.3) It may be determined that a sample contains false positive results from a previous highly contaminated sample by checking instrument logbooks. Each analyst records in the logbook when a highly contaminated sample has been analyzed.

10.5.4)
Instrument maintenance must be preformed on a regular basis. Maintenance should include but is not limited to:

GC – Clean injector, replace septum, glass liner, and gold seal. Check all gas connections, check and / or change carrier gas filters, and inspect and service capillary column.

Purge and Trap concentrators / Auto Samplers – Perform preventive maintenance (PM) and replace traps, lines, and spargers as needed.

11) Calculations/Data Reduction

11.1) As mentioned in the sample preparation and analysis section, sequences are created on each instrument and downloaded at the beginning of each sample run. Data files are created within the sequence and allow data to be written to them as each sample is acquired. Each data file is named for the laboratory identification number that is assigned to it at time of log in. Once the sample has completed its run, the analyst can then recall the file, process the raw data, and calculate the results from the raw data that is generated for each data file.

11.2) During the processing of the raw data, the analyst checks for any cross contamination that may have occurred during the run. If a sample was run after a highly contaminated sample and results in low level contaminants it will be flagged as questionable, and the sample will be rerun.

11.3) Samples containing levels of contamination above the calibration range are rerun at a dilution to bring the contaminants into the calibration range. The over range contaminants are flagged, then both results are reported. Similarly, samples that were run at a dilution and have results below detection limit are rerun at a lower dilution to bring the compounds within the calibration range. Here only the lower dilution is reported.

11.4) Calculations used in quantifying the results to the analyses are based on dilution factor, and sample weight. However, all dilution factors, sample weights, and injected amounts are assumed to be at a constant of one when downloading the sequence into the software. The purpose of this is to easily monitor the detected raw concentrations of the compounds found in the samples, and to ensure that those concentrations do not exceed the upper limits of the calibration curve.

11.5) Calculating the calibration factor (CF)

For the external standard calibration, the CF determines the relationship between the detector response and the analyte and collective range concentrations.

11.5.1) The CF for target analyte is calculated by using the following formulas.

Equation 1: CF = area of peak/concentration purged (ug/L)

Equation 2: Percent Relative Standard Deviation (%RSD) = (Stand Dev of a minimum 5 CFs/Mean of 5 CFs)x100

11.5.2) Calculating the collective CF for each hydrocarbon range of interest.

Equation 3: Range CF = Area summation of range components /Total concentration purged (ug/L)

11.5.2.1) Area of GRO C6-C10 from the FID is the area between 2-Methylpentane and 1,2,4-Trimethylbenzene

11.5.3) For GRO the RSD must be ≤ 20%.

11.6) Calculating the Percent Difference (%D) for daily Continuing Calibration checks (CCC). If the %D exceeds the ±20% recurrently, as determined by Equation 4, a new calibration must be performed. The percent difference for GRO must be ±20%.

Equation 4: Percent Difference (%D) = ((CF avg - CF ccc)/CF avg)x100

Where: CF avg = Average CF calculated from initial calibration.

CF ccc = CF calculated from continuing calibration standard.

11.7) The following equation is used to calculate the actual concentrations of constituents found in a liquid sample. The raw data generated by the software is used:

Equation 5: Aqueous Samples: Target Analyte Conc Analyte (ug/L) = (Ax)(D)/(CF)

Equation 6: Aqueous Samples: Hydrocarbon Range Conc HC Range (ug/L) = (Ax)(D)/(Range CF)

Where: Ax = Response for the analyte or hydrocarbon range in the sample.

D = Dilution factor

CF = Average Calibration Factor for Target VPH Analyte

Range CF = Average Calibration Factor for hydrocarbon range.

11.8) For solid samples, the calculation is as follows:

Equation 7: Methanol extracted samples: Target Analyte
Conc Analyte (ug/kg)=(Ax)(Vt)(D)(Vw)/(Vi)(Wd)(CF)

Equation 8: Methanol extracted samples; Hydrocarbon Range
Conc HC Range (ug/kg) = (Ax)(Vt)(D)(Vw)/(Vi)(Wd)(Range CF)

Where: Ax, CF, Range CF and D have the same definition for aqueous samples, and

Vt = Total volume of methanol extract, adjusted for % moisture, in mL

Vw = Volume of reagent water used for purge and trap analysis, in uL

Vi = Volume of methanol extract added to reagent water for purge and trap analysis, uL

Wd = Dry weight of sample, g and is obtained by the following equation:
(% Solid /100)(g of extracted sample)

11.9) Calculating the Percent Solid of a Sample

After weighing out the sample to determine the dry weight, the percent solid of the sample is calculated by dividing the dry weight by the wet weight. An example of the percent solid calculation is shown below.

Ex.
Wet weight = 11.9530g
Dish = 1.0561g
Final wet weight = 10.8969g
Dry weight = 9.3036g
Dish = 1.0561g
Final dry weight = 8.2475g

$$\frac{\text{Dry weight}}{\text{Wet weight}} = \frac{8.2475}{10.8969} \times 100 = 75.7\%$$

11.10) Manual integration

11.10.1) Manual integration is often used when interpreting GC/PID/FID data due to the need for manual integration of carbon range areas. When individual peaks need to be manually integrated an automated program will capture the graphics of the peak before and after manual integrations. The CHROM software will retain all records of manual integration, before and after. Along with the before and after chromatograms the analyst must pick one of the specific reasons listed below to explain why

the manual integrations was necessary. This information will be reflected when printing the report. See the Chrome software for a list of manual integration reasons.

11.10.2) All manual integration or peak to peak integration is performed from valley to valley and will be reviewed by management for concurrence and approval in accordance with the Manual Integration Standard Operating Procedure.

11.11)
% RSE Calculation:

To calculate RSE you need to know:

1. The true concentration of each calibration standard. This is x_i
2. The measured concentration of each calibration standard. This is x'_i
3. The number of standard levels in the curve. This is n
4. The type of curve (average, linear or quadratic) the type of curve determines the value of p. For an average curve, p=1, for linear p=2 and quadratic p=3

$$\%RSE = 100 \times \sqrt{\sum_{i=1}^{n} \frac{\left[\frac{x'_i - x_i}{x_i}\right]^2}{n-p}}$$

12) Method Performance

12.1)
Method performance is expressed through method detection limits. They are performed as a demonstration of capability during initial installation and yearly precision and accuracy studies. Typically all MDL studies achieve a PQL of 1.0ppb for most target compounds (see table 2 under Scope and Application).

Precision and Accuracy studies achieve an average percent recovery between 70-130%.

12.2) MDL studies are performed in accordance with the most recent version of SOP *NE-QA-QAS-SOP49199*. Initial MDL studies are performed when a new instrument is installed or undergoes major maintenance. Quarterly data collection is performed thereafter. Please refer to the SOP *NE-QA-QAS-SOP49199*, Establishment and Reporting of Detection Limits for specific details.

12.3) Limit of Detection (LOD) verification is performed for DOD sample analysis and is defined as an

estimate of the minimum amount that an analytical process can reliably detect. Prior to use, MDL values are verified quarterly by preparing an LOD at a concentration no more than 3 times the MDL for single analyte tests, no more than 4 times the MDL for multiple analyte tests and no greater than the RL. The LOD is acceptable if it produces a peak at least 3 times above the instrument's noise level. If a response is not acceptable or detected, the concentration of the failing analyte shall be increased until an acceptable response is observed, however, it should not exceed the reporting limit. If the LOD verification fails due to lack of detection, then the laboratory must perform and pass two consecutive LOD verifications at the higher spike concentration. LOD verifications are analyte, matrix, extraction method, clean-up technique and instrument configuration specific. If LOD verifications are not performed on all combinations, the laboratory must base the verification on the "worst case basis" by including all applicable clean-up techniques. Surrogates are required to be included in this study as well. Surrogates must be spiked at the lowest Initial Calibration concentration. The LOD verifications are logged in by QA on a quarterly and/or annual basis. Specific clients may require LOD verifications be spiked no greater than 1 to 2 times the MDL value. Departments may choose to designate specific instruments to analyze samples for these specific clients.

12.4) Limit of Quantitation (LOQ) is performed for DOD sample analysis and is defined as the minimum concentration of an analyte/compound that can be reported with a specified degree of confidence or the lowest concentration that produces a quantitative result within specified limits of precision and bias. LOQ is set at or above the concentration of the lowest initial calibration standard. Eurofins New England defines the LOQ = RL. The LOQs are analyzed once per analysis, matrix and extraction method. The LOQ may also serve as ongoing demonstration of capability of analyst. A minimum of four consecutive replicates are analyzed at a concentration of the lowest initial calibration standard on a quarterly and/or annual basis; however, LOQ may be analyzed as high as 2 times the reporting limit.

12.5) P&A is an annual requirement for each analyst and is an ongoing demonstration of their capability. As mentioned above the LOQ can also serve as the P&A, however each analyst performing the method must demonstrate capability on an annual basis. If an LOQ was not performed by an analyst, then four LCS spikes must be entered into the P&A demonstration of capability form to calculate the P&A recovery within the method limits. For analytical methods that don't have LCS spikes, blind proficiency tests can serve as ongoing capability.

12.6) Select clients may require a Precision and Accuracy study be performed on all syringes either quarterly or bi-annually.

12.7) Regardless of prior experience, all analysts will begin work at Eurofins Environment Testing on a 3-month training/probation period, during which time they will work very closely with experienced analysts. They will learn daily operating procedures, the fundamentals of gas chromatography and mass spectrometry, sample preparation, analysis, and processing, in addition to routine maintenance of their instrument. For current qualifications and resumes, please refer to Eurofins New England's Quality Assurance Manual, *QM-QM49163*.

13) Pollution Control

It is Eurofins' policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the NBLSC Environmental Health & Safety Manual (*NDSC-US EHS-QP46060*) for "Waste Management and Pollution Prevention" and the New England EH&S Manual (NE-EHS-HS-SOP54687).

14) Waste Management

Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in accordance with all federal and state laws and regulations. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to New England's Chemical Hygiene Plan, NE-EHS-HS-SOP49232.

15) References

SW846 EPA Method 5030C, "Purge-and-trap for aqueous samples", Revision 3, May 2003

SW846 EPA Method 8015D, "Nonhalogenated Organics Using GC/FID", Revision 4, June 2003

Department of Defense QSM, most current revision.

16) Method Modifications

None

17) Attachments

APPENDIX A - OPERATING CONDITIONS FOR FID/PID INSTRUMENTS

18) Revision History

Changes to current revision:
Section 11.11 Added calculation for % RSE

Rev. 5: 6/12/24
Section 4.2.2: Changes Section 13 to Section 9.5.1
Sections 5 and 13: Changed NDSC to NBLSC
Section 6.1: Updated the autosampler, concentrator and trap information for GC/FID/PID (FID1)
Sections 7.3 and 7.4: Updated standard information and storage conditions
Section 7.6: Changed Element to TALS
Sections 7.9.2 and 9.1: Changed Continuing Calibration Check (CCC) to Continuing Calibration Verification (CCV)
Sections 7.9.2, 7.9.3, 7.9.4, 8.1.3, 8.3.2.2, 8.4.3, 8.4.5 and 10.1.5.1: Changed 4°C to 0-6°C
Section 8.2.1: Changed Spectrum Analytical to Eurofins Environmental
Sections 9.1 and 9.5.1: Changed system blank to method blank
Section 9.3: Removed reference to Appendix B

Section 9.5.3: Added MB
Section 9.6: Changed Section 10 to Section 10.5 and Section 11 to Section 11.3
Sections 9.8 and 10.1.3.6: Removed Sections
Section 10.1.1.3: Added the EST Centurion autosampler
Section 10.3: updated autosampler types
Section 10.4.3: Clarified the types of calibration curve allowed and acceptance criteria
Section 12.2: Added reference to SOP *NE-QA-QAS-SOP49199*, Establishment and Reporting of Detection Limits for MDL determination
Sections 12.3 and 12.4: Added that LODs are determined for DOD sample analysis

Rev. 4: 2/22/23
Throughout SOP: Sections renumbered/combined and/or re-ordered; changed Spectrum to Eurofins
Section 1: Added the last paragraph about modifications to the SOP
Section 3: Added definitions for TALS & NCM
Section 5: Added text referring to NDSC & laboratory Health & Safety Manuals
Sections 5.1.1 and 5.1.2: Added first paragraph
Sections 5.1.5, 5.1.6, 5.2, 5.3, 5.4, 5.5 and 5.6: Added new Sections to Safety Section
Sections 6 and 7: Added paragraph about equivalent items
Sections 13 and 14: Added new text
Section 16: Added new Section
(Old) Section XII.6: TRC check removed

Rev.3; 1/29/22
Updated all references to LIMs, and Element to TALS and Chrom
Updated the equipment list and operating conditions of FID2

Rev. 2; 2/9/21
Section XXIII,A,3,d – Clarification of soil handling and preparation procedure.

Rev. 1; 4/3/20 – New SOP created.

19) Appendix

APPENDIX A
OPERATING CONDITIONS FOR FID/PID INSTRUMENTS
FID-1

TABLE A. Purge and trap (method no.1)

Purge ready temp = 35^{0}C	Bake time = 2.00 min
Purge time = 11.00 min	Bake temp = 270^{0}C
Dry purge time = 1.00 min	Line temp = 150^{0}C
Desorb preheat = 245^{0}C	Valve temp = 150^{0}C
Desorb time = 1.00 min	
Desorb temp = 250^{0}C	
Sample drain = On	

TABLE B. GC method no. 1
Total Flow 24.5 Ml/min
total run time = 31.83
valve split on injector 1 = 220^{0}C
PID temp = 230^{0}C
FID temp = 230^{0}C

Oven temp 1 = 40^{0}C	Hold Time= 2.0 min	Ramp rate 1 = 3.0^{0}C/min
Oven temp 2 = 65^{0}C	Hold Time 2 = 0 min	Ramp rate 2 = 10.0^{0}C/min
Oven temp 3 = 240^{0}C	Hold Time 3 = 10 min	

FID-2

TABLE A. Purge and trap (method no.1)

Purge ready temp = 35^{0}C	Bake time = 2.00 min
Purge time = 11.00 min	Bake temp = 270^{0}C
Dry purge time = 1.00 min	Line temp = 150^{0}C
Desorb preheat = 245^{0}C	Valve temp = 150^{0}C
Desorb time = 1.00 min	
Desorb temp = 250^{0}C	
Sample drain = On	

TABLE B. GC method no. 1
Total Flow 24.5 Ml/min
total run time = 31.83
valve split on injector 1 = 220^{0}C
PID temp = 230^{0}C
FID temp = 230^{0}C

Oven temp 1 = 40^{0}C	Hold Time= 2.0 min	Ramp rate 1 = 3.0^{0}C/min
Oven temp 2 = 65^{0}C	Hold Time 2 = 0 min	Ramp rate 2 = 10.0^{0}C/min
Oven temp 3 = 240^{0}C	Hold Time 3 = 10 min	

QM-QM49163 Quality Assurance Manual
NDSC-US-EHS-QP46060 Environmental Health and Safety (HSE) Manual
NE-QA-QAS-SOP49199 Establishment and Reporting of Detection Limits

End of document

eurofins	Always check on-line for validity. **Analysis of Gasoline Range Organics (GRO) C6-C10**	Level: **Standard Operating Procedure**
Document number: **NE-ORG-GC-SOP49315**		
Old Reference: **60.005**		
Version: **6**		Organisation level: **4-Business Unit**
Approved by: **BAA3, HFO2, SBB9** Effective Date: **08-AUG-2024**	Document users: **EENE_SEMIs, EENE_VOAs**	Responsible: **EENE_QA**

Version history

Version	Approval	Revision information	
4	16.FEB.2023		
5	12.JUN.2024		
6	08.AUG.2024		

Appendix D – Soil Boring and Monitoring Well Installation Logs

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-101**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/5/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **11.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.3 ppm	N/A	Dark Brown fine to coarse SAND, some Silt and fine to medium Gravel, trace coarse Gravel. Dry, loose, no stain/odor.		Standpipe/ Concrete
	2-4	N/A	1.2 ppm		Brown fine to medium SAND, some coarse Sand and fine to medium Gravel, trace Silt and coarse Gravel and coal pieces and scrap metal. Dry, loose, no stain/odor.	Sample: MW-101 (2-4)	No. 2 Sand
	4-5	N/A	1.4 ppm		Dark Brown fine to medium SAND, some coarse Sand and fine to medium Gravel, trace Silt and coarse Gravel and coal pieces. Dry, loose, no stain/odor.		PVC Riser
5	5-7	5/24"	0.3 ppm		Dark Brown medium to coarse SAND, some fine Sand and fine to coarse Gravel, trace Silt. Dry, loose, no stain/odor.		Bentonite
	7-9	7/24"	0.4 ppm				
10	9-11	10/24"	0.5 ppm		Orange to Brown fine SAND and SILT, some medium to coarse Sand, trace fine Gravel. Moist, dense, no stain/odor.	Water Table at 11.0 fbg	No. 2 Sand
	11-13	24/24"	0.2 ppm		Orange and Light Brown (stratified) fine to coarse SAND and SILT, trace fine Gravel. Saturated, no stain/odor.		PVC Screen
	13-15	24/24"	0.0 ppm		Light Brown medium to coarse SAND, some fine Sand and Silt. Saturated, no stain/odor.		
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-102**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/9/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **9.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.3 ppm	N/A	Dark Brown fine to coarse SAND, some Silt and fine to medium Gravel, trace coarse Gravel and fine Cobbles. Dry, loose, slightly cohesive, nonplastic. No stain/odor.	Sample: MW-102 (0-2)	Standpipe/ Concrete
	2-4	N/A	1.2 ppm		Orange-Brown fine to medium SAND, some Silt and coarse Sand, trace fine to medium Gravel. Dry, dense, cohesive, nonplastic. No stain/odor.		No. 2 Sand
	4-5	N/A	1.4 ppm		Orange-Brown fine to coarse SAND, trace fine to medium Gravel and Silt. Dry, loose, slightly cohesive, nonplastic. No stain/odor.		PVC Riser
5	5-7	10/24"	0.2 ppm		Dark Brown to Orange medium to coarse SAND, some fine Sand, trace Silt and fine Gravel. Dry to moist, no stain/odor.		Bentonite
	7-9	11/24"	0.6 ppm			Water Table at 9.0 fbg	
10	9-11	18/24"	0.7 ppm		Orange to Brown medium to coarse SAND, some fine Sand and fine to medium Gravel, trace Silt and coarse Gravel. Saturated, no stain/odor.		No. 2 Sand
	11-13	24/24"	2.1 ppm		Brown to Gray fine SAND and SILT, some medium to coarse Sand, trace fine Gravel. Saturated, no stain/odor.		PVC Screen
	13-15	24/24"	3.0 ppm			Sample: MW-102 (13-15)	
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

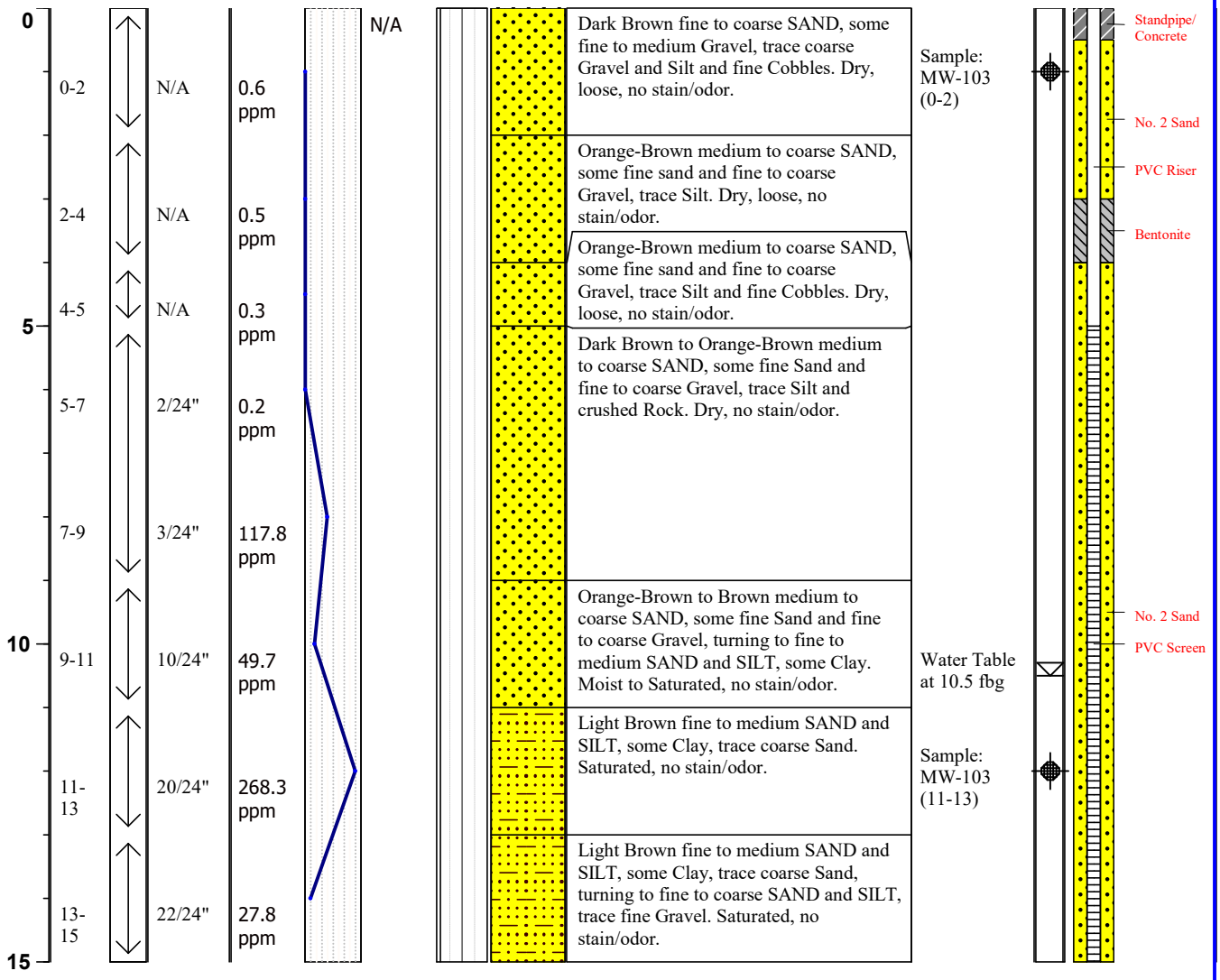
Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-103**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024 & 12/11/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/11/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **10.5 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-104**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024 & 12/11/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/11/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **6.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	2.4 ppm	N/A	Brown fine to medium SAND, some Silt and fine Gravel, trace medium to coarse Gravel. Dry, loose, no stain/odor.	Sample: MW-104 (0-2)	Standpipe/ Concrete; No. 2 Sand; PVC Riser; Bentonite
	2-4	N/A	0.0 ppm		Light Brown to Brown fine SAND and SILT, trace medium to coarse Sand. Dry, dense, cohesive, nonplastic. No stain/odor.		
5	4-5	N/A	0.0 ppm		Brown fine SAND and SILT, trace medium to coarse Sand. Moist to saturated, no stain/odor.	Water Table at 6.0 fbg	
	5-7	8/24"	0.0 ppm		Gray-Brown fine SAND and SILT, trace medium to coarse Sand. Saturated, no stain/odor.	Sample: MW-104 (7-9)	No. 2 Sand; PVC Screen
	7-9	10/24"	1.0 ppm		Gray-Black fine SAND and SILT, trace medium to coarse Sand. Saturated, no stain/odor.		
10	9-11	10/24"	0.6 ppm		Light Brown fine SAND and SILT, some medium Sand, trace coarse Sand and fine Gravel. Saturated, no stain/odor.		
	11-13	20/24"	0.4 ppm				
	13-15	18/24"	0.3 ppm				
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-105**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024 & 12/11/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/11/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **9.5 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.8 ppm	N/A	Dark Brown fine to medium SAND, some Silt and organic material, trace coarse Sand and fine Gravel. Dry, loose, non-cohesive, non-plastic. No stain/odor.	Sample: MW-105 (0-2)	Standpipe/ Concrete
	2-4	N/A	1.9 ppm		Brown fine to medium SAND, some Silt, trace coarse Sand and fine Gravel. Dry, dense, moderately cohesive, non-plastic. No stain/odor.		No. 2 Sand
	4-5	N/A	2.6 ppm		Reddish-Brown fine to medium SAND, some Silt, trace coarse Sand and fine Gravel. Dry, dense, moderately cohesive, non-plastic. No stain/odor.		PVC Riser
5	5-7	13/24"	0.0 ppm		Reddish-Brown fine to medium SAND, some Silt, trace fine Gravel and coarse Sand. Dry to moist, no stain/odor.		Bentonite
	7-9	12/24"	0.0 ppm			Water Table at 9.5 fbg	
10	9-11	23/24"	0.0 ppm		Reddish-Brown to Light Brown fine to medium SAND, some Silt, trace fine Gravel and coarse Sand, turning to fine SAND and SILT, some medium to coarse Sand. Moist to Saturated, no stain/odor.	Sample: MW-105 (9-11)	No. 2 Sand
	11-13	24/24"	0.0 ppm		Light Reddish-Brown fine to coarse SAND and SILT, trace fine to medium Gravel. Saturated, no stain/odor.		PVC Screen
	13-15	24/24"	0.0 ppm				
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-106**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024 & 12/11/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/11/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **6.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	1.6 ppm	N/A	Dark Brown fine to coarse SAND, some fine to medium Gravel, trace Silt and coarse Gravel and fine Cobbles. Dry, loose, non-cohesive, non-plastic. No stain/odor.	Sample: MW-106 (0-2)	Standpipe/ Concrete; No. 2 Sand
	2-4	N/A	1.2 ppm		Dark Brown fine to coarse SAND, some fine to medium Gravel, trace Silt. Dry, loose, non-cohesive, non-plastic. No stain/odor.		PVC Riser; Bentonite
5	4-5	N/A	3.3 ppm		Dark Brown fine to coarse SAND and SILT, some fine to coarse Gravel. Moist to saturated, no stain/odor.	Water Table at 6.0 fbg	
	5-7	7/24"	0.0 ppm		Orange medium to coarse SAND, some fine Sand and Silt, trace fine to coarse Gravel. Saturated, no stain/odor.		No. 2 Sand; PVC Screen
	7-9	8/24"	0.0 ppm				
10	9-11	10/24"	0.3 ppm			Sample: MW-106 (9-11)	
	11-13	8/24"	0.2 ppm		Gray-Brown fine SAND and SILT, some medium Sand, trace coarse Sand and fine Gravel. Saturated, no stain/odor.		
	13-15	11/24"	0.1 ppm		Light Brown fine SAND and SILT, some medium Sand, trace coarse Sand and fine Gravel. Saturated, no stain/odor.		
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-107**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/9/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **15.0 fbg.**	Depth to Water: **11.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.8 ppm	N/A	Brown coarse SAND and fine to coarse GRAVEL, some fine to medium Sand, trace coal pieces and Silt. Dry, loose, non-cohesive, nonplastic. No stain/odor.	Sample: MW-107 (0-2)	Standpipe/ Concrete
	2-4	N/A	1.0 ppm		Reddish-Brown fine to medium SAND, some coarse Sand and Silt, trace fine to medium Gravel. Dry, dense, moderately cohesive, nonplastic. No stain/odor.		No. 2 Sand
	4-5	N/A	0.5 ppm		Reddish-Brown to Brown fine to coarse SAND, some Silt and fine to medium Gravel, trace coarse Gravel and fine Cobbles. Dry, loose, noncohesive, nonplastic. No stain/odor.		PVC Riser
5	5-7	18/24"	0.2 ppm		Brown to Gray medium to coarse SAND, some fine to coarse Gravel, trace fine Sand and Silt, turning to Crushed Rock. Dry, no stain/odor.		Bentonite
	7-9	16/24"	0.4 ppm		Gray to light brown medium to coarse SAND, trace fine Sand and Silt and fine to coarse Gravel. Dry, no stain/odor.		
10	9-11	10/24"	0.1 ppm		Light brown medium to coarse SAND, trace fine Sand and Silt and fine to coarse Gravel, turning to brown fine to coarse SAND, some Silt, trace fine to medium Gravel. Moist, no stain/odor.	Water Table at 11.0 fbg	No. 2 Sand
	11-13	16/24"	0.0 ppm		Brown fine to coarse SAND, some Silt and crushed Rock, trace fine to coarse Gravel. Saturated, no stain/odor.		PVC Screen
	13-15	17/24"	0.8 ppm			Sample: MW-107 (13-15)	
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **MW-108**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/5/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **N/A**
Total Depth: **18.0 fbg.**	Depth to Water: **14.0 fbg**	Backfill Material: **N/A**
Refusal Depth: **18.0 fbg**	Auger Flights ID/ OD: **2-in.**	Abandonment Completion Date: **N/A**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.9 ppm	N/A	Dark Brown fine to coarse SAND, some organic material and fine to coarse Gravel, trace Silt and fine Cobbles. Dry, loose, no stain/odor.	Sample: MW-108 (0-2)	Standpipe/ Concrete
	2-4	N/A	2.7 ppm		Brown fine to medium SAND, some coarse Sand and Silt and fine to medium Gravel, trace coarse Gravel and fine Cobbles. Dry, loose, slightly cohesive, nonplastic. No Stain/odor.		No. 2 Sand
5	4-5	N/A	0.0 ppm		Orange-Brown fine to medium SAND, some Silt, trace coarse Sand and fine to medium Gravel. Dry, dense, moderately cohesive, nonplastic. No stain/odor.		PVC Riser
	5-7	7/24"	0.0 ppm		Brown to Orange fine to medium SAND, some coarse Sand, trace Silt and fine Gravel. Dry, no stain/odor.		Bentonite
	7-9	10/24"	0.0 ppm		Orange to Gray fine to coarse SAND, some fine Gravel, trace Silt and medium Gravel. Dry, no stain/odor.		
10	9-11	8/24"	0.0 ppm		Orange to Brown fine to coarse SAND, some fine Gravel, trace Silt and medium Gravel. 2" of coal pieces at 12 fbg. Dry to moist, no stain/odor.		
	11-13	6/24"	0.0 ppm			Water Table at 14.0 fbg	No. 2 Sand
	13-15	8/24"	0.0 ppm		Brown to Black coarse SAND, some fine to medium Sand and fine to medium Gravel, trace Silt and coarse Gravel. Moist to saturated, stain, no odor.		PVC Screen
15					Black to Brown coarse SAND, some fine to medium Sand and fine to medium Gravel, trace Silt and coarse Gravel, turning to crushed ROCK. Saturated, stain, no odor.	Sample: MW-108 (13-15)	
	15-18	20/36"	0.0 ppm				

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

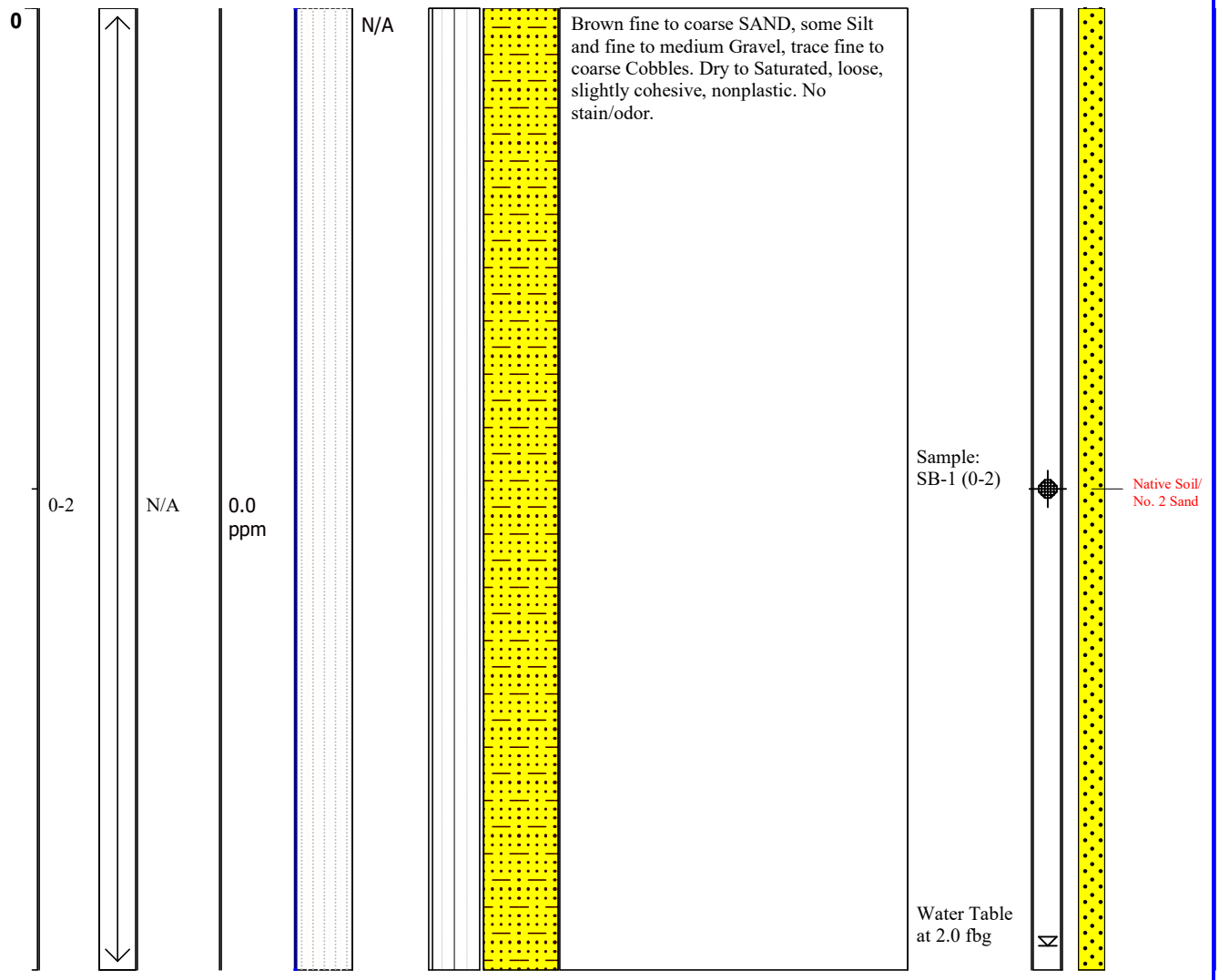
Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-1**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/5/2024**	Split Spoon/Acetate Sleeve Dia: **N/A**
Drilling Company: **GeoLogic**	Completion Date: **12/5/2024**	Split Spoon/Acetate Sleeve Length: **N/A**
Drill Operator: **N/A**	Drilling Method: **N/A**	Soil Classification System: **Burmister**
Drill Rig Type: **N/A**	Sampling Method: **Hand Auger**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **2.0 fbg**	Depth to Water: **2.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/5/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.0 ppm	N/A	Brown fine to coarse SAND, some Silt and fine to medium Gravel, trace fine to coarse Cobbles. Dry to Saturated, loose, slightly cohesive, nonplastic. No stain/odor.	Sample: SB-1 (0-2) Water Table at 2.0 fbg	Native Soil/ No. 2 Sand



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

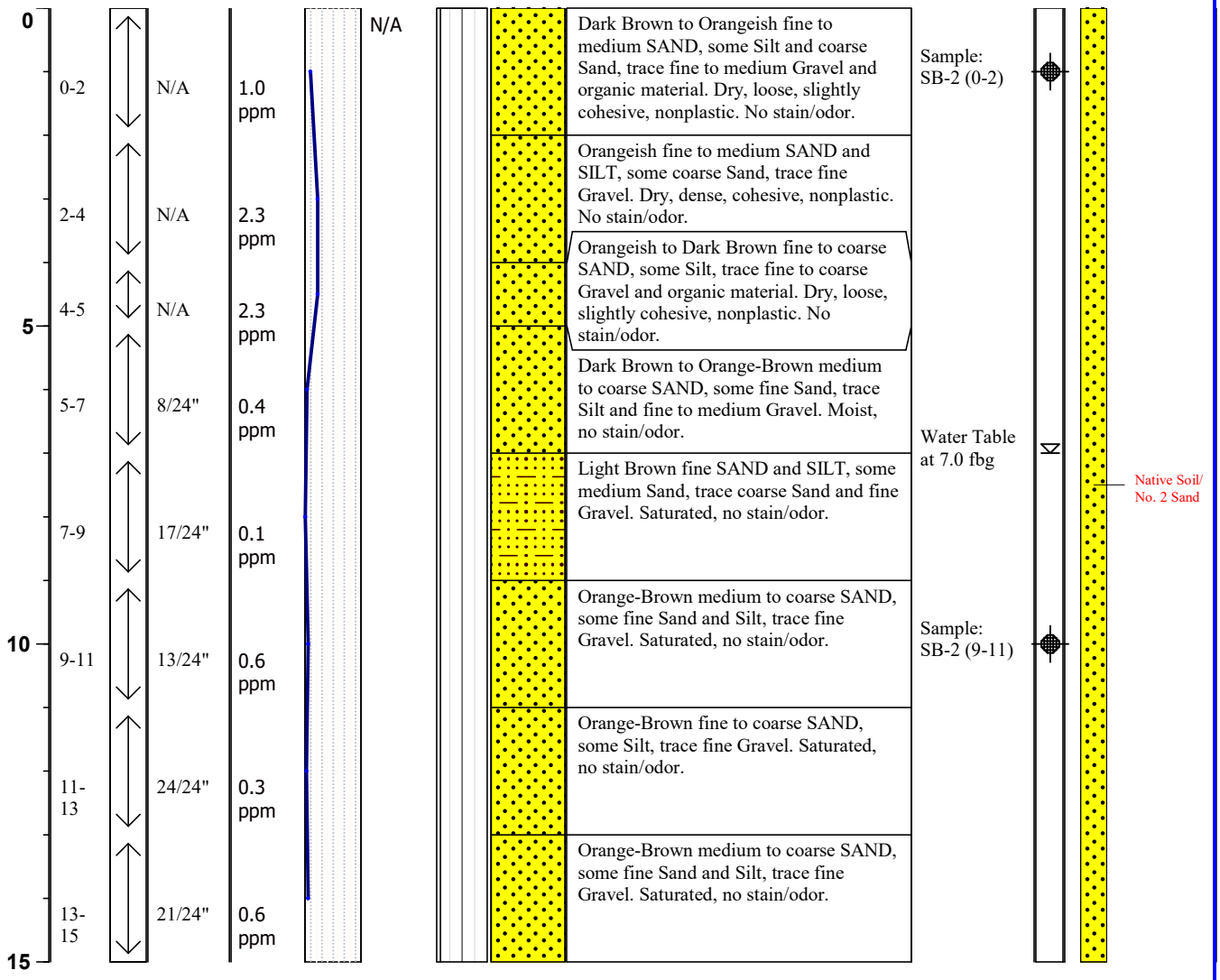
Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-2**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/9/2024 & 12/12/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/12/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **15.0 fbg**	Depth to Water: **7.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/12/2024**



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-3**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024 & 12/12/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/12/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **15.0 fbg**	Depth to Water: **10.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/12/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	1.4 ppm	N/A	Reddish-Brown fine to medium SAND, some coarse Sand and Silt, trace fine to coarse Gravel and fine Cobbles. Dry, dense, cohesive, nonplastic. No stain/odor.	Sample: SB-3 (0-2)	
	2-4	N/A	1.6 ppm		Orange fine to medium SAND and SILT, some coarse Sand, trace fine Gravel. Dry, dense, cohesive, nonplastic. No stain/odor.		
5	4-5	N/A	0.7 ppm		Reddish-Brown medium to coarse SAND, some fine Sand and fine to coarse Gravel, trace Silt and fine Cobbles. Dry, loose, slightly cohesive, nonplastic. No stain/odor.		
	5-7	12/24"	1,021 ppm		Orange-Brown medium to coarse SAND, some fine Sand and Silt, trace fine to coarse Gravel. Dry, no stain/odor.		
	7-9	15/24"	2,203 ppm			Sample: SB-3 (7-9)	Native Soil/ No. 2 Sand
10	9-11	20/24"	371.1 ppm		Light Brown fine SAND and SILT, some Clay, trace medium to coarse Sand. Moist to Saturated, no stain/odor.	Water Table at 10.0 fbg	
	11-13	24/24"	5.7 ppm		Brown fine to coarse SAND, some Silt, trace fine to medium Gravel. Saturated, no stain/odor.		
	13-15	24/24"	0.4 ppm		Light Brown fine SAND and SILT, some Clay, trace medium to coarse Sand. Saturated, no stain/odor.		
15							

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-4**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/9/2024 & 12/12/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/12/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **15.0 fbg**	Depth to Water: **9.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/12/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.7 ppm	N/A	Reddish-Brown fine to medium SAND, some Silt and coarse Sand, trace fine to medium Gravel and coal/charcoal pieces. Dry, dense, moderately cohesive, nonplastic. No stain/odor.	Sample: SB-4 (0-2)	
	2-4	N/A	6.1 ppm		Orange-Brown fine to medium SAND, some Silt and coarse Sand, trace fine Gravel. Dry, dense, cohesive, nonplastic. No stain/odor.		
	4-5	N/A	5.3 ppm		Orange-Brown fine SAND and SILT, some medium Sand, trace coarse Sand and fine Gravel. Dry, dense, soft, cohesive, nonplastic. No stain/odor.		
5	5-7	8/24"	0.9 ppm		Brown medium to coarse SAND, some fine Sand and Silt, trace fine to coarse Gravel. Dry, no stain/odor.		
	7-9	14/24"	0.6 ppm		Light Brown medium to coarse SAND, some fine Sand and Silt, trace fine to coarse Gravel. Moist, no stain/odor.	Water Table at 9.0 fbg	Native Soil/ No. 2 Sand
10	9-11	21/24"	0.0 ppm		Brown medium to coarse SAND, some fine Sand and Silt, trace fine to coarse Gravel. Saturated, no stain/odor.		
	11-13	18/24"	0.3 ppm		Dark Brown fine to coarse SAND, some Silt and fine Gravel, trace medium to coarse Gravel. Saturated, no stain/odor.		
15	13-15	22/24"	1.5 ppm		Orange-Brown fine to coarse SAND, some Silt and fine Gravel, trace medium to coarse Gravel, turning to fine SAND and SILT, trace medium to coarse Sand. Saturated, no stain/odor.	Sample: SB-4 (13-15)	

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

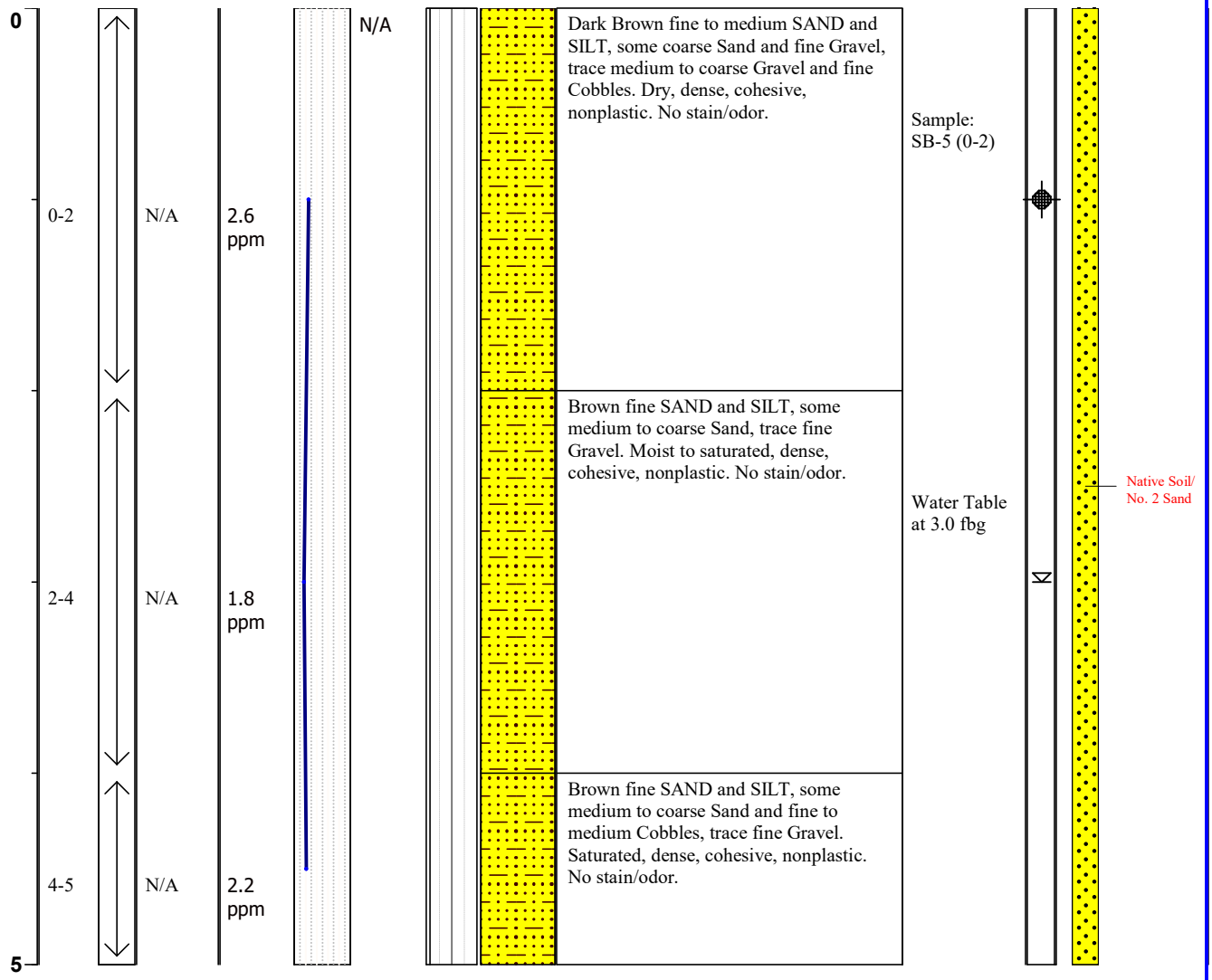
Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-5**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024**	Split Spoon/Acetate Sleeve Dia: **N/A**
Drilling Company: **GeoLogic**	Completion Date: **12/6/2024**	Split Spoon/Acetate Sleeve Length: **N/A**
Drill Operator: **N/A**	Drilling Method: **N/A**	Soil Classification System: **Burmister**
Drill Rig Type: **N/A**	Sampling Method: **Hand Auger**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **5.0 fbg**	Depth to Water: **3.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/6/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	2.6 ppm	N/A	Dark Brown fine to medium SAND and SILT, some coarse Sand and fine Gravel, trace medium to coarse Gravel and fine Cobbles. Dry, dense, cohesive, nonplastic. No stain/odor.	Sample: SB-5 (0-2)	Native Soil/ No. 2 Sand
	2-4	N/A	1.8 ppm		Brown fine SAND and SILT, some medium to coarse Sand, trace fine Gravel. Moist to saturated, dense, cohesive, nonplastic. No stain/odor.	Water Table at 3.0 fbg	
	4-5	N/A	2.2 ppm		Brown fine SAND and SILT, some medium to coarse Sand and fine to medium Cobbles, trace fine Gravel. Saturated, dense, cohesive, nonplastic. No stain/odor.		
5							



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-6**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/5/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **6.5 fbg**	Depth to Water: **Not Encountered**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/10/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1:100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	0.5 ppm	N/A	Dark Brown fine to coarse SAND, some Silt and fine to coarse Gravel, trace fine Cobbles. Dry, dense, moderately cohesive, nonplastic. No stain/odor.	Sample: SB-6 (0-2)	
	2-4	N/A	0.6 ppm		Dark Brown fine to medium SAND, some coarse Sand and Silt and fine Gravel, trace medium to coarse Gravel and fine Cobbles. Dry, loose, noncohesive, nonplastic. No stain/odor.		Native Soil/ No. 2 Sand
	4-5	N/A	1.4 ppm		Dark Brown fine to medium SAND, some coarse Sand and Silt and fine Gravel, trace medium to coarse Gravel and fine Cobbles. Asphalt pieces noted. Dry, loose, noncohesive, nonplastic. No stain/odor.		
5	5-6.5	12/24"	1.9 ppm		Brown to Gray medium to coarse SAND, some fine Sand and fine to coarse Gravel, trace Silt, turning to crushed Rock. Dry, no stain/odor.	Sample: SB-6 (5-6.5)	

Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

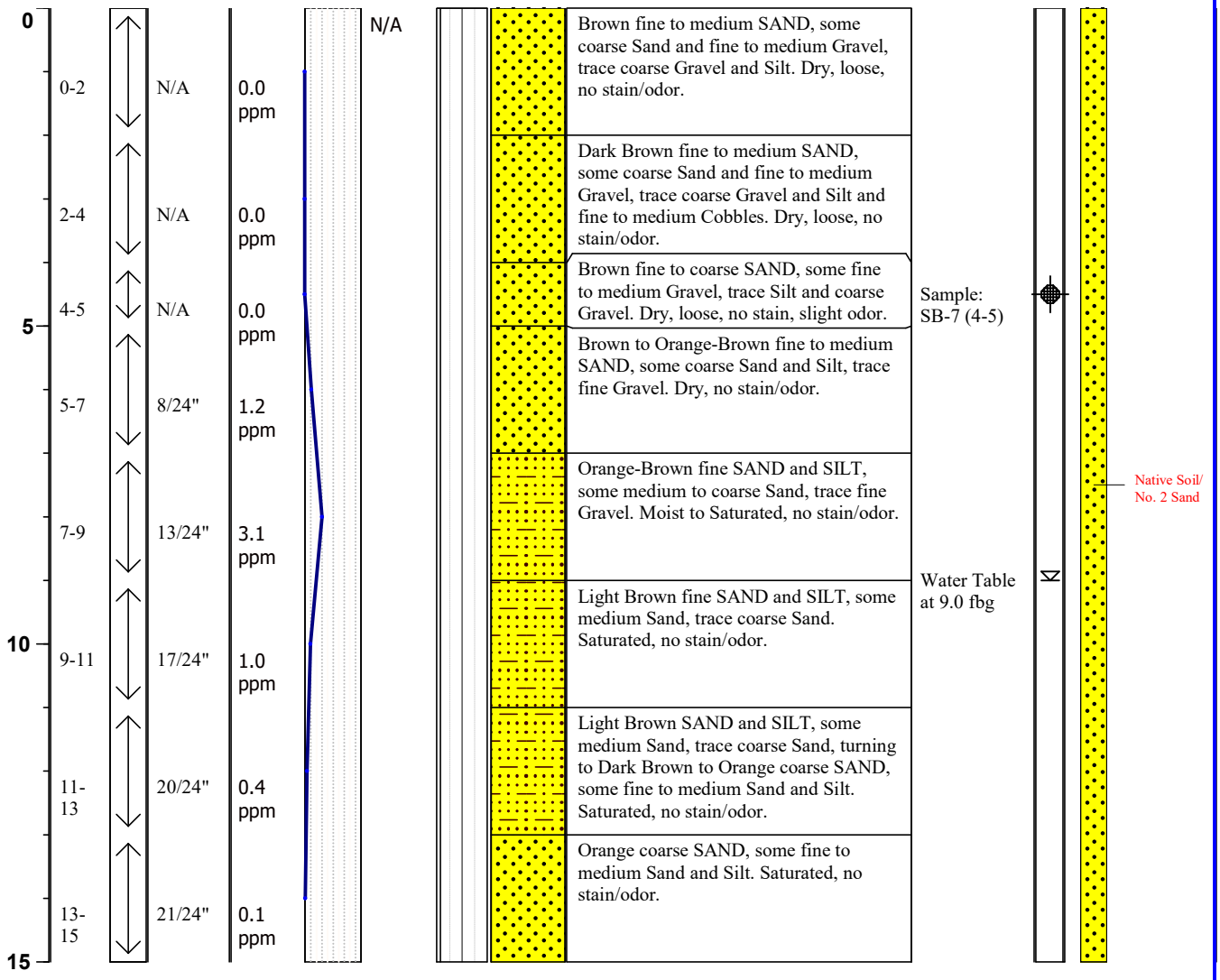
Apparent Water Level
Lab Sample Location

Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-7**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/5/2024 & 12/10/2024**	Split Spoon/Acetate Sleeve Dia: **2-in.**
Drilling Company: **GeoLogic**	Completion Date: **12/10/2024**	Split Spoon/Acetate Sleeve Length: **5-ft.**
Drill Operator: **Taylor Grenier**	Drilling Method: **Direct Push**	Soil Classification System: **Burmister**
Drill Rig Type: **Geoprobe 7822DT**	Sampling Method: **Acetate Sleeve**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **15.0 fbg**	Depth to Water: **9.0 fbg**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/10/2024**



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

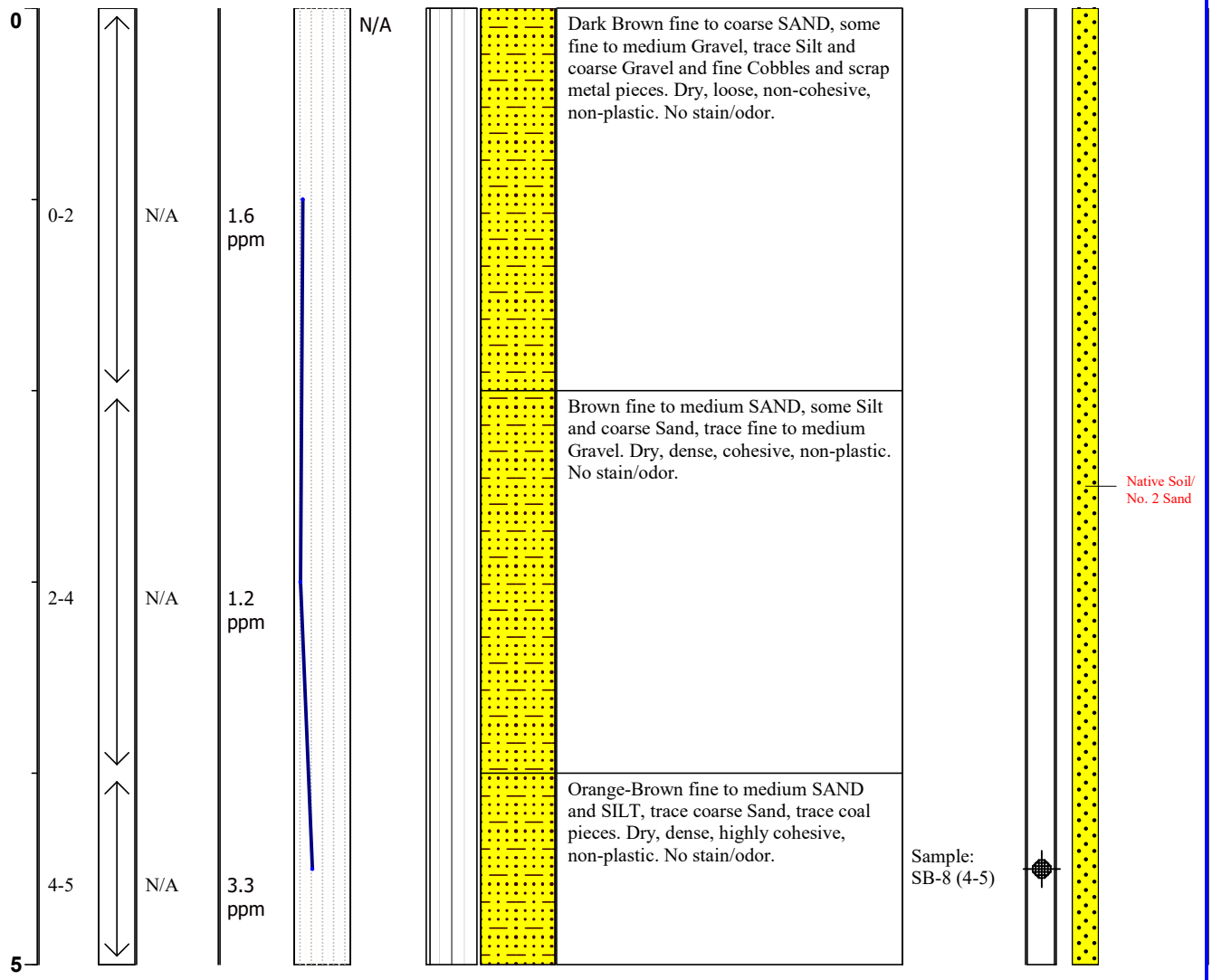
Soil Boring Log

Groundwater & Environmental Services, Inc.

ID NO. **SB-8**

Project: **Potter Hill Westerly**	Client: **RIDEM**	Regulatory Case #: **N/A**
Address: **198 Potter Hill Rd, Westerly, RI**	GES Job #: **1524014**	Regulatory Case Mgr: **Rachel Simpson**
County: **Washington County**	GES Project Mgr: **Joel Walcott**	Permit #: **N/A**
Logged By: **M. Jusino**	Date Drilled: **12/6/2024**	Split Spoon/Acetate Sleeve Dia: **N/A**
Drilling Company: **GeoLogic**	Completion Date: **12/6/2024**	Split Spoon/Acetate Sleeve Length: **N/A**
Drill Operator: **N/A**	Drilling Method: **N/A**	Soil Classification System: **Burmister**
Drill Rig Type: **N/A**	Sampling Method: **Hand Auger**	Field Screening: **PID 10.9 eV Lamp (ppm)**
Borehole Diameter: **3.5-in.**	Surface Elevation: **NM**	Abandonment Method: **Backfill**
Total Depth: **5.0 fbg**	Depth to Water: **Not Encountered**	Backfill Material: **Native Soil/ No. 2 Sand**
Refusal Depth: **Not Encountered**	Auger Flights ID/ OD: **N/A**	Abandonment Completion Date: **12/6/2024**

Depth (ft.)	Sample Interval	Recovery (in.)	Field Screen (ppm) 1:100	Blow Counts 1100	Geologic Description	Comments	Abandonment Detail
0	0-2	N/A	1.6 ppm	N/A	Dark Brown fine to coarse SAND, some fine to medium Gravel, trace Silt and coarse Gravel and fine Cobbles and scrap metal pieces. Dry, loose, non-cohesive, non-plastic. No stain/odor.		Native Soil/ No. 2 Sand
	2-4	N/A	1.2 ppm		Brown fine to medium SAND, some Silt and coarse Sand, trace fine to medium Gravel. Dry, dense, cohesive, non-plastic. No stain/odor.		
	4-5	N/A	3.3 ppm		Orange-Brown fine to medium SAND and SILT, trace coarse Sand, trace coal pieces. Dry, dense, highly cohesive, non-plastic. No stain/odor.	Sample: SB-8 (4-5)	
5							



Proportions Used:

Trace = < 10%
Little = 10-20%
Some = 20-35%
And = 35-50%

Notes:

N/A = not applicable; fbg. = feet below grade
in. = inches; ft.= feet; ppm.= parts per million
Soil Lithologies based on field observations only.
NM= Not Measured
NR = Not Recorded

Blow Count Pentration Resistance:

Consistency (M&C)	Density (G&S)
<2 = Very Soft	0-4 = Very Loose
2-4 = Soft	4-10 = Loose
4-8 = Medium	10-30 = Medium
8-15 = Stiff	30-50 = Dense
15-30 = Very Stiff	50> = Very Dense
>30 = Hard	

Symbols:

Apparent Water Level
Lab Sample Location

Appendix E – Soil Laboratory Analytical Reports

ANALYTICAL REPORT

PREPARED FOR

Attn: Joel Walcott
Groundwater & Environmental Services Inc
508 Thomson Park Drive
Cranberry Township, Pennsylvania 16066

Generated 12/27/2024 9:19:11 AM

JOB DESCRIPTION

GES - RIDEM MPA-48
198 Potter Hill Road, Westerly, RI

JOB NUMBER

620-22848-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

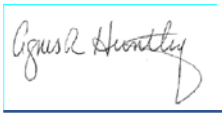
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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12/27/2024 9:19:11 AM

Authorized for release by
Agnes Huntley, Project Manager
Agnes.Huntley@et.eurofinsus.com
(401)267-4374

Table of Contents

Qualifiers

GC/MS VOA

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.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
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.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
F3	Duplicate RPD exceeds the control limit

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
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)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 620-22848-1 Eurofins Rhode Island

Job Narrative
620-22848-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be 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.

Receipt
The samples were received on 12/11/2024 6:46 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 3.2°C and 3.2°C.

GC/MS VOA
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: Due to the dark color and viscosity of the extract, the following samples could not be concentrated to the final method required volume: MW-108 (13-15)-DUP (620-22848-8). The reporting limits (RLs) are elevated proportionately.

Method 8270D: Due to the dark and oily extract, the following samples could not be concentrated to the final method required volume: SB-4 (0-2) (620-22848-1), MW-102 (0-2) (620-22848-3) and MW-101 (5-6) (620-22848-4). The reporting limits (RLs) are elevated proportionately.

Method 8270D: The continuing calibration verification (CCV) associated with batch 620-42595 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCVIS 620-42595/3).

Method 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzidine. The analyte may have a %D >50%.

Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 620-42474 and analytical batch 620-42595 recovered outside control limits for the following analyte: Benzidine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Any detection should be considered an estimate, bias low. Batch precision also exceeded control limits for these analyte. These results have been reported and qualified.

Method 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: MW-102 (13-15) (620-22848-5) and MW-108 (13-15)-DUP (620-22848-8). These results have been reported and qualified.

Method 8270D: The large number of analytes included in the continuing calibration verification (CCV) gives a high probability that one or more analytes will be outside acceptance criteria. As indicated in the reference method, analysis may proceed as long as no more than 10% of the analytes of interest are outside the method-defined %D criteria. Hexachlorocyclopentadiene, N-Nitrosodi-n-propylamine and Bis(2-chloroethyl)ether.

Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 620-42656 and analytical batch 620-42700 recovered outside control limits for the following analyte: Benzidine. Benzidine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Any detection for this analyte is considered an estimate. The analyte recovered within acceptance limits in the CCV. Batch precision also exceeded control limits for these analyte. These results have been reported and qualified.

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

Eurofins Rhode Island

Job ID: 620-22848-1 (Continued) Eurofins Rhode Island

Gasoline Range Organics
Method 8015D_GRO: Surrogate recovery for the following sample was outside control limits: MW-108 (13-15) (620-22848-7). Re-analysis was performed and surrogate recovery was outside control limits.

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

Diesel Range Organics
Method 8015D_DRO: Due to the matrix extract being dark and viscous, the following samples could not be concentrated to the final method required volume: SB-4 (0-2) (620-22848-1), MW-102 (0-2) (620-22848-3), MW-101 (5-6) (620-22848-4) and MW-108 (13-15)-DUP (620-22848-8). The reporting limits (RLs) are elevated proportionately.

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

PCBs
Method 8082A: The continuing calibration verification (CCV) associated with 620-42512 recovered outside the control limits for Tetrachloro-m-xylene on the primary column. Results are confirmed on both columns and reported from the passing confirmation column. The associated samples are: (CCV 620-42512/31) and (CCV 620-42512/48).

Method 8082A: The DCB Decachlorobiphenyl (Surr) surrogate recovery for the following samples was outside acceptance limits on the primary column due to matrix pattern interference: MW-102 (0-2) (620-22848-3), MW-101 (5-6) (620-22848-4) and MW-108 (13-15) (620-22848-7). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method 8082A: Tetrachloro-m-xylene surrogate recovery for the following samples was outside control limits: SB-2 (0-2) (620-22848-2) and MW-102 (0-2) (620-22848-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8082A: The Tetrachloro-m-xylene surrogate recovery for the following sample was outside acceptance limits on the primary column due to matrix pattern interference: SB-4 (0-2) (620-22848-1). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method 8082A: DCB Decachlorobiphenyl (Surr) surrogate recovery for the following sample was outside control limits: SB-4 (0-2) (620-22848-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Metals
Method 7471B: The sample duplicate (DUP) precision for preparation batch 620-42543 and analytical batch 620-42649 was outside control limits. Sample non-homogeneity is suspected.

Method 7471B: The matrix spike duplicate (MSD) recoveries and precision for preparation batch 620-42543 and analytical batch 620-42649 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-4 (0-2) — Lab Sample ID: 620-22848-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	502		377		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	498		377		ug/Kg	1	☼	8270D	Total/NA
Benzoic acid	4880		4710		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	407		377		ug/Kg	1	☼	8270D	Total/NA
C10-C28	710		156		mg/Kg	5	☼	8015D	Total/NA
Arsenic	27.1		2.97		mg/Kg	2	☼	6010D	Total/NA
Chromium	719		1.98		mg/Kg	2	☼	6010D	Total/NA
Copper	157		1.98		mg/Kg	2	☼	6010D	Total/NA
Lead	82.4		2.97		mg/Kg	2	☼	6010D	Total/NA
Nickel	2.06		1.98		mg/Kg	2	☼	6010D	Total/NA
Selenium	7.02		2.97		mg/Kg	2	☼	6010D	Total/NA
Zinc	34.2		5.94		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.0767	F2 F1	0.0523		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SB-2 (0-2) — Lab Sample ID: 620-22848-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzoic acid	1910		986		ug/Kg	1	☼	8270D	Total/NA
C10-C28	61.2		15.7		mg/Kg	1	☼	8015D	Total/NA
PCB-1254	72.5		23.3		ug/Kg	1	☼	8082A	Total/NA
Chromium	11.2		1.91		mg/Kg	2	☼	6010D	Total/NA
Copper	11.7		1.91		mg/Kg	2	☼	6010D	Total/NA
Lead	58.9		2.87		mg/Kg	2	☼	6010D	Total/NA
Nickel	2.80		1.91		mg/Kg	2	☼	6010D	Total/NA
Zinc	75.9		5.74		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.0644		0.0543		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: MW-102 (0-2) — Lab Sample ID: 620-22848-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acenaphthylene	415		372		ug/Kg	1	☼	8270D	Total/NA
Anthracene	904		372		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	2180		372		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	2340		372		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	2120		372		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	1590		372		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	2220		372		ug/Kg	1	☼	8270D	Total/NA
Benzoic acid	5200		4650		ug/Kg	1	☼	8270D	Total/NA
Chrysene	2500		372		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	558		372		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	5170		372		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	1400		372		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	4230		372		ug/Kg	1	☼	8270D	Total/NA
Pyrene	5190		372		ug/Kg	1	☼	8270D	Total/NA
C10-C28	358		44.6		mg/Kg	1	☼	8015D	Total/NA
Chromium	14.5		2.00		mg/Kg	2	☼	6010D	Total/NA
Copper	16.7		2.00		mg/Kg	2	☼	6010D	Total/NA
Lead	723		3.00		mg/Kg	2	☼	6010D	Total/NA
Nickel	3.38		2.00		mg/Kg	2	☼	6010D	Total/NA
Zinc	129		6.00		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.321		0.0558		mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-101 (5-6) — Lab Sample ID: 620-22848-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	413		380		ug/Kg	1	☼	8270D	Total/NA
Acenaphthylene	1800		380		ug/Kg	1	☼	8270D	Total/NA
Anthracene	2040		380		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	3660		380		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	3610		380		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	3440		380		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	2440		380		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	3970		380		ug/Kg	1	☼	8270D	Total/NA
Chrysene	3600		380		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	854		380		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	9200		380		ug/Kg	1	☼	8270D	Total/NA
Fluorene	672		380		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	2270		380		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	6920		380		ug/Kg	1	☼	8270D	Total/NA
Pyrene	7920		380		ug/Kg	1	☼	8270D	Total/NA
C10-C28	462		69.4		mg/Kg	1	☼	8015D	Total/NA
Chromium	5.83		1.92		mg/Kg	2	☼	6010D	Total/NA
Copper	6.20		1.92		mg/Kg	2	☼	6010D	Total/NA
Lead	19.3		2.89		mg/Kg	2	☼	6010D	Total/NA
Nickel	2.96		1.92		mg/Kg	2	☼	6010D	Total/NA
Zinc	52.3		5.77		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: MW-102 (13-15) — Lab Sample ID: 620-22848-5

No Detections.

Client Sample ID: MW-107 (13-15) — Lab Sample ID: 620-22848-6

No Detections.

Client Sample ID: MW-108 (13-15) — Lab Sample ID: 620-22848-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1-Methylnaphthalene	389		76.2		ug/Kg	1	☼	8270D	Total/NA
2-Methylnaphthalene	472		76.2		ug/Kg	1	☼	8270D	Total/NA
Acenaphthylene	86.4		76.2		ug/Kg	1	☼	8270D	Total/NA
Anthracene	209		76.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	446		76.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	345		76.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	345		76.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	221		76.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	324		76.2		ug/Kg	1	☼	8270D	Total/NA
Chrysene	470		76.2		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	107		76.2		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	916		76.2		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	200		76.2		ug/Kg	1	☼	8270D	Total/NA
Naphthalene	427		76.2		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	880		76.2		ug/Kg	1	☼	8270D	Total/NA
Pyrene	993		76.2		ug/Kg	1	☼	8270D	Total/NA
C10-C28	62.5		15.2		mg/Kg	1	☼	8015D	Total/NA
Chromium	3.03		1.98		mg/Kg	2	☼	6010D	Total/NA
Copper	3.42		1.98		mg/Kg	2	☼	6010D	Total/NA
Lead	3.89		2.97		mg/Kg	2	☼	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-108 (13-15) (Continued) — Lab Sample ID: 620-22848-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Nickel	3.62		1.98		mg/Kg	2	☼	6010D	Total/NA
Zinc	23.8		5.93		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: MW-108 (13-15)-DUP — Lab Sample ID: 620-22848-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	542		379		ug/Kg	1	☼	8270D	Total/NA
Acenaphthylene	687		379		ug/Kg	1	☼	8270D	Total/NA
Anthracene	1890		379		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	5060		379		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	5040		379		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	5750		379		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	3600		379		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	4670		379		ug/Kg	1	☼	8270D	Total/NA
Benzoic acid	3230		1870		ug/Kg	1	☼	8270D	Total/NA
Carbazole	1250		948		ug/Kg	1	☼	8270D	Total/NA
Chrysene	6550		379		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	1370		379		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	12200		379		ug/Kg	1	☼	8270D	Total/NA
Fluorene	729		379		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	3300		379		ug/Kg	1	☼	8270D	Total/NA
Naphthalene	515		379		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	10600		379		ug/Kg	1	☼	8270D	Total/NA
Pyrene	12000		379		ug/Kg	1	☼	8270D	Total/NA
C10-C28	393		75.0		mg/Kg	1	☼	8015D	Total/NA
Chromium	16.3		1.75		mg/Kg	2	☼	6010D	Total/NA
Copper	8.42		1.75		mg/Kg	2	☼	6010D	Total/NA
Lead	17.3		2.62		mg/Kg	2	☼	6010D	Total/NA
Nickel	3.18		1.75		mg/Kg	2	☼	6010D	Total/NA
Zinc	33.0		5.24		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 620-22848-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB-4 (0-2)
Date Collected: 12/09/24 08:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-1
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Acetone	ND		69.8		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Acrylonitrile	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Benzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Bromobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Bromochloromethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Bromodichloromethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Bromoform	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Bromomethane	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
2-Butanone (MEK)	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
n-Butylbenzene	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
sec-Butylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
tert-Butylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Carbon disulfide	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Carbon tetrachloride	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Chlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Chloroethane	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Chloroform	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Chloromethane	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
2-Chlorotoluene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
4-Chlorotoluene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2-Dibromo-3-Chloropropane	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Dibromochloromethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2-Dibromoethane (EDB)	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Dibromomethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2-Dichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,3-Dichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,4-Dichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Dichlorodifluoromethane (Freon 12)	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1-Dichloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2-Dichloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1-Dichloroethene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
cis-1,2-Dichloroethene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
trans-1,2-Dichloroethene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2-Dichloropropane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,3-Dichloropropane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
2,2-Dichloropropane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1-Dichloropropene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
cis-1,3-Dichloropropene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
trans-1,3-Dichloropropene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Ethylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Hexachlorobutadiene	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
2-Hexanone (MBK)	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Isopropylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
4-Isopropyltoluene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Methyl tert-butyl ether	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
4-Methyl-2-pentanone (MIBK)	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Methylene Chloride	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Naphthalene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1

Client Sample ID: SB-4 (0-2)
Lab Sample ID: 620-22848-1
Date Collected: 12/09/24 08:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Styrene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1,1,2-Tetrachloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1,2,2-Tetrachloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Tetrachloroethene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Toluene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2,3-Trichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2,4-Trichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,3,5-Trichlorobenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1,1-Trichloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,1,2-Trichloroethane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Trichloroethene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Trichlorofluoromethane (Freon 11)	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2,3-Trichloropropane	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,2,4-Trimethylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,3,5-Trimethylbenzene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Vinyl chloride	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
m,p-Xylene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
o-Xylene	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Tetrahydrofuran	ND		14.0		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Ethyl ether	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Tert-amyl methyl ether	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Ethyl tert-butyl ether	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
di-Isopropyl ether	ND		6.98		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
tert-Butanol	ND		140		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
1,4-Dioxane	ND		140		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
trans-1,4-Dichloro-2-butene	ND		34.9		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1
Ethanol	ND		1400		ug/Kg	☼	12/13/24 15:48	12/13/24 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*12/13/24 15:48*	*12/13/24 22:37*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/13/24 22:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*	*12/13/24 15:48*	*12/13/24 22:37*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*12/13/24 15:48*	*12/13/24 22:37*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
1,2,4-Trichlorobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
1,2-Dichlorobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
1,3-Dichlorobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
1,4-Dichlorobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
1-Methylnaphthalene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4,5-Trichlorophenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4,6-Trichlorophenol	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4-Dichlorophenol	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4-Dimethylphenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4-Dinitrophenol	ND		3730		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,4-Dinitrotoluene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2,6-Dinitrotoluene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-4 (0-2)
Date Collected: 12/09/24 08:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-1
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2-Chlorophenol	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2-Methylnaphthalene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2-Methylphenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2-Nitroaniline	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
2-Nitrophenol	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
3 & 4 Methylphenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
3,3'-Dichlorobenzidine	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
3-Nitroaniline	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4,6-Dinitro-2-methylphenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Bromophenyl phenyl ether	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Chloro-3-methylphenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Chloroaniline	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Chlorophenyl phenyl ether	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Nitroaniline	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
4-Nitrophenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Acenaphthene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Acenaphthylene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Aniline	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Anthracene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Azobenzene/Diphenyldiazene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzidine	ND	*- *1	3730		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzo[a]anthracene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzo[a]pyrene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzo[b]fluoranthene	**502**		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzo[g,h,i]perylene	**498**		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzo[k]fluoranthene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzoic acid	**4880**		4710		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Benzyl alcohol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Bis(2-chloroethoxy)methane	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Bis(2-chloroethyl)ether	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
bis (2-chloroisopropyl) ether	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Bis(2-ethylhexyl) phthalate	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Butyl benzyl phthalate	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Carbazole	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Chrysene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Dibenz(a,h)anthracene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Dibenzofuran	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Diethyl phthalate	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Dimethyl phthalate	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Di-n-butyl phthalate	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Di-n-octyl phthalate	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Fluoranthene	**407**		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Fluorene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Hexachlorobenzene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Hexachlorobutadiene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Hexachlorocyclopentadiene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Hexachloroethane	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Indeno[1,2,3-cd]pyrene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1

Client Sample ID: SB-4 (0-2)
Date Collected: 12/09/24 08:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-1
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Naphthalene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Nitrobenzene	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
N-Nitrosodimethylamine	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
N-Nitrosodi-n-propylamine	ND		943		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
N-Nitrosodiphenylamine	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Pentachloronitrobenzene	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Pentachlorophenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Phenanthrene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Phenol	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Pyrene	ND		377		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1
Pyridine	ND		1860		ug/Kg	☼	12/18/24 09:57	12/19/24 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:57*	*1*
2-Fluorophenol (Surr)	*72*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:57*	*1*
Nitrobenzene-d5 (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:57*	*1*
Phenol-d5 (Surr)	*64*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:57*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:57*	*1*
Terphenyl-d14 (Surr)	*58*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:57*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		8.57		mg/Kg	☼	12/17/24 14:08	12/17/24 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*74*		*70 - 130*	*12/17/24 14:08*	*12/17/24 20:08*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**710**		156		mg/Kg	☼	12/13/24 13:01	12/16/24 15:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*52*		*40 - 140*	*12/13/24 13:01*	*12/16/24 15:26*	*5*
1-Chlorooctadecane	*53*		*40 - 140*	*12/13/24 13:01*	*12/16/24 15:26*	*5*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1221	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1232	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1242	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1248	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1254	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1260	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1262	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1
PCB-1268	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/16/24 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*32*		*30 - 150*	*12/12/24 15:24*	*12/16/24 19:38*	*1*
DCB Decachlorobiphenyl (Surr)	*282*	*S1+*	*30 - 150*	*12/12/24 15:24*	*12/16/24 19:38*	*1*

Client Sample ID: SB-4 (0-2)

Lab Sample ID: 620-22848-1
Date Collected: 12/09/24 08:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.5

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.90		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Arsenic	**27.1**		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Beryllium	ND		0.990		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Cadmium	ND		0.990		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Chromium	**719**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Copper	**157**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Lead	**82.4**		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Nickel	**2.06**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Selenium	**7.02**		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Silver	ND		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Thallium	ND		5.94		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2
Zinc	**34.2**		5.94		mg/Kg	☼	12/16/24 08:50	12/17/24 14:37	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0767**	**F2 F1**	0.0523		mg/Kg	☼	12/16/24 11:21	12/16/24 16:41	1

Client Sample ID: SB-2 (0-2)

Lab Sample ID: 620-22848-2
Date Collected: 12/09/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Acetone	ND		59.3		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Acrylonitrile	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Benzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Bromobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Bromochloromethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Bromodichloromethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Bromoform	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Bromomethane	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
2-Butanone (MEK)	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
n-Butylbenzene	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
sec-Butylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
tert-Butylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Carbon disulfide	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Carbon tetrachloride	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Chlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Chloroethane	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Chloroform	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Chloromethane	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
2-Chlorotoluene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
4-Chlorotoluene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2-Dibromo-3-Chloropropane	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Dibromochloromethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2-Dibromoethane (EDB)	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Dibromomethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2-Dichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,4-Dichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Dichlorodifluoromethane (Freon 12)	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1-Dichloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2-Dichloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1-Dichloroethene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
cis-1,2-Dichloroethene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
trans-1,2-Dichloroethene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2-Dichloropropane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,3-Dichloropropane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
2,2-Dichloropropane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1-Dichloropropene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
cis-1,3-Dichloropropene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
trans-1,3-Dichloropropene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Ethylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Hexachlorobutadiene	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
2-Hexanone (MBK)	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Isopropylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
4-Isopropyltoluene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Methyl tert-butyl ether	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
4-Methyl-2-pentanone (MIBK)	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Methylene Chloride	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Naphthalene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
N-Propylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Styrene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1,1,2-Tetrachloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1,2,2-Tetrachloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Tetrachloroethene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Toluene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2,3-Trichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2,4-Trichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,3,5-Trichlorobenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1,1-Trichloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,1,2-Trichloroethane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Trichloroethene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Trichlorofluoromethane (Freon 11)	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2,3-Trichloropropane	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,2,4-Trimethylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,3,5-Trimethylbenzene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Vinyl chloride	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
m,p-Xylene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
o-Xylene	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Tetrahydrofuran	ND		11.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Ethyl ether	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Tert-amyl methyl ether	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Ethyl tert-butyl ether	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
di-Isopropyl ether	ND		5.93		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
tert-Butanol	ND		119		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
1,4-Dioxane	ND		119		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	ND		29.7		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1
Ethanol	ND		1190		ug/Kg	☼	12/13/24 15:48	12/13/24 23:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:02*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:02*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:02*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
1,2,4-Trichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
1,2-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
1,3-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
1,4-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
1-Methylnaphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4,5-Trichlorophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4,6-Trichlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4-Dichlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4-Dimethylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4-Dinitrophenol	ND		781		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,4-Dinitrotoluene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2,6-Dinitrotoluene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Chloronaphthalene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Chlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Methylnaphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Nitroaniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
2-Nitrophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
3 & 4 Methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
3,3'-Dichlorobenzidine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
3-Nitroaniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4,6-Dinitro-2-methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Bromophenyl phenyl ether	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Chloro-3-methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Chloroaniline	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Chlorophenyl phenyl ether	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Nitroaniline	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
4-Nitrophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Acenaphthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Acenaphthylene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Aniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Azobenzene/Diphenyldiazene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzidine	ND	*- *1	781		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzo[a]anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzo[a]pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzo[b]fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzo[g,h,i]perylene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid
Percent Solids: 84.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzoic acid	**1910**		986		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Benzyl alcohol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Bis(2-chloroethoxy)methane	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Bis(2-chloroethyl)ether	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
bis (2-chloroisopropyl) ether	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Bis(2-ethylhexyl) phthalate	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Butyl benzyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Carbazole	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Chrysene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Dibenz(a,h)anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Dibenzofuran	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Diethyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Dimethyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Di-n-butyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Di-n-octyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Fluorene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Hexachlorobenzene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Hexachlorobutadiene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Hexachlorocyclopentadiene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Hexachloroethane	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Indeno[1,2,3-cd]pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Isophorone	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Naphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Nitrobenzene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
N-Nitrosodimethylamine	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
N-Nitrosodi-n-propylamine	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
N-Nitrosodiphenylamine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Pentachloronitrobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Pentachlorophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Phenanthrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Phenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1
Pyridine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/19/24 17:39*	*1*
2-Fluorophenol (Surr)	*72*		*15 - 110*	*12/18/24 09:57*	*12/19/24 17:39*	*1*
Nitrobenzene-d5 (Surr)	*58*		*30 - 130*	*12/18/24 09:57*	*12/19/24 17:39*	*1*
Phenol-d5 (Surr)	*67*		*15 - 110*	*12/18/24 09:57*	*12/19/24 17:39*	*1*
2,4,6-Tribromophenol (Surr)	*65*		*15 - 110*	*12/18/24 09:57*	*12/19/24 17:39*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 17:39*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		6.51		mg/Kg	☼	12/17/24 14:08	12/17/24 20:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*78*		*70 - 130*	*12/17/24 14:08*	*12/17/24 20:42*	*1*

Client Sample ID: SB-2 (0-2)

Lab Sample ID: 620-22848-2
Date Collected: 12/09/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.5

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**61.2**		15.7		mg/Kg	☼	12/13/24 13:01	12/16/24 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*63*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:03*	*1*
1-Chlorooctadecane	*83*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:03*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1221	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1232	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1242	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1248	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1254	**72.5**		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1260	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1262	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1
PCB-1268	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/16/24 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*14*	*S1-*	*30 - 150*	*12/12/24 15:24*	*12/16/24 19:56*	*1*
DCB Decachlorobiphenyl (Surr)	*51*		*30 - 150*	*12/12/24 15:24*	*12/16/24 19:56*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.57		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Arsenic	ND		2.87		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Beryllium	ND		0.957		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Cadmium	ND		0.957		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Chromium	**11.2**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Copper	**11.7**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Lead	**58.9**		2.87		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Nickel	**2.80**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Selenium	ND		2.87		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Silver	ND		2.87		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Thallium	ND		5.74		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2
Zinc	**75.9**		5.74		mg/Kg	☼	12/16/24 08:50	12/17/24 14:57	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0644**		0.0543		mg/Kg	☼	12/16/24 11:21	12/16/24 16:54	1

Client Sample ID: MW-102 (0-2)

Lab Sample ID: 620-22848-3
Date Collected: 12/09/24 10:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Acetone	ND		50.3		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Acrylonitrile	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-102 (0-2)
Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Bromobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Bromochloromethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Bromodichloromethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Bromoform	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Bromomethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
2-Butanone (MEK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
n-Butylbenzene	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
sec-Butylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
tert-Butylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Carbon disulfide	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Carbon tetrachloride	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Chlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Chloroethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Chloroform	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Chloromethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
2-Chlorotoluene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
4-Chlorotoluene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2-Dibromo-3-Chloropropane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Dibromochloromethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2-Dibromoethane (EDB)	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Dibromomethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2-Dichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,3-Dichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,4-Dichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Dichlorodifluoromethane (Freon 12)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1-Dichloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2-Dichloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1-Dichloroethene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
cis-1,2-Dichloroethene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
trans-1,2-Dichloroethene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2-Dichloropropane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,3-Dichloropropane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
2,2-Dichloropropane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1-Dichloropropene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
cis-1,3-Dichloropropene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
trans-1,3-Dichloropropene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Ethylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Hexachlorobutadiene	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
2-Hexanone (MBK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Isopropylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
4-Isopropyltoluene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Methyl tert-butyl ether	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
4-Methyl-2-pentanone (MIBK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Methylene Chloride	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Naphthalene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
N-Propylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Styrene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1,1,2-Tetrachloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-102 (0-2)

Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3

Matrix: Solid
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Tetrachloroethene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Toluene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2,3-Trichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2,4-Trichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,3,5-Trichlorobenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1,1-Trichloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,1,2-Trichloroethane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Trichloroethene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Trichlorofluoromethane (Freon 11)	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2,3-Trichloropropane	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,2,4-Trimethylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,3,5-Trimethylbenzene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Vinyl chloride	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
m,p-Xylene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
o-Xylene	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Tetrahydrofuran	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Ethyl ether	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Tert-amyl methyl ether	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Ethyl tert-butyl ether	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
di-Isopropyl ether	ND		5.03		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
tert-Butanol	ND		101		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
1,4-Dioxane	ND		101		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
trans-1,4-Dichloro-2-butene	ND		25.2		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1
Ethanol	ND		1010		ug/Kg	☼	12/13/24 15:48	12/13/24 23:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:28*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:28*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:28*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
1,2,4-Trichlorobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
1,2-Dichlorobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
1,3-Dichlorobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
1,4-Dichlorobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
1-Methylnaphthalene	ND		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4,5-Trichlorophenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4,6-Trichlorophenol	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4-Dichlorophenol	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4-Dimethylphenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4-Dinitrophenol	ND		3680		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,4-Dinitrotoluene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2,6-Dinitrotoluene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2-Chloronaphthalene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2-Chlorophenol	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2-Methylnaphthalene	ND		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1

Client Sample ID: MW-102 (0-2)
Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2-Nitroaniline	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
2-Nitrophenol	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
3 & 4 Methylphenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
3,3'-Dichlorobenzidine	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
3-Nitroaniline	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4,6-Dinitro-2-methylphenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Bromophenyl phenyl ether	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Chloro-3-methylphenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Chloroaniline	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Chlorophenyl phenyl ether	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Nitroaniline	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
4-Nitrophenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Acenaphthene	ND		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Acenaphthylene	**415**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Aniline	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Anthracene	**904**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Azobenzene/Diphenyldiazene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzidine	ND	*- *1	3680		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzo[a]anthracene	**2180**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzo[a]pyrene	**2340**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzo[b]fluoranthene	**2120**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzo[g,h,i]perylene	**1590**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzo[k]fluoranthene	**2220**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzoic acid	**5200**		4650		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Benzyl alcohol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Bis(2-chloroethoxy)methane	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Bis(2-chloroethyl)ether	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
bis (2-chloroisopropyl) ether	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Bis(2-ethylhexyl) phthalate	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Butyl benzyl phthalate	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Carbazole	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Chrysene	**2500**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Dibenz(a,h)anthracene	**558**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Dibenzofuran	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Diethyl phthalate	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Dimethyl phthalate	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Di-n-butyl phthalate	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Di-n-octyl phthalate	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Fluoranthene	**5170**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Fluorene	ND		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Hexachlorobenzene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Hexachlorobutadiene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Hexachlorocyclopentadiene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Hexachloroethane	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Indeno[1,2,3-cd]pyrene	**1400**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Isophorone	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Naphthalene	ND		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Nitrobenzene	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1

Client Sample ID: MW-102 (0-2)
Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodimethylamine	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
N-Nitrosodi-n-propylamine	ND		931		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
N-Nitrosodiphenylamine	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Pentachloronitrobenzene	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Pentachlorophenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Phenanthrene	**4230**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Phenol	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Pyrene	**5190**		372		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1
Pyridine	ND		1840		ug/Kg	☼	12/18/24 09:57	12/19/24 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*56*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:05*	*1*
2-Fluorophenol (Surr)	*73*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:05*	*1*
Nitrobenzene-d5 (Surr)	*56*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:05*	*1*
Phenol-d5 (Surr)	*66*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:05*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:05*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:05*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		7.37		mg/Kg	☼	12/17/24 14:08	12/17/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*80*		*70 - 130*	*12/17/24 14:08*	*12/17/24 21:17*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**358**		44.6		mg/Kg	☼	12/13/24 13:01	12/16/24 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*117*		*40 - 140*	*12/13/24 13:01*	*12/16/24 16:33*	*1*
1-Chlorooctadecane	*121*		*40 - 140*	*12/13/24 13:01*	*12/16/24 16:33*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1221	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1232	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1242	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1248	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1254	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1260	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1262	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1
PCB-1268	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/16/24 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*23*	*S1-*	*30 - 150*	*12/12/24 15:24*	*12/16/24 20:14*	*1*
DCB Decachlorobiphenyl (Surr)	*103*	*p*	*30 - 150*	*12/12/24 15:24*	*12/16/24 20:14*	*1*

Client Sample ID: MW-102 (0-2)

Lab Sample ID: 620-22848-3
Date Collected: 12/09/24 10:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10.0		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Arsenic	ND		3.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Beryllium	ND		1.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Cadmium	ND		1.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Chromium	**14.5**		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Copper	**16.7**		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Lead	**723**		3.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Nickel	**3.38**		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Selenium	ND		3.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Silver	ND		3.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Thallium	ND		6.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2
Zinc	**129**		6.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:03	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.321**		0.0558		mg/Kg	☼	12/16/24 11:21	12/16/24 16:57	1

Client Sample ID: MW-101 (5-6)

Lab Sample ID: 620-22848-4
Date Collected: 12/10/24 08:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Acetone	ND		64.7		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Acrylonitrile	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Benzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Bromobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Bromochloromethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Bromodichloromethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Bromoform	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Bromomethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
2-Butanone (MEK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
n-Butylbenzene	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
sec-Butylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
tert-Butylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Carbon disulfide	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Carbon tetrachloride	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Chlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Chloroethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Chloroform	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Chloromethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
2-Chlorotoluene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
4-Chlorotoluene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2-Dibromo-3-Chloropropane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Dibromochloromethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2-Dibromoethane (EDB)	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Dibromomethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2-Dichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1

Client Sample ID: MW-101 (5-6)
Lab Sample ID: 620-22848-4
Date Collected: 12/10/24 08:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,4-Dichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Dichlorodifluoromethane (Freon 12)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1-Dichloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2-Dichloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1-Dichloroethene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
cis-1,2-Dichloroethene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
trans-1,2-Dichloroethene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2-Dichloropropane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,3-Dichloropropane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
2,2-Dichloropropane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1-Dichloropropene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
cis-1,3-Dichloropropene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
trans-1,3-Dichloropropene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Ethylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Hexachlorobutadiene	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
2-Hexanone (MBK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Isopropylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
4-Isopropyltoluene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Methyl tert-butyl ether	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
4-Methyl-2-pentanone (MIBK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Methylene Chloride	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Naphthalene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
N-Propylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Styrene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1,1,2-Tetrachloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1,2,2-Tetrachloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Tetrachloroethene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Toluene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2,3-Trichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2,4-Trichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,3,5-Trichlorobenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1,1-Trichloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,1,2-Trichloroethane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Trichloroethene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Trichlorofluoromethane (Freon 11)	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2,3-Trichloropropane	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,2,4-Trimethylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,3,5-Trimethylbenzene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Vinyl chloride	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
m,p-Xylene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
o-Xylene	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Tetrahydrofuran	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Ethyl ether	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Tert-amyl methyl ether	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Ethyl tert-butyl ether	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
di-Isopropyl ether	ND		6.47		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
tert-Butanol	ND		129		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
1,4-Dioxane	ND		129		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1

Client Sample ID: MW-101 (5-6)
Date Collected: 12/10/24 08:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-4
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	ND		32.4		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1
Ethanol	ND		1290		ug/Kg	☼	12/13/24 15:48	12/13/24 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:54*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:54*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*12/13/24 15:48*	*12/13/24 23:54*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
1,2,4-Trichlorobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
1,2-Dichlorobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
1,3-Dichlorobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
1,4-Dichlorobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
1-Methylnaphthalene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4,5-Trichlorophenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4,6-Trichlorophenol	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4-Dichlorophenol	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4-Dimethylphenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4-Dinitrophenol	ND		3760		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,4-Dinitrotoluene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2,6-Dinitrotoluene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Chloronaphthalene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Chlorophenol	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Methylnaphthalene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Methylphenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Nitroaniline	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
2-Nitrophenol	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
3 & 4 Methylphenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
3,3'-Dichlorobenzidine	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
3-Nitroaniline	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4,6-Dinitro-2-methylphenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Bromophenyl phenyl ether	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Chloro-3-methylphenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Chloroaniline	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Chlorophenyl phenyl ether	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Nitroaniline	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
4-Nitrophenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Acenaphthene	**413**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Acenaphthylene	**1800**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Aniline	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Anthracene	**2040**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Azobenzene/Diphenyldiazene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzidine	ND	*- *1	3760		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzo[a]anthracene	**3660**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzo[a]pyrene	**3610**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzo[b]fluoranthene	**3440**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzo[g,h,i]perylene	**2440**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1

Client Sample ID: MW-101 (5-6)
Date Collected: 12/10/24 08:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-4
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	**3970**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzoic acid	ND		4750		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Benzyl alcohol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Bis(2-chloroethoxy)methane	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Bis(2-chloroethyl)ether	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
bis (2-chloroisopropyl) ether	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Bis(2-ethylhexyl) phthalate	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Butyl benzyl phthalate	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Carbazole	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Chrysene	**3600**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Dibenz(a,h)anthracene	**854**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Dibenzofuran	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Diethyl phthalate	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Dimethyl phthalate	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Di-n-butyl phthalate	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Di-n-octyl phthalate	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Fluoranthene	**9200**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Fluorene	**672**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Hexachlorobenzene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Hexachlorobutadiene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Hexachlorocyclopentadiene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Hexachloroethane	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Indeno[1,2,3-cd]pyrene	**2270**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Isophorone	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Naphthalene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Nitrobenzene	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
N-Nitrosodimethylamine	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
N-Nitrosodi-n-propylamine	ND		952		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
N-Nitrosodiphenylamine	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Pentachloronitrobenzene	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Pentachlorophenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Phenanthrene	**6920**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Phenol	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Pyrene	**7920**		380		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1
Pyridine	ND		1880		ug/Kg	☼	12/18/24 09:57	12/19/24 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:31*	*1*
2-Fluorophenol (Surr)	*94*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:31*	*1*
Nitrobenzene-d5 (Surr)	*74*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:31*	*1*
Phenol-d5 (Surr)	*87*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:31*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*15 - 110*	*12/18/24 09:57*	*12/19/24 18:31*	*1*
Terphenyl-d14 (Surr)	*75*		*30 - 130*	*12/18/24 09:57*	*12/19/24 18:31*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.52		mg/Kg	☼	12/17/24 14:08	12/17/24 21:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*85*		*70 - 130*	*12/17/24 14:08*	*12/17/24 21:52*	*1*

Client Sample ID: MW-101 (5-6)

Lab Sample ID: 620-22848-4
Date Collected: 12/10/24 08:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**462**		69.4		mg/Kg	☼	12/13/24 13:01	12/17/24 00:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*40 - 140*	*12/13/24 13:01*	*12/17/24 00:18*	*1*
1-Chlorooctadecane	*93*		*40 - 140*	*12/13/24 13:01*	*12/17/24 00:18*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1221	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1232	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1242	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1248	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1254	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1260	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1262	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1
PCB-1268	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*50*		*30 - 150*	*12/12/24 15:24*	*12/16/24 20:31*	*1*
DCB Decachlorobiphenyl (Surr)	*112*	*p*	*30 - 150*	*12/12/24 15:24*	*12/16/24 20:31*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.62		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Arsenic	ND		2.89		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Beryllium	ND		0.962		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Cadmium	ND		0.962		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Chromium	**5.83**		1.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Copper	**6.20**		1.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Lead	**19.3**		2.89		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Nickel	**2.96**		1.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Selenium	ND		2.89		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Silver	ND		2.89		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Thallium	ND		5.77		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2
Zinc	**52.3**		5.77		mg/Kg	☼	12/16/24 08:50	12/17/24 15:09	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0494		mg/Kg	☼	12/16/24 11:21	12/16/24 16:59	1

Client Sample ID: MW-102 (13-15)

Lab Sample ID: 620-22848-5
Date Collected: 12/10/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Acetone	ND		32.9		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Acrylonitrile	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-102 (13-15)
Date Collected: 12/10/24 09:15
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-5
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Bromobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Bromochloromethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Bromodichloromethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Bromoform	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Bromomethane	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
2-Butanone (MEK)	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
n-Butylbenzene	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
sec-Butylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
tert-Butylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Carbon disulfide	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Carbon tetrachloride	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Chlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Chloroethane	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Chloroform	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Chloromethane	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
2-Chlorotoluene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
4-Chlorotoluene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2-Dibromo-3-Chloropropane	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Dibromochloromethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2-Dibromoethane (EDB)	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Dibromomethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2-Dichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,3-Dichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,4-Dichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Dichlorodifluoromethane (Freon 12)	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1-Dichloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2-Dichloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1-Dichloroethene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
cis-1,2-Dichloroethene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
trans-1,2-Dichloroethene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2-Dichloropropane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,3-Dichloropropane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
2,2-Dichloropropane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1-Dichloropropene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
cis-1,3-Dichloropropene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
trans-1,3-Dichloropropene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Ethylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Hexachlorobutadiene	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
2-Hexanone (MBK)	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Isopropylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
4-Isopropyltoluene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Methyl tert-butyl ether	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
4-Methyl-2-pentanone (MIBK)	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Methylene Chloride	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Naphthalene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
N-Propylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Styrene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1,1,2-Tetrachloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1

Client Sample ID: MW-102 (13-15)
Lab Sample ID: 620-22848-5
Date Collected: 12/10/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Tetrachloroethene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Toluene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2,3-Trichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2,4-Trichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,3,5-Trichlorobenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1,1-Trichloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,1,2-Trichloroethane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Trichloroethene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Trichlorofluoromethane (Freon 11)	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2,3-Trichloropropane	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,2,4-Trimethylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,3,5-Trimethylbenzene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Vinyl chloride	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
m,p-Xylene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
o-Xylene	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Tetrahydrofuran	ND		6.58		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Ethyl ether	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Tert-amyl methyl ether	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Ethyl tert-butyl ether	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
di-Isopropyl ether	ND		3.29		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
tert-Butanol	ND		65.8		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
1,4-Dioxane	ND		65.8		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
trans-1,4-Dichloro-2-butene	ND		16.5		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1
Ethanol	ND		658		ug/Kg	☼	12/13/24 15:48	12/14/24 00:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:19*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:19*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:19*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
1,2,4-Trichlorobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
1,2-Dichlorobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
1,3-Dichlorobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
1,4-Dichlorobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
1-Methylnaphthalene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4,5-Trichlorophenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4,6-Trichlorophenol	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4-Dichlorophenol	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4-Dimethylphenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4-Dinitrophenol	ND		747		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,4-Dinitrotoluene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2,6-Dinitrotoluene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2-Chloronaphthalene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2-Chlorophenol	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2-Methylnaphthalene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1

Client Sample ID: MW-102 (13-15)
Date Collected: 12/10/24 09:15
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-5
Matrix: Solid
Percent Solids: 85.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2-Nitroaniline	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
2-Nitrophenol	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
3 & 4 Methylphenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
3,3'-Dichlorobenzidine	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
3-Nitroaniline	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4,6-Dinitro-2-methylphenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Bromophenyl phenyl ether	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Chloro-3-methylphenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Chloroaniline	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Chlorophenyl phenyl ether	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Nitroaniline	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
4-Nitrophenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Acenaphthene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Acenaphthylene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Aniline	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Anthracene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Azobenzene/Diphenyldiazene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzidine	ND	*- *1	747		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzo[a]anthracene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzo[a]pyrene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzo[b]fluoranthene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzo[g,h,i]perylene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzo[k]fluoranthene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzoic acid	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Benzyl alcohol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Bis(2-chloroethoxy)methane	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Bis(2-chloroethyl)ether	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
bis (2-chloroisopropyl) ether	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Bis(2-ethylhexyl) phthalate	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Butyl benzyl phthalate	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Carbazole	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Chrysene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Dibenz(a,h)anthracene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Dibenzofuran	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Diethyl phthalate	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Dimethyl phthalate	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Di-n-butyl phthalate	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Di-n-octyl phthalate	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Fluoranthene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Fluorene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Hexachlorobenzene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Hexachlorobutadiene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Hexachlorocyclopentadiene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Hexachloroethane	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Indeno[1,2,3-cd]pyrene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Isophorone	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Naphthalene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Nitrobenzene	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-102 (13-15)

Date Collected: 12/10/24 09:15
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-5

Matrix: Solid
Percent Solids: 85.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodimethylamine	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
N-Nitrosodi-n-propylamine	ND		189		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
N-Nitrosodiphenylamine	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Pentachloronitrobenzene	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Pentachlorophenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Phenanthrene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Phenol	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Pyrene	ND		75.4		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1
Pyridine	ND		373		ug/Kg	☼	12/13/24 11:09	12/17/24 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:11*	*1*
2-Fluorophenol (Surr)	*122*	*S1+*	*15 - 110*	*12/13/24 11:09*	*12/17/24 19:11*	*1*
Nitrobenzene-d5 (Surr)	*86*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:11*	*1*
Phenol-d5 (Surr)	*109*		*15 - 110*	*12/13/24 11:09*	*12/17/24 19:11*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*15 - 110*	*12/13/24 11:09*	*12/17/24 19:11*	*1*
Terphenyl-d14 (Surr)	*92*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:11*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.33		mg/Kg	☼	12/17/24 14:08	12/17/24 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*74*		*70 - 130*	*12/17/24 14:08*	*12/17/24 22:26*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		14.2		mg/Kg	☼	12/13/24 13:01	12/16/24 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*58*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:26*	*1*
1-Chlorooctadecane	*79*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:26*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1221	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1232	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1242	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1248	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1254	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1260	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1262	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1
PCB-1268	ND		22.3		ug/Kg	☼	12/12/24 15:24	12/16/24 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 150*	*12/12/24 15:24*	*12/16/24 20:49*	*1*
DCB Decachlorobiphenyl (Surr)	*75*		*30 - 150*	*12/12/24 15:24*	*12/16/24 20:49*	*1*

Client Sample ID: MW-102 (13-15)

Lab Sample ID: 620-22848-5
Date Collected: 12/10/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.75		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Arsenic	ND		2.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Beryllium	ND		0.975		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Cadmium	ND		0.975		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Chromium	ND		1.95		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Copper	ND		1.95		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Lead	ND		2.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Nickel	ND		1.95		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Selenium	ND		2.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Silver	ND		2.92		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Thallium	ND		5.85		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2
Zinc	ND		5.85		mg/Kg	☼	12/16/24 08:50	12/17/24 15:15	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0450		mg/Kg	☼	12/16/24 11:21	12/16/24 17:01	1

Client Sample ID: MW-107 (13-15)

Lab Sample ID: 620-22848-6
Date Collected: 12/10/24 10:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Acetone	ND		50.5		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Acrylonitrile	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Benzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Bromobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Bromochloromethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Bromodichloromethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Bromoform	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Bromomethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
2-Butanone (MEK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
n-Butylbenzene	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
sec-Butylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
tert-Butylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Carbon disulfide	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Carbon tetrachloride	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Chlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Chloroethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Chloroform	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Chloromethane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
2-Chlorotoluene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
4-Chlorotoluene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2-Dibromo-3-Chloropropane	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Dibromochloromethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2-Dibromoethane (EDB)	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Dibromomethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2-Dichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-107 (13-15)
Date Collected: 12/10/24 10:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-6
Matrix: Solid
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,4-Dichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Dichlorodifluoromethane (Freon 12)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1-Dichloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2-Dichloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1-Dichloroethene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
cis-1,2-Dichloroethene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
trans-1,2-Dichloroethene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2-Dichloropropane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,3-Dichloropropane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
2,2-Dichloropropane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1-Dichloropropene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
cis-1,3-Dichloropropene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
trans-1,3-Dichloropropene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Ethylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Hexachlorobutadiene	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
2-Hexanone (MBK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Isopropylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
4-Isopropyltoluene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Methyl tert-butyl ether	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
4-Methyl-2-pentanone (MIBK)	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Methylene Chloride	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Naphthalene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
N-Propylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Styrene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1,1,2-Tetrachloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1,2,2-Tetrachloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Tetrachloroethene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Toluene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2,3-Trichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2,4-Trichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,3,5-Trichlorobenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1,1-Trichloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,1,2-Trichloroethane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Trichloroethene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Trichlorofluoromethane (Freon 11)	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2,3-Trichloropropane	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,2,4-Trimethylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,3,5-Trimethylbenzene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Vinyl chloride	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
m,p-Xylene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
o-Xylene	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Tetrahydrofuran	ND		10.1		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Ethyl ether	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Tert-amyl methyl ether	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Ethyl tert-butyl ether	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
di-Isopropyl ether	ND		5.05		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
tert-Butanol	ND		101		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
1,4-Dioxane	ND		101		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1

Client Sample ID: MW-107 (13-15)
Date Collected: 12/10/24 10:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-6
Matrix: Solid
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	ND		25.2		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1
Ethanol	ND		1010		ug/Kg	☼	12/13/24 15:48	12/14/24 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:44*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:44*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*12/13/24 15:48*	*12/14/24 00:44*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
1,2,4-Trichlorobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
1,2-Dichlorobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
1,3-Dichlorobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
1,4-Dichlorobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
1-Methylnaphthalene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4,5-Trichlorophenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4,6-Trichlorophenol	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4-Dichlorophenol	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4-Dimethylphenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4-Dinitrophenol	ND		739		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,4-Dinitrotoluene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2,6-Dinitrotoluene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Chloronaphthalene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Chlorophenol	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Methylnaphthalene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Methylphenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Nitroaniline	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
2-Nitrophenol	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
3 & 4 Methylphenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
3,3'-Dichlorobenzidine	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
3-Nitroaniline	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4,6-Dinitro-2-methylphenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Bromophenyl phenyl ether	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Chloro-3-methylphenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Chloroaniline	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Chlorophenyl phenyl ether	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Nitroaniline	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
4-Nitrophenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Acenaphthene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Acenaphthylene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Aniline	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Anthracene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Azobenzene/Diphenyldiazene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzidine	ND	*- *1	739		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzo[a]anthracene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzo[a]pyrene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzo[b]fluoranthene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzo[g,h,i]perylene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1

Client Sample ID: MW-107 (13-15)
Date Collected: 12/10/24 10:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-6
Matrix: Solid
Percent Solids: 85.8

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzoic acid	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Benzyl alcohol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Bis(2-chloroethoxy)methane	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Bis(2-chloroethyl)ether	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
bis (2-chloroisopropyl) ether	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Bis(2-ethylhexyl) phthalate	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Butyl benzyl phthalate	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Carbazole	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Chrysene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Dibenz(a,h)anthracene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Dibenzofuran	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Diethyl phthalate	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Dimethyl phthalate	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Di-n-butyl phthalate	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Di-n-octyl phthalate	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Fluoranthene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Fluorene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Hexachlorobenzene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Hexachlorobutadiene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Hexachlorocyclopentadiene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Hexachloroethane	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Indeno[1,2,3-cd]pyrene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Isophorone	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Naphthalene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Nitrobenzene	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
N-Nitrosodimethylamine	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
N-Nitrosodi-n-propylamine	ND		187		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
N-Nitrosodiphenylamine	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Pentachloronitrobenzene	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Pentachlorophenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Phenanthrene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Phenol	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Pyrene	ND		74.6		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1
Pyridine	ND		369		ug/Kg	☼	12/13/24 11:09	12/17/24 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:37*	*1*
2-Fluorophenol (Surr)	*106*		*15 - 110*	*12/13/24 11:09*	*12/17/24 19:37*	*1*
Nitrobenzene-d5 (Surr)	*76*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:37*	*1*
Phenol-d5 (Surr)	*96*		*15 - 110*	*12/13/24 11:09*	*12/17/24 19:37*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*15 - 110*	*12/13/24 11:09*	*12/17/24 19:37*	*1*
Terphenyl-d14 (Surr)	*85*		*30 - 130*	*12/13/24 11:09*	*12/17/24 19:37*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.62		mg/Kg	☼	12/17/24 14:08	12/17/24 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*91*		*70 - 130*	*12/17/24 14:08*	*12/17/24 23:01*	*1*

Client Sample ID: MW-107 (13-15)
Lab Sample ID: 620-22848-6
Date Collected: 12/10/24 10:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		14.3		mg/Kg	☼	12/13/24 13:01	12/16/24 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*64*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:50*	*1*
1-Chlorooctadecane	*92*		*40 - 140*	*12/13/24 13:01*	*12/16/24 18:50*	*1*

Client Sample ID: MW-108 (13-15)
Lab Sample ID: 620-22848-7
Date Collected: 12/10/24 11:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Acetone	ND		39.0		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Acrylonitrile	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Benzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Bromobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Bromochloromethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Bromodichloromethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Bromoform	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Bromomethane	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
2-Butanone (MEK)	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
n-Butylbenzene	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
sec-Butylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
tert-Butylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Carbon disulfide	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Carbon tetrachloride	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Chlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Chloroethane	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Chloroform	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Chloromethane	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
2-Chlorotoluene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
4-Chlorotoluene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2-Dibromo-3-Chloropropane	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Dibromochloromethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2-Dibromoethane (EDB)	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Dibromomethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2-Dichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,3-Dichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,4-Dichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Dichlorodifluoromethane (Freon 12)	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1-Dichloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2-Dichloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1-Dichloroethene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
cis-1,2-Dichloroethene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
trans-1,2-Dichloroethene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2-Dichloropropane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,3-Dichloropropane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
2,2-Dichloropropane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1

Client Sample ID: MW-108 (13-15)
Date Collected: 12/10/24 11:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-7
Matrix: Solid
Percent Solids: 86.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
cis-1,3-Dichloropropene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
trans-1,3-Dichloropropene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Ethylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Hexachlorobutadiene	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
2-Hexanone (MBK)	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Isopropylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
4-Isopropyltoluene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Methyl tert-butyl ether	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
4-Methyl-2-pentanone (MIBK)	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Methylene Chloride	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Naphthalene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
N-Propylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Styrene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1,1,2-Tetrachloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1,2,2-Tetrachloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Tetrachloroethene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Toluene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2,3-Trichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2,4-Trichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,3,5-Trichlorobenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1,1-Trichloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,1,2-Trichloroethane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Trichloroethene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Trichlorofluoromethane (Freon 11)	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2,3-Trichloropropane	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,2,4-Trimethylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,3,5-Trimethylbenzene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Vinyl chloride	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
m,p-Xylene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
o-Xylene	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Tetrahydrofuran	ND		7.79		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Ethyl ether	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Tert-amyl methyl ether	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Ethyl tert-butyl ether	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
di-Isopropyl ether	ND		3.90		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
tert-Butanol	ND		77.9		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
1,4-Dioxane	ND		77.9		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
trans-1,4-Dichloro-2-butene	ND		19.5		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1
Ethanol	ND		779		ug/Kg	☼	12/13/24 15:48	12/14/24 01:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:09*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:09*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:09*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1

Client Sample ID: MW-108 (13-15)
Lab Sample ID: 620-22848-7
Date Collected: 12/10/24 11:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
1,2-Dichlorobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
1,3-Dichlorobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
1,4-Dichlorobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
1-Methylnaphthalene	**389**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4,5-Trichlorophenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4,6-Trichlorophenol	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4-Dichlorophenol	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4-Dimethylphenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4-Dinitrophenol	ND		754		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,4-Dinitrotoluene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2,6-Dinitrotoluene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Chloronaphthalene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Chlorophenol	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Methylnaphthalene	**472**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Methylphenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Nitroaniline	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
2-Nitrophenol	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
3 & 4 Methylphenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
3,3'-Dichlorobenzidine	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
3-Nitroaniline	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4,6-Dinitro-2-methylphenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Bromophenyl phenyl ether	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Chloro-3-methylphenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Chloroaniline	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Chlorophenyl phenyl ether	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Nitroaniline	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
4-Nitrophenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Acenaphthene	ND		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Acenaphthylene	**86.4**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Aniline	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Anthracene	**209**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Azobenzene/Diphenyldiazene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzidine	ND	*- *1	754		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzo[a]anthracene	**446**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzo[a]pyrene	**345**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzo[b]fluoranthene	**345**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzo[g,h,i]perylene	**221**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzo[k]fluoranthene	**324**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzoic acid	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Benzyl alcohol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Bis(2-chloroethoxy)methane	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Bis(2-chloroethyl)ether	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
bis (2-chloroisopropyl) ether	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Bis(2-ethylhexyl) phthalate	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Butyl benzyl phthalate	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Carbazole	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Chrysene	**470**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Dibenz(a,h)anthracene	**107**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1

Client Sample ID: MW-108 (13-15)
Lab Sample ID: 620-22848-7
Date Collected: 12/10/24 11:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Diethyl phthalate	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Dimethyl phthalate	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Di-n-butyl phthalate	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Di-n-octyl phthalate	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Fluoranthene	**916**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Fluorene	ND		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Hexachlorobenzene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Hexachlorobutadiene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Hexachlorocyclopentadiene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Hexachloroethane	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Indeno[1,2,3-cd]pyrene	**200**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Isophorone	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Naphthalene	**427**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Nitrobenzene	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
N-Nitrosodimethylamine	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
N-Nitrosodi-n-propylamine	ND		191		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
N-Nitrosodiphenylamine	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Pentachloronitrobenzene	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Pentachlorophenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Phenanthrene	**880**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Phenol	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Pyrene	**993**		76.2		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1
Pyridine	ND		377		ug/Kg	☼	12/13/24 11:09	12/17/24 20:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*30 - 130*	*12/13/24 11:09*	*12/17/24 20:57*	*1*
2-Fluorophenol (Surr)	*87*		*15 - 110*	*12/13/24 11:09*	*12/17/24 20:57*	*1*
Nitrobenzene-d5 (Surr)	*73*		*30 - 130*	*12/13/24 11:09*	*12/17/24 20:57*	*1*
Phenol-d5 (Surr)	*85*		*15 - 110*	*12/13/24 11:09*	*12/17/24 20:57*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*15 - 110*	*12/13/24 11:09*	*12/17/24 20:57*	*1*
Terphenyl-d14 (Surr)	*83*		*30 - 130*	*12/13/24 11:09*	*12/17/24 20:57*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.07		mg/Kg	☼	12/18/24 11:15	12/18/24 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*59*	*S1-*	*70 - 130*	*12/18/24 11:15*	*12/18/24 14:34*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**62.5**		15.2		mg/Kg	☼	12/13/24 13:01	12/16/24 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*40 - 140*	*12/13/24 13:01*	*12/16/24 19:13*	*1*
1-Chlorooctadecane	*89*		*40 - 140*	*12/13/24 13:01*	*12/16/24 19:13*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1

Client Sample ID: MW-108 (13-15)
Lab Sample ID: 620-22848-7

Date Collected: 12/10/24 11:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.3

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1232	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1242	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1248	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1254	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1260	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1262	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1
PCB-1268	ND		21.9		ug/Kg	☼	12/12/24 15:24	12/16/24 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*43*		*30 - 150*	*12/12/24 15:24*	*12/16/24 21:07*	*1*
DCB Decachlorobiphenyl (Surr)	*104*	*p*	*30 - 150*	*12/12/24 15:24*	*12/16/24 21:07*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.88		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Arsenic	ND		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Beryllium	ND		0.988		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Cadmium	ND		0.988		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Chromium	**3.03**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Copper	**3.42**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Lead	**3.89**		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Nickel	**3.62**		1.98		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Selenium	ND		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Silver	ND		2.97		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Thallium	ND		5.93		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2
Zinc	**23.8**		5.93		mg/Kg	☼	12/16/24 08:50	12/17/24 15:21	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0497		mg/Kg	☼	12/16/24 11:21	12/16/24 17:03	1

Client Sample ID: MW-108 (13-15)-DUP
Lab Sample ID: 620-22848-8

Date Collected: 12/10/24 11:55
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.9

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Acetone	ND		35.7		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Acrylonitrile	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Benzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Bromobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Bromochloromethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Bromodichloromethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Bromoform	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Bromomethane	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
2-Butanone (MEK)	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
n-Butylbenzene	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
sec-Butylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-108 (13-15)-DUP
Date Collected: 12/10/24 11:55
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-8
Matrix: Solid
Percent Solids: 86.9

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Carbon disulfide	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Carbon tetrachloride	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Chlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Chloroethane	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Chloroform	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Chloromethane	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
2-Chlorotoluene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
4-Chlorotoluene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2-Dibromo-3-Chloropropane	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Dibromochloromethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2-Dibromoethane (EDB)	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Dibromomethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2-Dichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,3-Dichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,4-Dichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Dichlorodifluoromethane (Freon 12)	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1-Dichloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2-Dichloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1-Dichloroethene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
cis-1,2-Dichloroethene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
trans-1,2-Dichloroethene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2-Dichloropropane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,3-Dichloropropane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
2,2-Dichloropropane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1-Dichloropropene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
cis-1,3-Dichloropropene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
trans-1,3-Dichloropropene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Ethylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Hexachlorobutadiene	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
2-Hexanone (MBK)	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Isopropylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
4-Isopropyltoluene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Methyl tert-butyl ether	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
4-Methyl-2-pentanone (MIBK)	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Methylene Chloride	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Naphthalene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
N-Propylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Styrene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1,1,2-Tetrachloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1,2,2-Tetrachloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Tetrachloroethene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Toluene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2,3-Trichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2,4-Trichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,3,5-Trichlorobenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1,1-Trichloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,1,2-Trichloroethane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Trichloroethene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1

Client Sample ID: MW-108 (13-15)-DUP
Lab Sample ID: 620-22848-8

Date Collected: 12/10/24 11:55
Matrix: Solid

Date Received: 12/11/24 18:46
Percent Solids: 86.9

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane (Freon 11)	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2,3-Trichloropropane	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,2,4-Trimethylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,3,5-Trimethylbenzene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Vinyl chloride	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
m,p-Xylene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
o-Xylene	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Tetrahydrofuran	ND		7.13		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Ethyl ether	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Tert-amyl methyl ether	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Ethyl tert-butyl ether	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
di-Isopropyl ether	ND		3.57		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
tert-Butanol	ND		71.3		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
1,4-Dioxane	ND		71.3		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
trans-1,4-Dichloro-2-butene	ND		17.8		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1
Ethanol	ND		713		ug/Kg	☼	12/13/24 15:48	12/14/24 01:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:34*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:34*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/13/24 15:48*	*12/14/24 01:34*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
1,2,4-Trichlorobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
1,2-Dichlorobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
1,3-Dichlorobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
1,4-Dichlorobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
1-Methylnaphthalene	ND		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4,5-Trichlorophenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4,6-Trichlorophenol	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4-Dichlorophenol	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4-Dimethylphenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4-Dinitrophenol	ND		3750		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,4-Dinitrotoluene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2,6-Dinitrotoluene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Chloronaphthalene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Chlorophenol	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Methylnaphthalene	ND		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Methylphenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Nitroaniline	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
2-Nitrophenol	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
3 & 4 Methylphenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
3,3'-Dichlorobenzidine	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
3-Nitroaniline	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4,6-Dinitro-2-methylphenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4-Bromophenyl phenyl ether	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4-Chloro-3-methylphenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1

Client Sample ID: MW-108 (13-15)-DUP

Lab Sample ID: 620-22848-8

Date Collected: 12/10/24 11:55
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.9

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4-Chlorophenyl phenyl ether	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4-Nitroaniline	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
4-Nitrophenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Acenaphthene	**542**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Acenaphthylene	**687**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Aniline	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Anthracene	**1890**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Azobenzene/Diphenyldiazene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzidine	ND	*- *1	3750		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzo[a]anthracene	**5060**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzo[a]pyrene	**5040**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzo[b]fluoranthene	**5750**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzo[g,h,i]perylene	**3600**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzo[k]fluoranthene	**4670**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzoic acid	**3230**		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Benzyl alcohol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Bis(2-chloroethoxy)methane	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Bis(2-chloroethyl)ether	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
bis (2-chloroisopropyl) ether	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Bis(2-ethylhexyl) phthalate	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Butyl benzyl phthalate	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Carbazole	**1250**		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Chrysene	**6550**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Dibenz(a,h)anthracene	**1370**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Dibenzofuran	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Diethyl phthalate	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Dimethyl phthalate	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Di-n-butyl phthalate	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Di-n-octyl phthalate	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Fluoranthene	**12200**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Fluorene	**729**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Hexachlorobenzene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Hexachlorobutadiene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Hexachlorocyclopentadiene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Hexachloroethane	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Indeno[1,2,3-cd]pyrene	**3300**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Isophorone	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Naphthalene	**515**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Nitrobenzene	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
N-Nitrosodimethylamine	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
N-Nitrosodi-n-propylamine	ND		948		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
N-Nitrosodiphenylamine	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Pentachloronitrobenzene	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Pentachlorophenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Phenanthrene	**10600**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Phenol	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Pyrene	**12000**		379		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1
Pyridine	ND		1870		ug/Kg	☼	12/13/24 11:09	12/17/24 21:23	1

Client Sample ID: MW-108 (13-15)-DUP
Lab Sample ID: 620-22848-8

Date Collected: 12/10/24 11:55
Matrix: Solid

Date Received: 12/11/24 18:46
Percent Solids: 86.9

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:23*	*1*
2-Fluorophenol (Surr)	*103*		*15 - 110*	*12/13/24 11:09*	*12/17/24 21:23*	*1*
Nitrobenzene-d5 (Surr)	*81*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:23*	*1*
Phenol-d5 (Surr)	*95*		*15 - 110*	*12/13/24 11:09*	*12/17/24 21:23*	*1*
2,4,6-Tribromophenol (Surr)	*118*	*S1+*	*15 - 110*	*12/13/24 11:09*	*12/17/24 21:23*	*1*
Terphenyl-d14 (Surr)	*90*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:23*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		3.87	mg/Kg	☼	12/18/24 11:15	12/18/24 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*70*		*70 - 130*	*12/18/24 11:15*	*12/18/24 15:09*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**393**		75.0	mg/Kg	☼	12/13/24 13:01	12/16/24 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*40 - 140*	*12/13/24 13:01*	*12/16/24 19:37*	*1*
1-Chlorooctadecane	*87*		*40 - 140*	*12/13/24 13:01*	*12/16/24 19:37*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1221	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1232	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1242	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1248	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1254	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1260	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1262	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1
PCB-1268	ND		22.7	ug/Kg	☼	12/12/24 15:24	12/16/24 21:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*36*		*30 - 150*	*12/12/24 15:24*	*12/16/24 21:25*	*1*
DCB Decachlorobiphenyl (Surr)	*133*		*30 - 150*	*12/12/24 15:24*	*12/16/24 21:25*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		8.73	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Arsenic	ND		2.62	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Beryllium	ND		0.873	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Cadmium	ND		0.873	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Chromium	**16.3**		1.75	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Copper	**8.42**		1.75	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Lead	**17.3**		2.62	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Nickel	**3.18**		1.75	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Selenium	ND		2.62	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Silver	ND		2.62	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Thallium	ND		5.24	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2
Zinc	**33.0**		5.24	mg/Kg	☼	12/16/24 08:50	12/17/24 15:27	2

Client Sample ID: MW-108 (13-15)-DUP

Lab Sample ID: 620-22848-8
Date Collected: 12/10/24 11:55
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.9

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0506		mg/Kg	☼	12/16/24 11:21	12/16/24 17:05	1

Client Sample ID: Trip Blank

Lab Sample ID: 620-22848-9
Date Collected: 12/09/24 08:00
Matrix: Solid
Date Received: 12/11/24 18:46

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Acetone	ND		50.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Acrylonitrile	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Benzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Bromobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Bromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Bromodichloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Bromoform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Bromomethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
n-Butylbenzene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Carbon disulfide	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Chlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Chloroethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Chloroform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Chloromethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Dibromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Dibromomethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Ethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: Trip Blank

Date Collected: 12/09/24 08:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-9

Matrix: Solid

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Isopropylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Methylene Chloride	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Naphthalene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
N-Propylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Styrene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Tetrachloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Toluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Trichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Vinyl chloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
m,p-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
o-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Ethyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
tert-Butanol	ND		100		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
1,4-Dioxane	ND		100		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/13/24 15:48	12/13/24 20:07	1
Ethanol	ND		1000		ug/Kg		12/13/24 15:48	12/13/24 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*12/13/24 15:48*	*12/13/24 20:07*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 20:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/13/24 20:07*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*12/13/24 15:48*	*12/13/24 20:07*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DCA	DBFM
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
620-22848-1	SB-4 (0-2)	93	97	101	102
620-22848-2	SB-2 (0-2)	96	98	116	104
620-22848-3	MW-102 (0-2)	94	97	102	101
620-22848-4	MW-101 (5-6)	98	98	104	102
620-22848-5	MW-102 (13-15)	98	98	104	101
620-22848-6	MW-107 (13-15)	97	98	104	102
620-22848-7	MW-108 (13-15)	98	99	105	103
620-22848-8	MW-108 (13-15)-DUP	99	99	112	103
620-22848-9	Trip Blank	96	98	99	100
LCS 620-42500/1-A	Lab Control Sample	97	100	101	100
LCSD 620-42500/2-A	Lab Control Sample Dup	98	100	100	101
MB 620-42500/3-A	Method Blank	97	98	99	100

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TBP	TPHL
Lab Sample ID	Client Sample ID	(30-130)	(15-110)	(30-130)	(15-110)	(15-110)	(30-130)
620-22848-1	SB-4 (0-2)	55	72	55	64	83	58
620-22848-2	SB-2 (0-2)	55	72	58	67	65	57
620-22848-3	MW-102 (0-2)	56	73	56	66	82	57
620-22848-4	MW-101 (5-6)	75	94	74	87	104	75
620-22848-5	MW-102 (13-15)	86	122 S1+	86	109	95	92
620-22848-6	MW-107 (13-15)	77	106	76	96	86	85
620-22848-7	MW-108 (13-15)	78	87	73	85	64	83
620-22848-8	MW-108 (13-15)-DUP	85	103	81	95	118 S1+	90
LCS 620-42474/2-A	Lab Control Sample	76	95	76	90	85	78
LCS 620-42656/2-A	Lab Control Sample	72	86	71	82	78	70
LCSD 620-42474/3-A	Lab Control Sample Dup	77	96	77	91	86	78
LCSD 620-42656/3-A	Lab Control Sample Dup	72	84	72	83	78	73
MB 620-42474/1-A	Method Blank	74	97	75	90	70	73
MB 620-42656/1-A	Method Blank	57	75	60	70	48	57

Surrogate Legend

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

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22848-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	25DBTf1 (70-130)
620-22848-1	SB-4 (0-2)	74
620-22848-2	SB-2 (0-2)	78
620-22848-3	MW-102 (0-2)	80
620-22848-4	MW-101 (5-6)	85
620-22848-5	MW-102 (13-15)	74
620-22848-6	MW-107 (13-15)	91
620-22848-7	MW-108 (13-15)	59 S1-
620-22848-8	MW-108 (13-15)-DUP	70
LCS 620-42618/1-A	Lab Control Sample	103
LCS 620-42660/1-A	Lab Control Sample	102
LCSD 620-42618/2-A	Lab Control Sample Dup	102
LCSD 620-42660/2-A	Lab Control Sample Dup	105
MB 620-42618/3-A	Method Blank	100
MB 620-42660/3-A	Method Blank	102

Surrogate Legend

25DBTf = 2,5-Dibromotoluene (fid)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTPH (40-140)	1COD (40-140)
620-22848-1	SB-4 (0-2)	52	53
620-22848-2	SB-2 (0-2)	63	83
620-22848-3	MW-102 (0-2)	117	121
620-22848-4	MW-101 (5-6)	81	93
620-22848-5	MW-102 (13-15)	58	79
620-22848-6	MW-107 (13-15)	64	92
620-22848-7	MW-108 (13-15)	65	89
620-22848-8	MW-108 (13-15)-DUP	94	87
LCS 620-42483/2-A	Lab Control Sample	79	81
LCSD 620-42483/3-A	Lab Control Sample Dup	86	88
MB 620-42483/1-A	Method Blank	57	50

Surrogate Legend

OTPH = o-Terphenyl
1COD = 1-Chlorooctadecane

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX2 (30-150)	DCB1 (30-150)
620-22848-1	SB-4 (0-2)	32	282 S1+

Surrogate Legend

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

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22848-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(30-150)	(30-150)
620-22848-2	SB-2 (0-2)	14 S1-	51
620-22848-5	MW-102 (13-15)	51	75
620-22848-8	MW-108 (13-15)-DUP	36	133
LCS 620-42434/2-A	Lab Control Sample	44	97
LCSD 620-42434/3-A	Lab Control Sample Dup	44	115
MB 620-42434/1-A	Method Blank	40	101

Surrogate Legend

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

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)
620-22848-3	MW-102 (0-2)	23 S1-	103 p
620-22848-4	MW-101 (5-6)	50	112 p
620-22848-7	MW-108 (13-15)	43	104 p

Surrogate Legend

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

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

Lab Sample ID: MB 620-42500/3-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Acetone	ND		50.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Acrylonitrile	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Benzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromodichloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromoform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromomethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
n-Butylbenzene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Carbon disulfide	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloroethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloroform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloromethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dibromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dibromomethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Isopropylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Methylene Chloride	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1

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

Lab Sample ID: MB 620-42500/3-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
N-Propylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Styrene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tetrachloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Toluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Trichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Vinyl chloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
m,p-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
o-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
tert-Butanol	ND		100		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,4-Dioxane	ND		100		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethanol	ND		1000		ug/Kg		12/13/24 15:48	12/13/24 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	19.93		ug/Kg		100	70 - 130		
Acetone			20.0	21.89	J	ug/Kg		109	70 - 130		
Acrylonitrile			20.0	20.36		ug/Kg		102	70 - 130		
Benzene			20.0	20.40		ug/Kg		102	70 - 130		
Bromobenzene			20.0	19.98		ug/Kg		100	70 - 130		
Bromochloromethane			20.0	20.57		ug/Kg		103	70 - 130		
Bromodichloromethane			20.0	19.81		ug/Kg		99	70 - 130		

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

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromoform	20.0	19.10		ug/Kg		95	70 - 130
Bromomethane	20.0	21.57		ug/Kg		108	70 - 130
2-Butanone (MEK)	20.0	21.42		ug/Kg		107	70 - 130
n-Butylbenzene	20.0	20.93		ug/Kg		105	70 - 130
sec-Butylbenzene	20.0	21.03		ug/Kg		105	70 - 130
tert-Butylbenzene	20.0	21.06		ug/Kg		105	70 - 130
Carbon disulfide	20.0	20.63		ug/Kg		103	70 - 130
Carbon tetrachloride	20.0	19.91		ug/Kg		100	70 - 130
Chlorobenzene	20.0	20.15		ug/Kg		101	70 - 130
Chloroethane	20.0	19.51		ug/Kg		98	70 - 130
Chloroform	20.0	20.08		ug/Kg		100	70 - 130
Chloromethane	20.0	20.18		ug/Kg		101	70 - 130
2-Chlorotoluene	20.0	20.05		ug/Kg		100	70 - 130
4-Chlorotoluene	20.0	19.86		ug/Kg		99	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.48		ug/Kg		97	70 - 130
Dibromochloromethane	20.0	19.68		ug/Kg		98	70 - 130
1,2-Dibromoethane (EDB)	20.0	20.35		ug/Kg		102	70 - 130
Dibromomethane	20.0	20.31		ug/Kg		102	70 - 130
1,2-Dichlorobenzene	20.0	20.39		ug/Kg		102	70 - 130
1,3-Dichlorobenzene	20.0	20.06		ug/Kg		100	70 - 130
1,4-Dichlorobenzene	20.0	20.06		ug/Kg		100	70 - 130
Dichlorodifluoromethane (Freon 12)	20.0	19.04		ug/Kg		95	70 - 130
1,1-Dichloroethane	20.0	20.10		ug/Kg		101	70 - 130
1,2-Dichloroethane	20.0	20.16		ug/Kg		101	70 - 130
1,1-Dichloroethene	20.0	20.22		ug/Kg		101	70 - 130
cis-1,2-Dichloroethene	20.0	20.24		ug/Kg		101	70 - 130
trans-1,2-Dichloroethene	20.0	20.26		ug/Kg		101	70 - 130
1,2-Dichloropropane	20.0	20.18		ug/Kg		101	70 - 130
1,3-Dichloropropane	20.0	20.40		ug/Kg		102	70 - 130
2,2-Dichloropropane	20.0	19.90		ug/Kg		100	70 - 130
1,1-Dichloropropene	20.0	20.07		ug/Kg		100	70 - 130
cis-1,3-Dichloropropene	20.0	19.79		ug/Kg		99	70 - 130
trans-1,3-Dichloropropene	20.0	19.89		ug/Kg		99	70 - 130
Ethylbenzene	20.0	20.38		ug/Kg		102	70 - 130
Hexachlorobutadiene	20.0	21.98		ug/Kg		110	70 - 130
2-Hexanone (MBK)	20.0	19.06		ug/Kg		95	70 - 130
Isopropylbenzene	20.0	20.45		ug/Kg		102	70 - 130
4-Isopropyltoluene	20.0	20.95		ug/Kg		105	70 - 130
Methyl tert-butyl ether	20.0	20.69		ug/Kg		103	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	19.36		ug/Kg		97	70 - 130
Methylene Chloride	20.0	21.74		ug/Kg		109	70 - 130
Naphthalene	20.0	20.94		ug/Kg		105	70 - 130
N-Propylbenzene	20.0	20.56		ug/Kg		103	70 - 130
Styrene	20.0	20.34		ug/Kg		102	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.78		ug/Kg		99	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.65		ug/Kg		93	70 - 130
Tetrachloroethene	20.0	19.42		ug/Kg		97	70 - 130
Toluene	20.0	20.25		ug/Kg		101	70 - 130

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

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3-Trichlorobenzene			20.0	21.30		ug/Kg		106	70 - 130		
1,2,4-Trichlorobenzene			20.0	19.83		ug/Kg		99	70 - 130		
1,3,5-Trichlorobenzene			20.0	20.68		ug/Kg		103	70 - 130		
1,1,1-Trichloroethane			20.0	20.14		ug/Kg		101	70 - 130		
1,1,2-Trichloroethane			20.0	19.96		ug/Kg		100	70 - 130		
Trichloroethene			20.0	21.17		ug/Kg		106	70 - 130		
Trichlorofluoromethane (Freon 11)			20.0	19.59		ug/Kg		98	70 - 130		
1,2,3-Trichloropropane			20.0	19.98		ug/Kg		100	70 - 130		
1,2,4-Trimethylbenzene			20.0	20.39		ug/Kg		102	70 - 130		
1,3,5-Trimethylbenzene			20.0	20.30		ug/Kg		101	70 - 130		
Vinyl chloride			20.0	19.93		ug/Kg		100	70 - 130		
m,p-Xylene			20.0	20.09		ug/Kg		100	70 - 130		
o-Xylene			20.0	20.13		ug/Kg		101	70 - 130		
Tetrahydrofuran			20.0	19.44		ug/Kg		97	70 - 130		
Ethyl ether			20.0	20.22		ug/Kg		101	70 - 130		
Tert-amyl methyl ether			20.0	20.23		ug/Kg		101	70 - 130		
Ethyl tert-butyl ether			20.0	20.47		ug/Kg		102	70 - 130		
di-Isopropyl ether			20.0	20.44		ug/Kg		102	70 - 130		
tert-Butanol			200	181.6		ug/Kg		91	70 - 130		
1,4-Dioxane			200	179.5		ug/Kg		90	70 - 130		
trans-1,4-Dichloro-2-butene			20.0	18.68	J	ug/Kg		93	70 - 130		
Ethanol			400	370.0	J	ug/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 620-42500/2-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	20.28		ug/Kg		101	70 - 130	2	30
Acetone			20.0	24.81	J	ug/Kg		124	70 - 130	13	30
Acrylonitrile			20.0	21.25		ug/Kg		106	70 - 130	4	30
Benzene			20.0	21.33		ug/Kg		107	70 - 130	4	30
Bromobenzene			20.0	20.63		ug/Kg		103	70 - 130	3	30
Bromochloromethane			20.0	21.14		ug/Kg		106	70 - 130	3	30
Bromodichloromethane			20.0	21.04		ug/Kg		105	70 - 130	6	30
Bromoform			20.0	19.96		ug/Kg		100	70 - 130	4	30
Bromomethane			20.0	22.28		ug/Kg		111	70 - 130	3	30
2-Butanone (MEK)			20.0	22.16		ug/Kg		111	70 - 130	3	30
n-Butylbenzene			20.0	20.69		ug/Kg		103	70 - 130	1	30
sec-Butylbenzene			20.0	21.47		ug/Kg		107	70 - 130	2	30
tert-Butylbenzene			20.0	21.55		ug/Kg		108	70 - 130	2	30

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

Lab Sample ID: LCSD 620-42500/2-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon disulfide			20.0	21.20		ug/Kg		106	70 - 130	3	30
Carbon tetrachloride			20.0	20.46		ug/Kg		102	70 - 130	3	30
Chlorobenzene			20.0	20.76		ug/Kg		104	70 - 130	3	30
Chloroethane			20.0	19.89		ug/Kg		99	70 - 130	2	30
Chloroform			20.0	20.87		ug/Kg		104	70 - 130	4	30
Chloromethane			20.0	21.23		ug/Kg		106	70 - 130	5	30
2-Chlorotoluene			20.0	20.96		ug/Kg		105	70 - 130	4	30
4-Chlorotoluene			20.0	20.50		ug/Kg		103	70 - 130	3	30
1,2-Dibromo-3-Chloropropane			20.0	21.02		ug/Kg		105	70 - 130	8	30
Dibromochloromethane			20.0	20.50		ug/Kg		102	70 - 130	4	30
1,2-Dibromoethane (EDB)			20.0	21.17		ug/Kg		106	70 - 130	4	30
Dibromomethane			20.0	20.61		ug/Kg		103	70 - 130	1	30
1,2-Dichlorobenzene			20.0	21.68		ug/Kg		108	70 - 130	6	30
1,3-Dichlorobenzene			20.0	20.35		ug/Kg		102	70 - 130	1	30
1,4-Dichlorobenzene			20.0	20.45		ug/Kg		102	70 - 130	2	30
Dichlorodifluoromethane (Freon 12)			20.0	19.39		ug/Kg		97	70 - 130	2	30
1,1-Dichloroethane			20.0	21.17		ug/Kg		106	70 - 130	5	30
1,2-Dichloroethane			20.0	21.06		ug/Kg		105	70 - 130	4	30
1,1-Dichloroethene			20.0	21.00		ug/Kg		105	70 - 130	4	30
cis-1,2-Dichloroethene			20.0	21.89		ug/Kg		109	70 - 130	8	30
trans-1,2-Dichloroethene			20.0	20.85		ug/Kg		104	70 - 130	3	30
1,2-Dichloropropane			20.0	21.58		ug/Kg		108	70 - 130	7	30
1,3-Dichloropropane			20.0	21.45		ug/Kg		107	70 - 130	5	30
2,2-Dichloropropane			20.0	21.16		ug/Kg		106	70 - 130	6	30
1,1-Dichloropropene			20.0	20.62		ug/Kg		103	70 - 130	3	30
cis-1,3-Dichloropropene			20.0	20.56		ug/Kg		103	70 - 130	4	30
trans-1,3-Dichloropropene			20.0	20.48		ug/Kg		102	70 - 130	3	30
Ethylbenzene			20.0	21.13		ug/Kg		106	70 - 130	4	30
Hexachlorobutadiene			20.0	21.77		ug/Kg		109	70 - 130	1	30
2-Hexanone (MBK)			20.0	19.31		ug/Kg		97	70 - 130	1	30
Isopropylbenzene			20.0	21.27		ug/Kg		106	70 - 130	4	30
4-Isopropyltoluene			20.0	21.34		ug/Kg		107	70 - 130	2	30
Methyl tert-butyl ether			20.0	21.53		ug/Kg		108	70 - 130	4	30
4-Methyl-2-pentanone (MIBK)			20.0	19.29		ug/Kg		96	70 - 130	0	30
Methylene Chloride			20.0	22.31		ug/Kg		112	70 - 130	3	30
Naphthalene			20.0	22.37		ug/Kg		112	70 - 130	7	30
N-Propylbenzene			20.0	20.87		ug/Kg		104	70 - 130	2	30
Styrene			20.0	20.88		ug/Kg		104	70 - 130	3	30
1,1,1,2-Tetrachloroethane			20.0	20.75		ug/Kg		104	70 - 130	5	30
1,1,2,2-Tetrachloroethane			20.0	20.09		ug/Kg		100	70 - 130	7	30
Tetrachloroethene			20.0	19.82		ug/Kg		99	70 - 130	2	30
Toluene			20.0	21.16		ug/Kg		106	70 - 130	4	30
1,2,3-Trichlorobenzene			20.0	21.81		ug/Kg		109	70 - 130	2	30
1,2,4-Trichlorobenzene			20.0	20.38		ug/Kg		102	70 - 130	3	30
1,3,5-Trichlorobenzene			20.0	20.86		ug/Kg		104	70 - 130	1	30
1,1,1-Trichloroethane			20.0	20.94		ug/Kg		105	70 - 130	4	30
1,1,2-Trichloroethane			20.0	21.27		ug/Kg		106	70 - 130	6	30
Trichloroethene			20.0	21.42		ug/Kg		107	70 - 130	1	30

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

Lab Sample ID: LCSD 620-42500/2-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichlorofluoromethane (Freon 11)			20.0	20.03		ug/Kg		100	70 - 130	2	30
1,2,3-Trichloropropane			20.0	21.12		ug/Kg		106	70 - 130	6	30
1,2,4-Trimethylbenzene			20.0	21.02		ug/Kg		105	70 - 130	3	30
1,3,5-Trimethylbenzene			20.0	21.16		ug/Kg		106	70 - 130	4	30
Vinyl chloride			20.0	21.10		ug/Kg		105	70 - 130	6	30
m,p-Xylene			20.0	20.70		ug/Kg		104	70 - 130	3	30
o-Xylene			20.0	21.27		ug/Kg		106	70 - 130	6	30
Tetrahydrofuran			20.0	21.00		ug/Kg		105	70 - 130	8	30
Ethyl ether			20.0	20.93		ug/Kg		105	70 - 130	3	30
Tert-amyl methyl ether			20.0	21.43		ug/Kg		107	70 - 130	6	30
Ethyl tert-butyl ether			20.0	21.36		ug/Kg		107	70 - 130	4	30
di-Isopropyl ether			20.0	21.55		ug/Kg		108	70 - 130	5	30
tert-Butanol			200	188.6		ug/Kg		94	70 - 130	4	30
1,4-Dioxane			200	180.4		ug/Kg		90	70 - 130	1	30
trans-1,4-Dichloro-2-butene			20.0	18.67	J	ug/Kg		93	70 - 130	0	30
Ethanol			400	391.0	J	ug/Kg		98	70 - 130	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*

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

Lab Sample ID: MB 620-42474/1-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42474

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Chloronaphthalene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Chlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Nitroaniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1

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

Lab Sample ID: MB 620-42474/1-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42474

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3-Nitroaniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chloroaniline	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Nitroaniline	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Nitrophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Acenaphthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Acenaphthylene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Aniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzidine	ND		660		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzoic acid	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzyl alcohol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Carbazole	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Chrysene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dibenzofuran	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Diethyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dimethyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Fluorene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorobenzene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorobutadiene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachloroethane	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Isophorone	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Naphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Nitrobenzene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1

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

Lab Sample ID: MB 620-42474/1-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42474

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pentachlorophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Phenanthrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Phenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pyridine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
2-Fluorophenol (Surr)	*97*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Nitrobenzene-d5 (Surr)	*75*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Phenol-d5 (Surr)	*90*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*

Lab Sample ID: LCS 620-42474/2-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	1670	1101		ug/Kg		66	22 - 93
1,2,4-Trichlorobenzene	1670	1187		ug/Kg		71	18 - 112
1,2-Dichlorobenzene	1670	1183		ug/Kg		71	21 - 107
1,3-Dichlorobenzene	1670	1219		ug/Kg		73	21 - 105
1,4-Dichlorobenzene	1670	1193		ug/Kg		72	20 - 107
1-Methylnaphthalene	1670	1347		ug/Kg		81	30 - 109
2,4,5-Trichlorophenol	1670	1244		ug/Kg		75	41 - 98
2,4,6-Trichlorophenol	1670	1192		ug/Kg		72	37 - 103
2,4-Dichlorophenol	1670	1274		ug/Kg		76	36 - 94
2,4-Dimethylphenol	1670	1152		ug/Kg		69	33 - 86
2,4-Dinitrophenol	1670	1208		ug/Kg		72	10 - 117
2,4-Dinitrotoluene	1670	1489		ug/Kg		89	22 - 129
2,6-Dinitrotoluene	1670	1306		ug/Kg		78	19 - 132
2-Chloronaphthalene	1670	1262		ug/Kg		76	20 - 117
2-Chlorophenol	1670	1375		ug/Kg		82	42 - 92
2-Methylnaphthalene	1670	1314		ug/Kg		79	10 - 153
2-Methylphenol	1670	1454		ug/Kg		87	39 - 96
2-Nitroaniline	1670	1440		ug/Kg		86	34 - 110
2-Nitrophenol	1670	1273		ug/Kg		76	32 - 100
3 & 4 Methylphenol	1670	1324		ug/Kg		79	30 - 100
3,3'-Dichlorobenzidine	1670	1211		ug/Kg		73	43 - 140
3-Nitroaniline	1670	1059		ug/Kg		64	10 - 104
4,6-Dinitro-2-methylphenol	1670	1535		ug/Kg		92	13 - 120
4-Bromophenyl phenyl ether	1670	1245		ug/Kg		75	10 - 138
4-Chloro-3-methylphenol	1670	1301		ug/Kg		78	10 - 138
4-Chloroaniline	1670	676.1		ug/Kg		41	10 - 100
4-Chlorophenyl phenyl ether	1670	1179		ug/Kg		71	10 - 132

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

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

Lab Sample ID: LCS 620-42474/2-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Nitroaniline	1670	1269		ug/Kg		76	10 - 150
4-Nitrophenol	1670	1064		ug/Kg		64	10 - 123
Acenaphthene	1670	1272		ug/Kg		76	35 - 93
Acenaphthylene	1670	1223		ug/Kg		73	36 - 94
Aniline	1670	814.2		ug/Kg		49	13 - 78
Anthracene	1670	1305		ug/Kg		78	34 - 120
Azobenzene/Diphenyldiazene	1670	1255		ug/Kg		75	35 - 92
Benzidine	1670	ND	*-	ug/Kg		-14	10 - 95
Benzo[a]anthracene	1670	1283		ug/Kg		77	39 - 113
Benzo[a]pyrene	1670	1326		ug/Kg		80	38 - 109
Benzo[b]fluoranthene	1670	1246		ug/Kg		75	29 - 113
Benzo[g,h,i]perylene	1670	1472		ug/Kg		88	35 - 108
Benzo[k]fluoranthene	1670	1462		ug/Kg		88	28 - 112
Benzoic acid	1670	562.8		ug/Kg		34	10 - 82
Benzyl alcohol	1670	1197		ug/Kg		72	14 - 105
Bis(2-chloroethoxy)methane	1670	1263		ug/Kg		76	10 - 119
Bis(2-chloroethyl)ether	1670	1473		ug/Kg		88	10 - 111
bis (2-chloroisopropyl) ether	1670	1083		ug/Kg		65	10 - 122
Bis(2-ethylhexyl) phthalate	1670	1403		ug/Kg		84	10 - 150
Butyl benzyl phthalate	1670	1413		ug/Kg		85	10 - 150
Carbazole	1670	1243		ug/Kg		75	38 - 106
Chrysene	1670	1341		ug/Kg		80	38 - 109
Dibenz(a,h)anthracene	1670	1315		ug/Kg		79	34 - 103
Dibenzofuran	1670	1281		ug/Kg		77	17 - 121
Diethyl phthalate	1670	1325		ug/Kg		79	10 - 139
Dimethyl phthalate	1670	1343		ug/Kg		81	11 - 135
Di-n-butyl phthalate	1670	1342		ug/Kg		81	10 - 150
Di-n-octyl phthalate	1670	1290		ug/Kg		77	10 - 150
Fluoranthene	1670	1260		ug/Kg		76	36 - 111
Fluorene	1670	1304		ug/Kg		78	35 - 98
Hexachlorobenzene	1670	1308		ug/Kg		78	20 - 125
Hexachlorobutadiene	1670	946.6		ug/Kg		57	12 - 108
Hexachlorocyclopentadiene	1670	1453		ug/Kg		87	18 - 128
Hexachloroethane	1670	1231		ug/Kg		74	21 - 105
Indeno[1,2,3-cd]pyrene	1670	1351		ug/Kg		81	32 - 103
Isophorone	1670	1171		ug/Kg		70	10 - 96
Naphthalene	1670	1321		ug/Kg		79	31 - 94
Nitrobenzene	1670	1254		ug/Kg		75	13 - 117
N-Nitrosodimethylamine	1670	979.5		ug/Kg		59	10 - 100
N-Nitrosodi-n-propylamine	1670	1385		ug/Kg		83	10 - 134
N-Nitrosodiphenylamine	1670	1292		ug/Kg		78	14 - 139
Pentachloronitrobenzene	1670	1114		ug/Kg		67	19 - 108
Pentachlorophenol	1670	934.3		ug/Kg		56	20 - 93
Phenanthrene	1670	1220		ug/Kg		73	35 - 101
Phenol	1670	1429		ug/Kg		86	34 - 94
Pyrene	1670	1330		ug/Kg		80	31 - 116
Pyridine	1670	747.0		ug/Kg		45	10 - 94

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

Lab Sample ID: LCS 620-42474/2-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42474

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	76		30 - 130
2-Fluorophenol (Surr)	95		15 - 110
Nitrobenzene-d5 (Surr)	76		30 - 130
Phenol-d5 (Surr)	90		15 - 110
2,4,6-Tribromophenol (Surr)	85		15 - 110
Terphenyl-d14 (Surr)	78		30 - 130

Lab Sample ID: LCSD 620-42474/3-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42474

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			1670	1099		ug/Kg		66	22 - 93	0	30
1,2,4-Trichlorobenzene			1670	1186		ug/Kg		71	18 - 112	0	30
1,2-Dichlorobenzene			1670	1194		ug/Kg		72	21 - 107	1	30
1,3-Dichlorobenzene			1670	1218		ug/Kg		73	21 - 105	0	30
1,4-Dichlorobenzene			1670	1193		ug/Kg		72	20 - 107	0	30
1-Methylnaphthalene			1670	1339		ug/Kg		80	30 - 109	1	30
2,4,5-Trichlorophenol			1670	1254		ug/Kg		75	41 - 98	1	30
2,4,6-Trichlorophenol			1670	1183		ug/Kg		71	37 - 103	1	30
2,4-Dichlorophenol			1670	1278		ug/Kg		77	36 - 94	0	30
2,4-Dimethylphenol			1670	1177		ug/Kg		71	33 - 86	2	30
2,4-Dinitrophenol			1670	1237		ug/Kg		74	10 - 117	2	30
2,4-Dinitrotoluene			1670	1481		ug/Kg		89	22 - 129	1	30
2,6-Dinitrotoluene			1670	1313		ug/Kg		79	19 - 132	1	30
2-Chloronaphthalene			1670	1245		ug/Kg		75	20 - 117	1	30
2-Chlorophenol			1670	1373		ug/Kg		82	42 - 92	0	30
2-Methylnaphthalene			1670	1302		ug/Kg		78	10 - 153	1	30
2-Methylphenol			1670	1470		ug/Kg		88	39 - 96	1	30
2-Nitroaniline			1670	1441		ug/Kg		86	34 - 110	0	30
2-Nitrophenol			1670	1269		ug/Kg		76	32 - 100	0	30
3 & 4 Methylphenol			1670	1334		ug/Kg		80	30 - 100	1	30
3,3'-Dichlorobenzidine			1670	1322		ug/Kg		79	43 - 140	9	30
3-Nitroaniline			1670	1116		ug/Kg		67	10 - 104	5	30
4,6-Dinitro-2-methylphenol			1670	1585		ug/Kg		95	13 - 120	3	30
4-Bromophenyl phenyl ether			1670	1244		ug/Kg		75	10 - 138	0	30
4-Chloro-3-methylphenol			1670	1309		ug/Kg		79	10 - 138	1	30
4-Chloroaniline			1670	744.3		ug/Kg		45	10 - 100	10	30
4-Chlorophenyl phenyl ether			1670	1179		ug/Kg		71	10 - 132	0	30
4-Nitroaniline			1670	1333		ug/Kg		80	10 - 150	5	30
4-Nitrophenol			1670	1074		ug/Kg		64	10 - 123	1	30
Acenaphthene			1670	1256		ug/Kg		75	35 - 93	1	30
Acenaphthylene			1670	1233		ug/Kg		74	36 - 94	1	30
Aniline			1670	880.8		ug/Kg		53	13 - 78	8	30
Anthracene			1670	1294		ug/Kg		78	34 - 120	1	30
Azobenzene/Diphenyldiazene			1670	1249		ug/Kg		75	35 - 92	0	30
Benzidine			1670	ND	*- *1	ug/Kg		-7	10 - 95	68	30
Benzo[a]anthracene			1670	1303		ug/Kg		78	39 - 113	2	30

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

Lab Sample ID: LCSD 620-42474/3-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42474

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene			1670	1307		ug/Kg		78	38 - 109	1	30
Benzo[b]fluoranthene			1670	1319		ug/Kg		79	29 - 113	6	30
Benzo[g,h,i]perylene			1670	1456		ug/Kg		87	35 - 108	1	30
Benzo[k]fluoranthene			1670	1312		ug/Kg		79	28 - 112	11	30
Benzoic acid			1670	656.4		ug/Kg		39	10 - 82	15	30
Benzyl alcohol			1670	1190		ug/Kg		71	14 - 105	1	30
Bis(2-chloroethoxy)methane			1670	1262		ug/Kg		76	10 - 119	0	30
Bis(2-chloroethyl)ether			1670	1447		ug/Kg		87	10 - 111	2	30
bis (2-chloroisopropyl) ether			1670	1089		ug/Kg		65	10 - 122	1	30
Bis(2-ethylhexyl) phthalate			1670	1417		ug/Kg		85	10 - 150	1	30
Butyl benzyl phthalate			1670	1408		ug/Kg		84	10 - 150	0	30
Carbazole			1670	1243		ug/Kg		75	38 - 106	0	30
Chrysene			1670	1327		ug/Kg		80	38 - 109	1	30
Dibenz(a,h)anthracene			1670	1326		ug/Kg		80	34 - 103	1	30
Dibenzofuran			1670	1266		ug/Kg		76	17 - 121	1	30
Diethyl phthalate			1670	1309		ug/Kg		79	10 - 139	1	30
Dimethyl phthalate			1670	1314		ug/Kg		79	11 - 135	2	30
Di-n-butyl phthalate			1670	1320		ug/Kg		79	10 - 150	2	30
Di-n-octyl phthalate			1670	1261		ug/Kg		76	10 - 150	2	30
Fluoranthene			1670	1251		ug/Kg		75	36 - 111	1	30
Fluorene			1670	1291		ug/Kg		77	35 - 98	1	30
Hexachlorobenzene			1670	1306		ug/Kg		78	20 - 125	0	30
Hexachlorobutadiene			1670	941.7		ug/Kg		57	12 - 108	1	30
Hexachlorocyclopentadiene			1670	1475		ug/Kg		89	18 - 128	2	30
Hexachloroethane			1670	1243		ug/Kg		75	21 - 105	1	30
Indeno[1,2,3-cd]pyrene			1670	1339		ug/Kg		80	32 - 103	1	30
Isophorone			1670	1165		ug/Kg		70	10 - 96	1	30
Naphthalene			1670	1317		ug/Kg		79	31 - 94	0	30
Nitrobenzene			1670	1268		ug/Kg		76	13 - 117	1	30
N-Nitrosodimethylamine			1670	996.8		ug/Kg		60	10 - 100	2	30
N-Nitrosodi-n-propylamine			1670	1391		ug/Kg		83	10 - 134	0	30
N-Nitrosodiphenylamine			1670	1295		ug/Kg		78	14 - 139	0	30
Pentachloronitrobenzene			1670	1105		ug/Kg		66	19 - 108	1	30
Pentachlorophenol			1670	979.8		ug/Kg		59	20 - 93	5	30
Phenanthrene			1670	1212		ug/Kg		73	35 - 101	1	30
Phenol			1670	1417		ug/Kg		85	34 - 94	1	30
Pyrene			1670	1334		ug/Kg		80	31 - 116	0	30
Pyridine			1670	744.6		ug/Kg		45	10 - 94	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*
2-Fluorophenol (Surr)	*96*		*15 - 110*
Nitrobenzene-d5 (Surr)	*77*		*30 - 130*
Phenol-d5 (Surr)	*91*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*86*		*15 - 110*
Terphenyl-d14 (Surr)	*78*		*30 - 130*

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chloronaphthalene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Nitrophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Nitroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Nitrophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Aniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzidine	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzoic acid	ND		833		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzyl alcohol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Carbazole	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenzofuran	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Diethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dimethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluorene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobutadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachloroethane	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Isophorone	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Naphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Nitrobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenanthrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyridine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
2-Fluorophenol (Surr)	*75*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Nitrobenzene-d5 (Surr)	*60*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Phenol-d5 (Surr)	*70*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
2,4,6-Tribromophenol (Surr)	*48*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	1670	1017		ug/Kg		61	22 - 93
1,2,4-Trichlorobenzene	1670	1068		ug/Kg		64	18 - 112
1,2-Dichlorobenzene	1670	1096		ug/Kg		66	21 - 107
1,3-Dichlorobenzene	1670	1132		ug/Kg		68	21 - 105
1,4-Dichlorobenzene	1670	1104		ug/Kg		66	20 - 107
1-Methylnaphthalene	1670	1233		ug/Kg		74	30 - 109
2,4,5-Trichlorophenol	1670	1189		ug/Kg		71	41 - 98
2,4,6-Trichlorophenol	1670	1099		ug/Kg		66	37 - 103

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

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	1670	1160		ug/Kg		70	36 - 94
2,4-Dimethylphenol	1670	1062		ug/Kg		64	33 - 86
2,4-Dinitrophenol	1670	879.8		ug/Kg		53	10 - 117
2,4-Dinitrotoluene	1670	1289		ug/Kg		77	22 - 129
2,6-Dinitrotoluene	1670	1186		ug/Kg		71	19 - 132
2-Chloronaphthalene	1670	1174		ug/Kg		70	20 - 117
2-Chlorophenol	1670	1247		ug/Kg		75	42 - 92
2-Methylnaphthalene	1670	1163		ug/Kg		70	10 - 153
2-Methylphenol	1670	1311		ug/Kg		79	39 - 96
2-Nitroaniline	1670	1335		ug/Kg		80	34 - 110
2-Nitrophenol	1670	1143		ug/Kg		69	32 - 100
3 & 4 Methylphenol	1670	1203		ug/Kg		72	30 - 100
3,3'-Dichlorobenzidine	1670	1199		ug/Kg		72	43 - 140
3-Nitroaniline	1670	1083		ug/Kg		65	10 - 104
4,6-Dinitro-2-methylphenol	1670	904.0		ug/Kg		54	13 - 120
4-Bromophenyl phenyl ether	1670	1150		ug/Kg		69	10 - 138
4-Chloro-3-methylphenol	1670	1166		ug/Kg		70	10 - 138
4-Chloroaniline	1670	688.5		ug/Kg		41	10 - 100
4-Chlorophenyl phenyl ether	1670	1069		ug/Kg		64	10 - 132
4-Nitroaniline	1670	1262		ug/Kg		76	10 - 150
4-Nitrophenol	1670	884.4		ug/Kg		53	10 - 123
Acenaphthene	1670	1155		ug/Kg		69	35 - 93
Acenaphthylene	1670	1148		ug/Kg		69	36 - 94
Aniline	1670	776.6		ug/Kg		47	13 - 78
Anthracene	1670	1207		ug/Kg		72	34 - 120
Azobenzene/Diphenyldiazene	1670	1214		ug/Kg		73	35 - 92
Benzidine	1670	ND	*-	ug/Kg		-1	10 - 95
Benzo[a]anthracene	1670	1194		ug/Kg		72	39 - 113
Benzo[a]pyrene	1670	1196		ug/Kg		72	38 - 109
Benzo[b]fluoranthene	1670	1227		ug/Kg		74	29 - 113
Benzo[g,h,i]perylene	1670	1289		ug/Kg		77	35 - 108
Benzo[k]fluoranthene	1670	1137		ug/Kg		68	28 - 112
Benzoic acid	1670	879.4		ug/Kg		53	10 - 82
Benzyl alcohol	1670	1078		ug/Kg		65	14 - 105
Bis(2-chloroethoxy)methane	1670	1122		ug/Kg		67	10 - 119
Bis(2-chloroethyl)ether	1670	1307		ug/Kg		78	10 - 111
bis (2-chloroisopropyl) ether	1670	1051		ug/Kg		63	10 - 122
Bis(2-ethylhexyl) phthalate	1670	1204		ug/Kg		72	10 - 150
Butyl benzyl phthalate	1670	1227		ug/Kg		74	10 - 150
Carbazole	1670	1159		ug/Kg		70	38 - 106
Chrysene	1670	1214		ug/Kg		73	38 - 109
Dibenz(a,h)anthracene	1670	1174		ug/Kg		70	34 - 103
Dibenzofuran	1670	1151		ug/Kg		69	17 - 121
Diethyl phthalate	1670	1130		ug/Kg		68	10 - 139
Dimethyl phthalate	1670	1179		ug/Kg		71	11 - 135
Di-n-butyl phthalate	1670	1156		ug/Kg		69	10 - 150
Di-n-octyl phthalate	1670	1083		ug/Kg		65	10 - 150
Fluoranthene	1670	1124		ug/Kg		67	36 - 111
Fluorene	1670	1198		ug/Kg		72	35 - 98

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

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexachlorobenzene			1670	1185		ug/Kg		71	20 - 125		
Hexachlorobutadiene			1670	835.7		ug/Kg		50	12 - 108		
Hexachlorocyclopentadiene			1670	872.4		ug/Kg		52	18 - 128		
Hexachloroethane			1670	1141		ug/Kg		68	21 - 105		
Indeno[1,2,3-cd]pyrene			1670	1207		ug/Kg		72	32 - 103		
Isophorone			1670	1050		ug/Kg		63	10 - 96		
Naphthalene			1670	1209		ug/Kg		73	31 - 94		
Nitrobenzene			1670	1170		ug/Kg		70	13 - 117		
N-Nitrosodimethylamine			1670	1013		ug/Kg		61	10 - 100		
N-Nitrosodi-n-propylamine			1670	1283		ug/Kg		77	10 - 134		
N-Nitrosodiphenylamine			1670	1230		ug/Kg		74	14 - 139		
Pentachloronitrobenzene			1670	1001		ug/Kg		60	19 - 108		
Pentachlorophenol			1670	578.2		ug/Kg		35	20 - 93		
Phenanthrene			1670	1135		ug/Kg		68	35 - 101		
Phenol			1670	1293		ug/Kg		78	34 - 94		
Pyrene			1670	1238		ug/Kg		74	31 - 116		
Pyridine			1670	794.3		ug/Kg		48	10 - 94		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*
2-Fluorophenol (Surr)	*86*		*15 - 110*
Nitrobenzene-d5 (Surr)	*71*		*30 - 130*
Phenol-d5 (Surr)	*82*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*70*		*30 - 130*

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			1670	1040		ug/Kg		62	22 - 93	2	30
1,2,4-Trichlorobenzene			1670	1096		ug/Kg		66	18 - 112	3	30
1,2-Dichlorobenzene			1670	1118		ug/Kg		67	21 - 107	2	30
1,3-Dichlorobenzene			1670	1161		ug/Kg		70	21 - 105	3	30
1,4-Dichlorobenzene			1670	1126		ug/Kg		68	20 - 107	2	30
1-Methylnaphthalene			1670	1261		ug/Kg		76	30 - 109	2	30
2,4,5-Trichlorophenol			1670	1196		ug/Kg		72	41 - 98	1	30
2,4,6-Trichlorophenol			1670	1138		ug/Kg		68	37 - 103	3	30
2,4-Dichlorophenol			1670	1150		ug/Kg		69	36 - 94	1	30
2,4-Dimethylphenol			1670	1091		ug/Kg		65	33 - 86	3	30
2,4-Dinitrophenol			1670	711.8		ug/Kg		43	10 - 117	21	30
2,4-Dinitrotoluene			1670	1342		ug/Kg		81	22 - 129	4	30
2,6-Dinitrotoluene			1670	1231		ug/Kg		74	19 - 132	4	30
2-Chloronaphthalene			1670	1204		ug/Kg		72	20 - 117	3	30
2-Chlorophenol			1670	1273		ug/Kg		76	42 - 92	2	30
2-Methylnaphthalene			1670	1197		ug/Kg		72	10 - 153	3	30
2-Methylphenol			1670	1356		ug/Kg		81	39 - 96	3	30

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

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Nitroaniline			1670	1367		ug/Kg		82	34 - 110	2	30
2-Nitrophenol			1670	1166		ug/Kg		70	32 - 100	2	30
3 & 4 Methylphenol			1670	1227		ug/Kg		74	30 - 100	2	30
3,3'-Dichlorobenzidine			1670	1350		ug/Kg		81	43 - 140	12	30
3-Nitroaniline			1670	1145		ug/Kg		69	10 - 104	6	30
4,6-Dinitro-2-methylphenol			1670	932.3		ug/Kg		56	13 - 120	3	30
4-Bromophenyl phenyl ether			1670	1172		ug/Kg		70	10 - 138	2	30
4-Chloro-3-methylphenol			1670	1200		ug/Kg		72	10 - 138	3	30
4-Chloroaniline			1670	759.4		ug/Kg		46	10 - 100	10	30
4-Chlorophenyl phenyl ether			1670	1090		ug/Kg		65	10 - 132	2	30
4-Nitroaniline			1670	1316		ug/Kg		79	10 - 150	4	30
4-Nitrophenol			1670	889.9		ug/Kg		53	10 - 123	1	30
Acenaphthene			1670	1179		ug/Kg		71	35 - 93	2	30
Acenaphthylene			1670	1182		ug/Kg		71	36 - 94	3	30
Aniline			1670	828.8		ug/Kg		50	13 - 78	7	30
Anthracene			1670	1249		ug/Kg		75	34 - 120	3	30
Azobenzene/Diphenyldiazene			1670	1235		ug/Kg		74	35 - 92	2	30
Benzidine			1670	ND	*- *1	ug/Kg		-2	10 - 95	42	30
Benzo[a]anthracene			1670	1288		ug/Kg		77	39 - 113	8	30
Benzo[a]pyrene			1670	1305		ug/Kg		78	38 - 109	9	30
Benzo[b]fluoranthene			1670	1164		ug/Kg		70	29 - 113	5	30
Benzo[g,h,i]perylene			1670	1384		ug/Kg		83	35 - 108	7	30
Benzo[k]fluoranthene			1670	1429		ug/Kg		86	28 - 112	23	30
Benzoic acid			1670	843.0		ug/Kg		51	10 - 82	4	30
Benzyl alcohol			1670	1091		ug/Kg		65	14 - 105	1	30
Bis(2-chloroethoxy)methane			1670	1148		ug/Kg		69	10 - 119	2	30
Bis(2-chloroethyl)ether			1670	1335		ug/Kg		80	10 - 111	2	30
bis (2-chloroisopropyl) ether			1670	1077		ug/Kg		65	10 - 122	2	30
Bis(2-ethylhexyl) phthalate			1670	1279		ug/Kg		77	10 - 150	6	30
Butyl benzyl phthalate			1670	1331		ug/Kg		80	10 - 150	8	30
Carbazole			1670	1208		ug/Kg		73	38 - 106	4	30
Chrysene			1670	1316		ug/Kg		79	38 - 109	8	30
Dibenz(a,h)anthracene			1670	1264		ug/Kg		76	34 - 103	7	30
Dibenzofuran			1670	1178		ug/Kg		71	17 - 121	2	30
Diethyl phthalate			1670	1175		ug/Kg		71	10 - 139	4	30
Dimethyl phthalate			1670	1215		ug/Kg		73	11 - 135	3	30
Di-n-butyl phthalate			1670	1197		ug/Kg		72	10 - 150	4	30
Di-n-octyl phthalate			1670	1165		ug/Kg		70	10 - 150	7	30
Fluoranthene			1670	1179		ug/Kg		71	36 - 111	5	30
Fluorene			1670	1232		ug/Kg		74	35 - 98	3	30
Hexachlorobenzene			1670	1227		ug/Kg		74	20 - 125	4	30
Hexachlorobutadiene			1670	856.5		ug/Kg		51	12 - 108	2	30
Hexachlorocyclopentadiene			1670	901.3		ug/Kg		54	18 - 128	3	30
Hexachloroethane			1670	1175		ug/Kg		71	21 - 105	3	30
Indeno[1,2,3-cd]pyrene			1670	1297		ug/Kg		78	32 - 103	7	30
Isophorone			1670	1073		ug/Kg		64	10 - 96	2	30
Naphthalene			1670	1243		ug/Kg		75	31 - 94	3	30
Nitrobenzene			1670	1205		ug/Kg		72	13 - 117	3	30
N-Nitrosodimethylamine			1670	1035		ug/Kg		62	10 - 100	2	30

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

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine			1670	1310		ug/Kg		79	10 - 134	2	30
N-Nitrosodiphenylamine			1670	1261		ug/Kg		76	14 - 139	2	30
Pentachloronitrobenzene			1670	1040		ug/Kg		62	19 - 108	4	30
Pentachlorophenol			1670	683.1		ug/Kg		41	20 - 93	17	30
Phenanthrene			1670	1166		ug/Kg		70	35 - 101	3	30
Phenol			1670	1321		ug/Kg		79	34 - 94	2	30
Pyrene			1670	1309		ug/Kg		79	31 - 116	6	30
Pyridine			1670	802.8		ug/Kg		48	10 - 94	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*
2-Fluorophenol (Surr)	*84*		*15 - 110*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*
Phenol-d5 (Surr)	*83*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*73*		*30 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 620-42618/3-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42618

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.00		mg/Kg		12/17/24 14:08	12/17/24 19:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*100*		*70 - 130*	*12/17/24 14:08*	*12/17/24 19:32*	*1*

Lab Sample ID: LCS 620-42618/1-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42618

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10			12.5	10.41		mg/Kg		83	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*103*		*70 - 130*

Lab Sample ID: LCSD 620-42618/2-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42618

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10			12.5	10.22		mg/Kg		82	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 620-42660/3-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42660

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.00		mg/Kg		12/18/24 10:42	12/18/24 12:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*	*12/18/24 10:42*	*12/18/24 12:38*	*1*

Lab Sample ID: LCS 620-42660/1-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42660

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10			12.5	9.880		mg/Kg		79	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*

Lab Sample ID: LCSD 620-42660/2-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42660

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10			12.5	9.917		mg/Kg		79	70 - 130	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*105*		*70 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 620-42483/1-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42483

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		13.3		mg/Kg		12/13/24 13:01	12/16/24 13:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*57*		*40 - 140*	*12/13/24 13:01*	*12/16/24 13:52*	*1*
1-Chlorooctadecane	*50*		*40 - 140*	*12/13/24 13:01*	*12/16/24 13:52*	*1*

Lab Sample ID: LCS 620-42483/2-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42483

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			335	241.9		mg/Kg		72	33 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*79*		*40 - 140*

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 620-42483/2-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42483

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	81		40 - 140

Lab Sample ID: LCSD 620-42483/3-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42483

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			335	259.8		mg/Kg		77	33 - 110	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	86		40 - 140
1-Chlorooctadecane	88		40 - 140

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 620-42434/1-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42434

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1221	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1232	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1242	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1248	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1254	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1260	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1262	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1268	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	40		30 - 150	12/12/24 15:24	12/16/24 18:09	1
DCB Decachlorobiphenyl (Surr)	101		30 - 150	12/12/24 15:24	12/16/24 18:09	1

Lab Sample ID: LCS 620-42434/2-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42434

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			167	133.2		ug/Kg		80	59 - 130		
PCB-1260			167	142.9		ug/Kg		86	58 - 134		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	44		30 - 150
DCB Decachlorobiphenyl (Surr)	97		30 - 150

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 620-42434/3-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42434

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			167	128.9		ug/Kg		77	59 - 130	3	30
PCB-1260			167	127.6		ug/Kg		77	58 - 134	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*44*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*115*		*30 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 620-42524/1-A
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42524

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.04		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Arsenic	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Beryllium	ND		0.904		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Cadmium	ND		0.904		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Chromium	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Copper	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Lead	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Nickel	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Selenium	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Silver	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Thallium	ND		5.42		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Zinc	ND		5.42		mg/Kg		12/16/24 08:50	12/17/24 13:13	1

Lab Sample ID: LCSSRM 620-42524/2-A ^5
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42524

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			121	81.43		mg/Kg		67.3	0.0 - 200.8		
Arsenic			242	237.0		mg/Kg		97.9	81.8 - 118.6		
Beryllium			160	159.0		mg/Kg		99.4	82.5 - 117.5		
Cadmium			84.3	88.77		mg/Kg		105.3	82.2 - 117.8		
Chromium			239	217.4		mg/Kg		91.0	72.4 - 106.3		
Copper			217	193.4		mg/Kg		89.1	74.7 - 105.1		
Lead			194	197.6		mg/Kg		101.8	82.0 - 118.6		
Nickel			298	305.0		mg/Kg		102.3	82.2 - 117.8		
Selenium			272	262.0		mg/Kg		96.3	80.1 - 119.5		

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 620-42524/2-A ^5
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42524

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Silver	76.7	71.99		mg/Kg		93.9	79.5 - 120.5
Thallium	108	107.3		mg/Kg		99.4	80.0 - 119.4
Zinc	236	282.4		mg/Kg		119.7	80.1 - 120.3

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 620-42543/1-A
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42543

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0500		mg/Kg		12/16/24 11:21	12/16/24 16:35	1

Lab Sample ID: LCSSRM 620-42543/2-A ^50
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42543

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	22.8	22.07		mg/Kg		96.8	70.6 - 129.4

Lab Sample ID: 620-22848-1 MS
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: SB-4 (0-2)
Prep Type: Total/NA
Prep Batch: 42543

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.0767	F2 F1	0.216	0.2481		mg/Kg	☼	79	75 - 125

Lab Sample ID: 620-22848-1 MSD
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: SB-4 (0-2)
Prep Type: Total/NA
Prep Batch: 42543

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0767	F2 F1	0.208	0.1972	F2 F1	mg/Kg	☼	58	75 - 125	23	20

Lab Sample ID: 620-22848-1 DU
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: SB-4 (0-2)
Prep Type: Total/NA
Prep Batch: 42543

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.0767	F2 F1	0.9267	F3	mg/Kg	☼	169	20

GC/MS VOA

Pre Prep Batch: 42396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	Frozen Preserve	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22848-6	MW-107 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	Frozen Preserve	
620-22848-9	Trip Blank	Total/NA	Solid	Frozen Preserve	

Prep Batch: 42500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	5035	42396
620-22848-2	SB-2 (0-2)	Total/NA	Solid	5035	42396
620-22848-3	MW-102 (0-2)	Total/NA	Solid	5035	42396
620-22848-4	MW-101 (5-6)	Total/NA	Solid	5035	42396
620-22848-5	MW-102 (13-15)	Total/NA	Solid	5035	42396
620-22848-6	MW-107 (13-15)	Total/NA	Solid	5035	42396
620-22848-7	MW-108 (13-15)	Total/NA	Solid	5035	42396
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	5035	42396
620-22848-9	Trip Blank	Total/NA	Solid	5035	42396
MB 620-42500/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42500/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42500/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 42502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	8260C	42500
620-22848-2	SB-2 (0-2)	Total/NA	Solid	8260C	42500
620-22848-3	MW-102 (0-2)	Total/NA	Solid	8260C	42500
620-22848-4	MW-101 (5-6)	Total/NA	Solid	8260C	42500
620-22848-5	MW-102 (13-15)	Total/NA	Solid	8260C	42500
620-22848-6	MW-107 (13-15)	Total/NA	Solid	8260C	42500
620-22848-7	MW-108 (13-15)	Total/NA	Solid	8260C	42500
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	8260C	42500
620-22848-9	Trip Blank	Total/NA	Solid	8260C	42500
MB 620-42500/3-A	Method Blank	Total/NA	Solid	8260C	42500
LCS 620-42500/1-A	Lab Control Sample	Total/NA	Solid	8260C	42500
LCSD 620-42500/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	42500

GC/MS Semi VOA

Prep Batch: 42474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-5	MW-102 (13-15)	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 42474 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-6	MW-107 (13-15)	Total/NA	Solid	3546	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	3546	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	3546	
MB 620-42474/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42474/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42474/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-5	MW-102 (13-15)	Total/NA	Solid	8270D	42474
620-22848-6	MW-107 (13-15)	Total/NA	Solid	8270D	42474
620-22848-7	MW-108 (13-15)	Total/NA	Solid	8270D	42474
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	8270D	42474
MB 620-42474/1-A	Method Blank	Total/NA	Solid	8270D	42474
LCS 620-42474/2-A	Lab Control Sample	Total/NA	Solid	8270D	42474
LCSD 620-42474/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42474

Prep Batch: 42656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	3546	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	3546	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	3546	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	3546	
MB 620-42656/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	8270D	42656
620-22848-2	SB-2 (0-2)	Total/NA	Solid	8270D	42656
620-22848-3	MW-102 (0-2)	Total/NA	Solid	8270D	42656
620-22848-4	MW-101 (5-6)	Total/NA	Solid	8270D	42656
MB 620-42656/1-A	Method Blank	Total/NA	Solid	8270D	42656
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	8270D	42656
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42656

GC VOA

Analysis Batch: 42588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	8015D	42618
620-22848-2	SB-2 (0-2)	Total/NA	Solid	8015D	42618
620-22848-3	MW-102 (0-2)	Total/NA	Solid	8015D	42618
620-22848-4	MW-101 (5-6)	Total/NA	Solid	8015D	42618
620-22848-5	MW-102 (13-15)	Total/NA	Solid	8015D	42618
620-22848-6	MW-107 (13-15)	Total/NA	Solid	8015D	42618
MB 620-42618/3-A	Method Blank	Total/NA	Solid	8015D	42618
LCS 620-42618/1-A	Lab Control Sample	Total/NA	Solid	8015D	42618
LCSD 620-42618/2-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42618

GC VOA

Prep Batch: 42618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	5035	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	5035	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	5035	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	5035	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	5035	
620-22848-6	MW-107 (13-15)	Total/NA	Solid	5035	
MB 620-42618/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42618/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42618/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 42659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-7	MW-108 (13-15)	Total/NA	Solid	8015D	42660
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	8015D	42660
MB 620-42660/3-A	Method Blank	Total/NA	Solid	8015D	42660
LCS 620-42660/1-A	Lab Control Sample	Total/NA	Solid	8015D	42660
LCSD 620-42660/2-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42660

Prep Batch: 42660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-7	MW-108 (13-15)	Total/NA	Solid	5035	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	5035	
MB 620-42660/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42660/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42660/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 42434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	3546	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	3546	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	3546	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	3546	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	3546	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	3546	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	3546	
MB 620-42434/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42434/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42434/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Prep Batch: 42483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	3546	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	3546	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	3546	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	3546	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	3546	
620-22848-6	MW-107 (13-15)	Total/NA	Solid	3546	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	3546	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 42483 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 620-42483/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42483/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42483/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	8082A	42434
620-22848-2	SB-2 (0-2)	Total/NA	Solid	8082A	42434
620-22848-3	MW-102 (0-2)	Total/NA	Solid	8082A	42434
620-22848-4	MW-101 (5-6)	Total/NA	Solid	8082A	42434
620-22848-5	MW-102 (13-15)	Total/NA	Solid	8082A	42434
620-22848-7	MW-108 (13-15)	Total/NA	Solid	8082A	42434
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	8082A	42434
MB 620-42434/1-A	Method Blank	Total/NA	Solid	8082A	42434
LCS 620-42434/2-A	Lab Control Sample	Total/NA	Solid	8082A	42434
LCSD 620-42434/3-A	Lab Control Sample Dup	Total/NA	Solid	8082A	42434

Analysis Batch: 42540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	8015D	42483
620-22848-2	SB-2 (0-2)	Total/NA	Solid	8015D	42483
620-22848-3	MW-102 (0-2)	Total/NA	Solid	8015D	42483
620-22848-4	MW-101 (5-6)	Total/NA	Solid	8015D	42483
620-22848-5	MW-102 (13-15)	Total/NA	Solid	8015D	42483
620-22848-6	MW-107 (13-15)	Total/NA	Solid	8015D	42483
620-22848-7	MW-108 (13-15)	Total/NA	Solid	8015D	42483
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	8015D	42483
MB 620-42483/1-A	Method Blank	Total/NA	Solid	8015D	42483
LCS 620-42483/2-A	Lab Control Sample	Total/NA	Solid	8015D	42483
LCSD 620-42483/3-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42483

Metals

Prep Batch: 42524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	3050B	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	3050B	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	3050B	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	3050B	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	3050B	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	3050B	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	3050B	
MB 620-42524/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 620-42524/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 42543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	7471B	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	7471B	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	7471B	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	7471B	

Metals (Continued)

Prep Batch: 42543 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-5	MW-102 (13-15)	Total/NA	Solid	7471B	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	7471B	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	7471B	
MB 620-42543/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 620-42543/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	
620-22848-1 MS	SB-4 (0-2)	Total/NA	Solid	7471B	
620-22848-1 MSD	SB-4 (0-2)	Total/NA	Solid	7471B	
620-22848-1 DU	SB-4 (0-2)	Total/NA	Solid	7471B	

Analysis Batch: 42625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	6010D	42524
MB 620-42524/1-A	Method Blank	Total/NA	Solid	6010D	42524
LCSSRM 620-42524/2-A ^5	Lab Control Sample	Total/NA	Solid	6010D	42524

Analysis Batch: 42649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	7471B	42543
620-22848-2	SB-2 (0-2)	Total/NA	Solid	7471B	42543
620-22848-3	MW-102 (0-2)	Total/NA	Solid	7471B	42543
620-22848-4	MW-101 (5-6)	Total/NA	Solid	7471B	42543
620-22848-5	MW-102 (13-15)	Total/NA	Solid	7471B	42543
620-22848-7	MW-108 (13-15)	Total/NA	Solid	7471B	42543
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	7471B	42543
MB 620-42543/1-A	Method Blank	Total/NA	Solid	7471B	42543
LCSSRM 620-42543/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	42543
620-22848-1 MS	SB-4 (0-2)	Total/NA	Solid	7471B	42543
620-22848-1 MSD	SB-4 (0-2)	Total/NA	Solid	7471B	42543
620-22848-1 DU	SB-4 (0-2)	Total/NA	Solid	7471B	42543

Analysis Batch: 42674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-2	SB-2 (0-2)	Total/NA	Solid	6010D	42524
620-22848-3	MW-102 (0-2)	Total/NA	Solid	6010D	42524
620-22848-4	MW-101 (5-6)	Total/NA	Solid	6010D	42524
620-22848-5	MW-102 (13-15)	Total/NA	Solid	6010D	42524
620-22848-7	MW-108 (13-15)	Total/NA	Solid	6010D	42524
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	6010D	42524

General Chemistry

Analysis Batch: 42379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22848-1	SB-4 (0-2)	Total/NA	Solid	Moisture	
620-22848-2	SB-2 (0-2)	Total/NA	Solid	Moisture	
620-22848-3	MW-102 (0-2)	Total/NA	Solid	Moisture	
620-22848-4	MW-101 (5-6)	Total/NA	Solid	Moisture	
620-22848-5	MW-102 (13-15)	Total/NA	Solid	Moisture	
620-22848-6	MW-107 (13-15)	Total/NA	Solid	Moisture	
620-22848-7	MW-108 (13-15)	Total/NA	Solid	Moisture	
620-22848-8	MW-108 (13-15)-DUP	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-4 (0-2)
Date Collected: 12/09/24 08:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-4 (0-2)
Date Collected: 12/09/24 08:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-1
Matrix: Solid
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/13/24 22:37
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 18:57
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 20:08
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		5	42540	BJJ	EET RI	12/16/24 15:26
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 19:38
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42625	JPC	EET RI	12/17/24 14:37
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 16:41

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/13/24 23:02
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 17:39
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 20:42
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 18:03

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-2 (0-2)
Date Collected: 12/09/24 09:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-2
Matrix: Solid
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 19:56
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 14:57
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 16:54

Client Sample ID: MW-102 (0-2)
Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-102 (0-2)
Date Collected: 12/09/24 10:50
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-3
Matrix: Solid
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/13/24 23:28
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 18:05
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 21:17
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 16:33
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 20:14
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:03
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 16:57

Client Sample ID: MW-101 (5-6)
Date Collected: 12/10/24 08:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-101 (5-6)

Lab Sample ID: 620-22848-4
Date Collected: 12/10/24 08:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/13/24 23:54
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 18:31
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 21:52
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/17/24 00:18
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 20:31
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:09
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 16:59

Client Sample ID: MW-102 (13-15)

Lab Sample ID: 620-22848-5
Date Collected: 12/10/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-102 (13-15)

Lab Sample ID: 620-22848-5
Date Collected: 12/10/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 00:19
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 19:11
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 22:26
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 18:26
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 20:49
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:15
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:01

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-107 (13-15)
Date Collected: 12/10/24 10:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-107 (13-15)
Date Collected: 12/10/24 10:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-6
Matrix: Solid
Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 00:44
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 19:37
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 23:01
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 18:50

Client Sample ID: MW-108 (13-15)
Date Collected: 12/10/24 11:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-108 (13-15)
Date Collected: 12/10/24 11:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-7
Matrix: Solid
Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 01:09
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 20:57
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 14:34
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 19:13
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 21:07
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:21
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:03

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-108 (13-15)-DUP
Date Collected: 12/10/24 11:55
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-108 (13-15)-DUP
Date Collected: 12/10/24 11:55
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-8
Matrix: Solid
Percent Solids: 86.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 01:34
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 21:23
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 15:09
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 19:37
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 21:25
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:27
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:05

Client Sample ID: Trip Blank
Date Collected: 12/09/24 08:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22848-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/10/24 14:40
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/13/24 20:07

Laboratory References:
EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22848-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Laboratory: Eurofins Rhode Island

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	7165.01	01-31-26
Connecticut	State	PH-0722	06-30-26
Maine	State	RI00100	05-09-25
Massachusetts	State	M-RI907	06-30-25
New Hampshire	NELAP	2245	09-17-25
New Jersey	NELAP	RI008	06-30-25
New York	NELAP	11393	04-01-25
Rhode Island	State	LAI00368	12-31-25

Method Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22848-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET RI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET RI
8015D	Gasoline Range Organics (GRO) (GC)	SW846	EET RI
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET RI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET RI
6010D	Metals (ICP)	SW846	EET RI
7471B	Mercury (CVAA)	SW846	EET RI
Moisture	Percent Moisture	EPA	EET RI
3050B	Preparation, Metals	SW846	EET RI
3546	Microwave Extraction	SW846	EET RI
5035	Closed System Purge and Trap	SW846	EET RI
7471B	Preparation, Mercury	SW846	EET RI
Frozen Preserve	Freezing Samples	None	EET RI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22848-1
SDG: 198 Potter Hill Road, Westerly, RI

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
620-22848-1	SB-4 (0-2)	Solid	12/09/24 08:45	12/11/24 18:46
620-22848-2	SB-2 (0-2)	Solid	12/09/24 09:40	12/11/24 18:46
620-22848-3	MW-102 (0-2)	Solid	12/09/24 10:50	12/11/24 18:46
620-22848-4	MW-101 (5-6)	Solid	12/10/24 08:00	12/11/24 18:46
620-22848-5	MW-102 (13-15)	Solid	12/10/24 09:15	12/11/24 18:46
620-22848-6	MW-107 (13-15)	Solid	12/10/24 10:40	12/11/24 18:46
620-22848-7	MW-108 (13-15)	Solid	12/10/24 11:45	12/11/24 18:46
620-22848-8	MW-108 (13-15)-DUP	Solid	12/10/24 11:55	12/11/24 18:46
620-22848-9	Trip Blank	Solid	12/09/24 08:00	12/11/24 18:46

CHAIN OF CUSTODY

22848

PAGE OF

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** **Phone #:** H. Joel Walcott 800-220-6119 JWalcott@gesonline.com fax GESInbox@gesonline.com **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047436	Groundwater & Environmental Services, Inc. ap@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Sample Type (Grab or Comp)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): VOCs 8260	SVOCs 8270	TPH DRO/GRO	PCBs 8082	Total PP13 Metals	LAB USE ONLY
-1	SB-4 (0-2)	Grab	12/9/24	0845	MJ	SO	8					4	2	2			X	X	X	X	X	
-2	SB-2 (0-2)	Grab	12/9/24	0940	MJ	SO	8					4	2	2			X	X	X	X	X	
-3	MW-102 (0-2)	Grab	12/9/24	1050	MJ	SO	8					4	2	2			X	X	X	X	X	
-4	MW-101 (5-6)	Grab	12/10/24	0800	MJ	SO	8					4	2	2			X	X	X	X	X	
-5	MW-102 (13-15)	Grab	12/10/24	0915	MJ	SO	8					4	2	2			X	X	X	X	X	
-6	MW-107 (13-15)	Grab	12/10/24	1040	MJ	SO	6					2	2	2			X	X	X			
-7	MW-108 (13-15)	Grab	12/10/24	1145	MJ	SO	8					4	2	2			X	X	X	X	X	
-8	MW-108 (13-15)-DUP	Grab	12/10/24	1155	MJ	SO	8					4	2	2			X	X	X	X	X	
-9	Trip Blank	Grab	12/9/24	0800	MJ	TB	3						2	1			X					

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Turnaround Time (Business Days)

- ◉ Standard 14 days
- ○ 1 day RUSH
- ○ Other _____ days

Lab PM Approval / Date

_____ /
_____ /
_____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Email: _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Data Deliverable Information

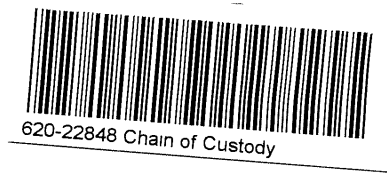
- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B" (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler	Date / Time	Received By
1	Matthew Jusino	12/10/24 1440	GES Freezer
2	Jeremy Hardon	12/11/24 1206	
3		12/11/24 1846	

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp _____

3.0 +0.2 3.2/3.0 +0.2 3.2 #6



12/27/2024

\\svr84\dw05\wndr\Dashboard\Planning\1047436

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 620-22848-1
SDG Number: 198 Potter Hill Road, Westerly, RI

Login Number: 22848
List Number: 1
Creator: Makhoul, Elie

List Source: Eurofins Rhode Island

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Joel Walcott
Groundwater & Environmental Services Inc
508 Thomson Park Drive
Cranberry Township, Pennsylvania 16066

Generated 12/27/2024 9:25:29 AM

JOB DESCRIPTION

GES - RIDEM MPA-48

JOB NUMBER

620-22849-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

See page two for job notes and contact information.

Job Notes

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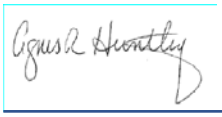
The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Qualifiers

GC/MS VOA

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.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
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.

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
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: 620-22849-1 Eurofins Rhode Island

Job Narrative
620-22849-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be 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.

Receipt
The samples were received on 12/11/2024 6:46 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 3.2°C and 3.2°C.

GC/MS VOA
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: Due to the dark color and viscosity of the extract, the following samples could not be concentrated to the final method required volume: MW-101 (0-2) (620-22849-2). The reporting limits (RLs) are elevated proportionately.

Method 8270D: Due to the dark and oily extract, the following samples could not be concentrated to the final method required volume: MW-106 (0-2) (620-22849-7) and MW-105 (0-2) (620-22849-10). The reporting limits (RLs) are elevated proportionately.

Method 8270D: The continuing calibration verification (CCV) associated with batch 620-42595 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCVIS 620-42595/3).

Method 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzidine. The analyte may have a %D >50%.

Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 620-42474 and analytical batch 620-42595 recovered outside control limits for the following analyte: Benzidine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Any detection should be considered an estimate, bias low. Batch precision also exceeded control limits for these analyte. These results have been reported and qualified.

Method 8270D: The large number of analytes included in the continuing calibration verification (CCV) gives a high probability that one or more analytes will be outside acceptance criteria. As indicated in the reference method, analysis may proceed as long as no more than 10% of the analytes of interest are outside the method-defined %D criteria. Hexachlorocyclopentadiene, N-Nitrosodi-n-propylamine and Bis(2-chloroethyl)ether.

Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 620-42656 and analytical batch 620-42700 recovered outside control limits for the following analyte: Benzidine. Benzidine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Any detection for this analyte is considered an estimate. The analyte recovered within acceptance limits in the CCV. Batch precision also exceeded control limits for these analyte. These results have been reported and qualified.

Method 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: MW-106 (0-2) (620-22849-7) and MW-105 (0-2) (620-22849-10). These results have been reported and qualified.

Method 8270D: The following samples were diluted due to the nature of the sample matrix; dark, viscous, coating the vial: MW-108 (0-2) (620-22849-4), MW-106 (0-2) (620-22849-7) and MW-105 (0-2) (620-22849-10). Elevated reporting limits (RLs) are provided.

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

Gasoline Range Organics
Method 8015D_GRO: Surrogate recovery for the following sample was outside control limits: SB-3 (0-2) (620-22849-13). Re-analysis was performed and surrogate recovery was outside control limits.

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

Diesel Range Organics
Method 8015D_DRO: Due to the matrix extract being dark and viscous, the following samples could not be concentrated to the final method required volume: MW-105 (0-2) (620-22849-10). The reporting limits (RLs) are elevated proportionately.

Method 8015D_DRO: Due to the oily extract, the following samples could not be concentrated to the final method required volume: MW-103 (0-2) (620-22849-6), SB-8 (4-5) (620-22849-8) and SB-8 (4-5)-DUP (620-22849-9). The reporting limits (RLs) are elevated proportionately.

Method 8015D_DRO: Due to the matrix dark and oily extract, the following sample could not be concentrated to the final method required volume: MW-106 (0-2) (620-22849-7). The reporting limit (RL) is elevated proportionately.

Method 8015D_DRO: Surrogate recovery for the following sample was outside control limits: MW-106 (0-2) (620-22849-7). Evidence of pattern interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

PCBs
Method 8082A: The continuing calibration verification (CCV) associated with 620-42512 recovered outside the control limits for Tetrachloro-m-xylene on the primary column. Results are confirmed on both columns and reported from the passing confirmation column. The associated samples are: (CCV 620-42512/31) and (CCV 620-42512/48).

Method 8082A: Surrogate recovery for the following samples were outside control limits: MW-108 (0-2) (620-22849-4) and MW-105 (0-2) (620-22849-10). Evidence of sample pattern interference is present; therefore, re-extraction and/or re-analysis was not performed.

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: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
C10-C28	28.1		15.0		mg/Kg	1	☼	8015D	Total/NA
Chromium	2.25		2.00		mg/Kg	2	☼	6010D	Total/NA
Copper	3.73		2.00		mg/Kg	2	☼	6010D	Total/NA
Lead	4.18		2.99		mg/Kg	2	☼	6010D	Total/NA
Zinc	9.35		5.99		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Anthracene	501		395		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	942		395		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	876		395		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	1140		395		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	567		395		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	889		395		ug/Kg	1	☼	8270D	Total/NA
Benzoic acid	3330		1950		ug/Kg	1	☼	8270D	Total/NA
Chrysene	1190		395		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	2120		395		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	566		395		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	2080		395		ug/Kg	1	☼	8270D	Total/NA
Pyrene	1900		395		ug/Kg	1	☼	8270D	Total/NA
C10-C28	152		15.6		mg/Kg	1	☼	8015D	Total/NA
Arsenic	4.00		2.86		mg/Kg	2	☼	6010D	Total/NA
Chromium	4.12		1.91		mg/Kg	2	☼	6010D	Total/NA
Copper	22.6		1.91		mg/Kg	2	☼	6010D	Total/NA
Lead	20.6		2.86		mg/Kg	2	☼	6010D	Total/NA
Nickel	8.72		1.91		mg/Kg	2	☼	6010D	Total/NA
Zinc	10.3		5.72		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	81.5		80.2		ug/Kg	1	☼	8270D	Total/NA
Acenaphthylene	229		80.2		ug/Kg	1	☼	8270D	Total/NA
Anthracene	406		80.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	1190		80.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	1140		80.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	1150		80.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	723		80.2		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	1040		80.2		ug/Kg	1	☼	8270D	Total/NA
Chrysene	1410		80.2		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	282		80.2		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	2270		80.2		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	655		80.2		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	1330		80.2		ug/Kg	1	☼	8270D	Total/NA
Pyrene	2650		80.2		ug/Kg	1	☼	8270D	Total/NA
C10-C28	91.9		14.5		mg/Kg	1	☼	8015D	Total/NA
Chromium	7.46		2.38		mg/Kg	2	☼	6010D	Total/NA
Copper	10.8		2.38		mg/Kg	2	☼	6010D	Total/NA
Lead	32.4		3.57		mg/Kg	2	☼	6010D	Total/NA
Nickel	3.65		2.38		mg/Kg	2	☼	6010D	Total/NA
Zinc	31.7		7.13		mg/Kg	2	☼	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB-6 (2-4) (Continued)
Lab Sample ID: 620-22849-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0643		0.0544		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
C10-C28	944		16.0		mg/Kg	1	☼	8015D	Total/NA
Arsenic	20.5		2.98		mg/Kg	2	☼	6010D	Total/NA
Chromium	8.82		1.99		mg/Kg	2	☼	6010D	Total/NA
Copper	21.5		1.99		mg/Kg	2	☼	6010D	Total/NA
Lead	94.5		2.98		mg/Kg	2	☼	6010D	Total/NA
Nickel	4.85		1.99		mg/Kg	2	☼	6010D	Total/NA
Zinc	20.0		5.96		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.0801		0.0547		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SB-7 (4-5)
Lab Sample ID: 620-22849-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	78.6		76.0		ug/Kg	1	☼	8270D	Total/NA
Chrysene	82.0		76.0		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	106		76.0		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	133		76.0		ug/Kg	1	☼	8270D	Total/NA
Pyrene	100		76.0		ug/Kg	1	☼	8270D	Total/NA
C10-C28	73.1		14.0		mg/Kg	1	☼	8015D	Total/NA
Arsenic	2.91		2.55		mg/Kg	2	☼	6010D	Total/NA
Cadmium	1.55		0.850		mg/Kg	2	☼	6010D	Total/NA
Chromium	61.8		1.70		mg/Kg	2	☼	6010D	Total/NA
Copper	24.8		1.70		mg/Kg	2	☼	6010D	Total/NA
Lead	72.6		2.55		mg/Kg	2	☼	6010D	Total/NA
Nickel	3.49		1.70		mg/Kg	2	☼	6010D	Total/NA
Zinc	137		5.10		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	105		74.9		ug/Kg	1	☼	8270D	Total/NA
Benzoic acid	1110		936		ug/Kg	1	☼	8270D	Total/NA
Chrysene	200		74.9		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	97.8		74.9		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	240		74.9		ug/Kg	1	☼	8270D	Total/NA
Pyrene	97.3		74.9		ug/Kg	1	☼	8270D	Total/NA
C10-C28	77.1		30.6		mg/Kg	1	☼	8015D	Total/NA
Arsenic	10.3		5.97		mg/Kg	4	☼	6010D	Total/NA
Chromium	40.7		3.98		mg/Kg	4	☼	6010D	Total/NA
Copper	37.8		3.98		mg/Kg	4	☼	6010D	Total/NA
Lead	82.0		5.97		mg/Kg	4	☼	6010D	Total/NA
Nickel	11.9		3.98		mg/Kg	4	☼	6010D	Total/NA
Zinc	40.9		11.9		mg/Kg	4	☼	6010D	Total/NA

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	3610		1820		ug/Kg	5	☼	8270D	Total/NA
Anthracene	12000		1820		ug/Kg	5	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-106 (0-2) (Continued)
Lab Sample ID: 620-22849-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	39400		1820		ug/Kg	5	☼	8270D	Total/NA
Benzo[a]pyrene	38300		1820		ug/Kg	5	☼	8270D	Total/NA
Benzo[b]fluoranthene	47500		1820		ug/Kg	5	☼	8270D	Total/NA
Benzo[g,h,i]perylene	26100		1820		ug/Kg	5	☼	8270D	Total/NA
Benzo[k]fluoranthene	26700		1820		ug/Kg	5	☼	8270D	Total/NA
Carbazole	5390		4560		ug/Kg	5	☼	8270D	Total/NA
Chrysene	44800		1820		ug/Kg	5	☼	8270D	Total/NA
Dibenz(a,h)anthracene	11600		1820		ug/Kg	5	☼	8270D	Total/NA
Fluoranthene	79600		1820		ug/Kg	5	☼	8270D	Total/NA
Fluorene	3880		1820		ug/Kg	5	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	25200		1820		ug/Kg	5	☼	8270D	Total/NA
Naphthalene	1820		1820		ug/Kg	5	☼	8270D	Total/NA
Phenanthrene	47700		1820		ug/Kg	5	☼	8270D	Total/NA
Pyrene	78500		1820		ug/Kg	5	☼	8270D	Total/NA
C10-C28	892		75.7		mg/Kg	1	☼	8015D	Total/NA
Chromium	10.1		2.31		mg/Kg	2	☼	6010D	Total/NA
Copper	18.1		2.31		mg/Kg	2	☼	6010D	Total/NA
Lead	36.9		3.46		mg/Kg	2	☼	6010D	Total/NA
Nickel	4.99		2.31		mg/Kg	2	☼	6010D	Total/NA
Zinc	30.2		6.92		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Anthracene	106		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	268		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	304		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	325		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	217		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	310		73.5		ug/Kg	1	☼	8270D	Total/NA
Chrysene	297		73.5		ug/Kg	1	☼	8270D	Total/NA
Dibenz(a,h)anthracene	86.0		73.5		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	583		73.5		ug/Kg	1	☼	8270D	Total/NA
Indeno[1,2,3-cd]pyrene	206		73.5		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	360		73.5		ug/Kg	1	☼	8270D	Total/NA
Pyrene	494		73.5		ug/Kg	1	☼	8270D	Total/NA
Chromium	4.83		1.84		mg/Kg	2	☼	6010D	Total/NA
Copper	9.46		1.84		mg/Kg	2	☼	6010D	Total/NA
Lead	2.76		2.76		mg/Kg	2	☼	6010D	Total/NA
Nickel	2.04		1.84		mg/Kg	2	☼	6010D	Total/NA
Zinc	17.1		5.53		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	157		72.6		ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	158		72.6		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	168		72.6		ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	106		72.6		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	154		72.6		ug/Kg	1	☼	8270D	Total/NA
Chrysene	158		72.6		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	348		72.6		ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB-8 (4-5)-DUP (Continued)
Lab Sample ID: 620-22849-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	104		72.6		ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	173		72.6		ug/Kg	1	☼	8270D	Total/NA
Pyrene	289		72.6		ug/Kg	1	☼	8270D	Total/NA
C10-C28	210		75.6		mg/Kg	1	☼	8015D	Total/NA
Chromium	4.87		1.94		mg/Kg	2	☼	6010D	Total/NA
Copper	8.80		1.94		mg/Kg	2	☼	6010D	Total/NA
Zinc	16.4		5.82		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	1700		1450		ug/Kg	4	☼	8270D	Total/NA
Pyrene	1650		1450		ug/Kg	4	☼	8270D	Total/NA
C10-C28	762		74.6		mg/Kg	1	☼	8015D	Total/NA
PCB-1254	162		22.9		ug/Kg	1	☼	8082A	Total/NA
PCB-1260	49.9		22.9		ug/Kg	1	☼	8082A	Total/NA
Chromium	62.7		1.99		mg/Kg	2	☼	6010D	Total/NA
Copper	24.9		1.99		mg/Kg	2	☼	6010D	Total/NA
Lead	76.2		2.98		mg/Kg	2	☼	6010D	Total/NA
Nickel	4.35		1.99		mg/Kg	2	☼	6010D	Total/NA
Zinc	31.9		5.97		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.106		0.0519		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[a]pyrene	81.2		76.7		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	112		76.7		ug/Kg	1	☼	8270D	Total/NA
Chrysene	84.7		76.7		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	145		76.7		ug/Kg	1	☼	8270D	Total/NA
Pyrene	136		76.7		ug/Kg	1	☼	8270D	Total/NA
C10-C28	116		15.2		mg/Kg	1	☼	8015D	Total/NA
Chromium	41.8		1.87		mg/Kg	2	☼	6010D	Total/NA
Copper	24.0		1.87		mg/Kg	2	☼	6010D	Total/NA
Lead	73.1		2.80		mg/Kg	2	☼	6010D	Total/NA
Nickel	2.11		1.87		mg/Kg	2	☼	6010D	Total/NA
Zinc	28.0		5.61		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.386		0.0456		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzo[a]pyrene	76.7		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	93.5		73.5		ug/Kg	1	☼	8270D	Total/NA
Benzo[k]fluoranthene	76.1		73.5		ug/Kg	1	☼	8270D	Total/NA
Chrysene	83.9		73.5		ug/Kg	1	☼	8270D	Total/NA
Fluoranthene	133		73.5		ug/Kg	1	☼	8270D	Total/NA
Pyrene	129		73.5		ug/Kg	1	☼	8270D	Total/NA
C10-C28	109		14.4		mg/Kg	1	☼	8015D	Total/NA
Chromium	21.0		2.00		mg/Kg	2	☼	6010D	Total/NA
Copper	14.8		2.00		mg/Kg	2	☼	6010D	Total/NA
Lead	39.2		3.00		mg/Kg	2	☼	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-104 (0-2) (Continued)
Lab Sample ID: 620-22849-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Zinc	17.8		5.99		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.158		0.0530		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
C10-C28	35.6		15.1		mg/Kg	1	☼	8015D	Total/NA
Chromium	4.84		1.97		mg/Kg	2	☼	6010D	Total/NA
Copper	10.7		1.97		mg/Kg	2	☼	6010D	Total/NA
Lead	6.44		2.95		mg/Kg	2	☼	6010D	Total/NA
Zinc	21.5		5.91		mg/Kg	2	☼	6010D	Total/NA
Mercury	0.0527		0.0487		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 620-22849-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1
Date Collected: 12/05/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Acetone	ND		46.7		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Acrylonitrile	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Benzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Bromobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Bromochloromethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Bromodichloromethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Bromoform	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Bromomethane	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
2-Butanone (MEK)	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
n-Butylbenzene	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
sec-Butylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
tert-Butylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Carbon disulfide	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Carbon tetrachloride	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Chlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Chloroethane	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Chloroform	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Chloromethane	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
2-Chlorotoluene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
4-Chlorotoluene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2-Dibromo-3-Chloropropane	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Dibromochloromethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2-Dibromoethane (EDB)	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Dibromomethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2-Dichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,3-Dichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,4-Dichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Dichlorodifluoromethane (Freon 12)	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1-Dichloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2-Dichloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1-Dichloroethene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
cis-1,2-Dichloroethene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
trans-1,2-Dichloroethene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2-Dichloropropane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,3-Dichloropropane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
2,2-Dichloropropane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1-Dichloropropene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
cis-1,3-Dichloropropene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
trans-1,3-Dichloropropene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Ethylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Hexachlorobutadiene	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
2-Hexanone (MBK)	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Isopropylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
4-Isopropyltoluene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Methyl tert-butyl ether	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
4-Methyl-2-pentanone (MIBK)	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Methylene Chloride	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Naphthalene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1

Client Sample ID: SB-1 (0-2)
Date Collected: 12/05/24 09:15
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-1
Matrix: Solid
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Styrene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1,1,2-Tetrachloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1,2,2-Tetrachloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Tetrachloroethene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Toluene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2,3-Trichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2,4-Trichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,3,5-Trichlorobenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1,1-Trichloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,1,2-Trichloroethane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Trichloroethene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Trichlorofluoromethane (Freon 11)	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2,3-Trichloropropane	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,2,4-Trimethylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,3,5-Trimethylbenzene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Vinyl chloride	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
m,p-Xylene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
o-Xylene	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Tetrahydrofuran	ND		9.33		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Ethyl ether	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Tert-amyl methyl ether	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Ethyl tert-butyl ether	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
di-Isopropyl ether	ND		4.67		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
tert-Butanol	ND		93.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
1,4-Dioxane	ND		93.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
trans-1,4-Dichloro-2-butene	ND		23.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1
Ethanol	ND		933		ug/Kg	☼	12/16/24 11:16	12/16/24 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:04*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:04*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:04*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
1,2,4-Trichlorobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
1,2-Dichlorobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
1,3-Dichlorobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
1,4-Dichlorobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
1-Methylnaphthalene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4,5-Trichlorophenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4,6-Trichlorophenol	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4-Dichlorophenol	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4-Dimethylphenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4-Dinitrophenol	ND		752		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,4-Dinitrotoluene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2,6-Dinitrotoluene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1
Date Collected: 12/05/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2-Chlorophenol	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2-Methylnaphthalene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2-Methylphenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2-Nitroaniline	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
2-Nitrophenol	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
3 & 4 Methylphenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
3,3'-Dichlorobenzidine	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
3-Nitroaniline	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4,6-Dinitro-2-methylphenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Bromophenyl phenyl ether	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Chloro-3-methylphenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Chloroaniline	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Chlorophenyl phenyl ether	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Nitroaniline	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
4-Nitrophenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Acenaphthene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Acenaphthylene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Aniline	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Anthracene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Azobenzene/Diphenyldiazene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzidine	ND	*- *1	752		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzo[a]anthracene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzo[a]pyrene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzo[b]fluoranthene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzo[g,h,i]perylene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzo[k]fluoranthene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzoic acid	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Benzyl alcohol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Bis(2-chloroethoxy)methane	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Bis(2-chloroethyl)ether	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
bis (2-chloroisopropyl) ether	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Bis(2-ethylhexyl) phthalate	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Butyl benzyl phthalate	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Carbazole	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Chrysene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Dibenz(a,h)anthracene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Dibenzofuran	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Diethyl phthalate	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Dimethyl phthalate	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Di-n-butyl phthalate	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Di-n-octyl phthalate	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Fluoranthene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Fluorene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Hexachlorobenzene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Hexachlorobutadiene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Hexachlorocyclopentadiene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Hexachloroethane	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Indeno[1,2,3-cd]pyrene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1

Client Sample ID: SB-1 (0-2)
Date Collected: 12/05/24 09:15
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-1
Matrix: Solid
Percent Solids: 85.8

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Naphthalene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Nitrobenzene	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
N-Nitrosodimethylamine	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
N-Nitrosodi-n-propylamine	ND		190		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
N-Nitrosodiphenylamine	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Pentachloronitrobenzene	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Pentachlorophenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Phenanthrene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Phenol	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Pyrene	ND		76.0		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1
Pyridine	ND		376		ug/Kg	☼	12/13/24 11:09	12/17/24 21:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:49*	*1*
2-Fluorophenol (Surr)	*104*		*15 - 110*	*12/13/24 11:09*	*12/17/24 21:49*	*1*
Nitrobenzene-d5 (Surr)	*78*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:49*	*1*
Phenol-d5 (Surr)	*92*		*15 - 110*	*12/13/24 11:09*	*12/17/24 21:49*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*15 - 110*	*12/13/24 11:09*	*12/17/24 21:49*	*1*
Terphenyl-d14 (Surr)	*86*		*30 - 130*	*12/13/24 11:09*	*12/17/24 21:49*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		3.61		mg/Kg	☼	12/17/24 14:08	12/17/24 23:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*70 - 130*	*12/17/24 14:08*	*12/17/24 23:36*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**28.1**		15.0		mg/Kg	☼	12/13/24 13:01	12/16/24 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*52*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:00*	*1*
1-Chlorooctadecane	*78*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:00*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1221	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1232	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1242	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1248	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1254	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1260	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1262	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1
PCB-1268	ND		23.3		ug/Kg	☼	12/12/24 15:24	12/13/24 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:22*	*1*
DCB Decachlorobiphenyl (Surr)	*73*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:22*	*1*

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1
Date Collected: 12/05/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.98		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Arsenic	ND		2.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Beryllium	ND		0.998		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Cadmium	ND		0.998		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Chromium	**2.25**		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Copper	**3.73**		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Lead	**4.18**		2.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Nickel	ND		2.00		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Selenium	ND		2.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Silver	ND		2.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Thallium	ND		5.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2
Zinc	**9.35**		5.99		mg/Kg	☼	12/16/24 08:50	12/17/24 15:33	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0513		mg/Kg	☼	12/16/24 11:21	12/16/24 17:07	1

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 83.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Acetone	ND		63.3		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Acrylonitrile	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Benzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Bromobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Bromochloromethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Bromodichloromethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Bromoform	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Bromomethane	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
2-Butanone (MEK)	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
n-Butylbenzene	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
sec-Butylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
tert-Butylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Carbon disulfide	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Carbon tetrachloride	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Chlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Chloroethane	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Chloroform	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Chloromethane	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
2-Chlorotoluene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
4-Chlorotoluene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2-Dibromo-3-Chloropropane	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Dibromochloromethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2-Dibromoethane (EDB)	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Dibromomethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2-Dichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 83.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,4-Dichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Dichlorodifluoromethane (Freon 12)	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1-Dichloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2-Dichloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1-Dichloroethene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
cis-1,2-Dichloroethene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
trans-1,2-Dichloroethene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2-Dichloropropane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,3-Dichloropropane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
2,2-Dichloropropane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1-Dichloropropene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
cis-1,3-Dichloropropene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
trans-1,3-Dichloropropene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Ethylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Hexachlorobutadiene	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
2-Hexanone (MBK)	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Isopropylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
4-Isopropyltoluene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Methyl tert-butyl ether	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
4-Methyl-2-pentanone (MIBK)	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Methylene Chloride	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Naphthalene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
N-Propylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Styrene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1,1,2-Tetrachloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1,2,2-Tetrachloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Tetrachloroethene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Toluene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2,3-Trichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2,4-Trichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,3,5-Trichlorobenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1,1-Trichloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,1,2-Trichloroethane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Trichloroethene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Trichlorofluoromethane (Freon 11)	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2,3-Trichloropropane	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,2,4-Trimethylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,3,5-Trimethylbenzene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Vinyl chloride	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
m,p-Xylene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
o-Xylene	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Tetrahydrofuran	ND		12.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Ethyl ether	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Tert-amyl methyl ether	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Ethyl tert-butyl ether	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
di-Isopropyl ether	ND		6.33		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
tert-Butanol	ND		127		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
1,4-Dioxane	ND		127		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1

Client Sample ID: MW-101 (0-2)
Date Collected: 12/05/24 10:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-2
Matrix: Solid
Percent Solids: 83.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	ND		31.6		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1
Ethanol	ND		1270		ug/Kg	☼	12/13/24 15:48	12/14/24 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:24*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:24*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:24*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
1,2,4-Trichlorobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
1,2-Dichlorobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
1,3-Dichlorobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
1,4-Dichlorobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
1-Methylnaphthalene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4,5-Trichlorophenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4,6-Trichlorophenol	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4-Dichlorophenol	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4-Dimethylphenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4-Dinitrophenol	ND		3910		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,4-Dinitrotoluene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2,6-Dinitrotoluene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Chloronaphthalene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Chlorophenol	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Methylnaphthalene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Methylphenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Nitroaniline	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
2-Nitrophenol	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
3 & 4 Methylphenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
3,3'-Dichlorobenzidine	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
3-Nitroaniline	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4,6-Dinitro-2-methylphenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Bromophenyl phenyl ether	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Chloro-3-methylphenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Chloroaniline	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Chlorophenyl phenyl ether	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Nitroaniline	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
4-Nitrophenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Acenaphthene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Acenaphthylene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Aniline	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Anthracene	**501**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Azobenzene/Diphenyldiazene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzidine	ND	*- *1	3910		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzo[a]anthracene	**942**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzo[a]pyrene	**876**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzo[b]fluoranthene	**1140**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzo[g,h,i]perylene	**567**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101 (0-2)
Date Collected: 12/05/24 10:00
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-2
Matrix: Solid
Percent Solids: 83.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	**889**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzoic acid	**3330**		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Benzyl alcohol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Bis(2-chloroethoxy)methane	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Bis(2-chloroethyl)ether	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
bis (2-chloroisopropyl) ether	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Bis(2-ethylhexyl) phthalate	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Butyl benzyl phthalate	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Carbazole	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Chrysene	**1190**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Dibenz(a,h)anthracene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Dibenzofuran	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Diethyl phthalate	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Dimethyl phthalate	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Di-n-butyl phthalate	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Di-n-octyl phthalate	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Fluoranthene	**2120**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Fluorene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Hexachlorobenzene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Hexachlorobutadiene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Hexachlorocyclopentadiene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Hexachloroethane	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Indeno[1,2,3-cd]pyrene	**566**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Isophorone	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Naphthalene	ND		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Nitrobenzene	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
N-Nitrosodimethylamine	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
N-Nitrosodi-n-propylamine	ND		989		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
N-Nitrosodiphenylamine	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Pentachloronitrobenzene	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Pentachlorophenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Phenanthrene	**2080**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Phenol	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Pyrene	**1900**		395		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1
Pyridine	ND		1950		ug/Kg	☼	12/13/24 11:09	12/17/24 22:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*30 - 130*	*12/13/24 11:09*	*12/17/24 22:16*	*1*
2-Fluorophenol (Surr)	*77*		*15 - 110*	*12/13/24 11:09*	*12/17/24 22:16*	*1*
Nitrobenzene-d5 (Surr)	*65*		*30 - 130*	*12/13/24 11:09*	*12/17/24 22:16*	*1*
Phenol-d5 (Surr)	*76*		*15 - 110*	*12/13/24 11:09*	*12/17/24 22:16*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*15 - 110*	*12/13/24 11:09*	*12/17/24 22:16*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/13/24 11:09*	*12/17/24 22:16*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.96		mg/Kg	☼	12/17/24 14:08	12/18/24 00:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*75*		*70 - 130*	*12/17/24 14:08*	*12/18/24 00:11*	*1*

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 83.3

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**152**		15.6		mg/Kg	☼	12/13/24 13:01	12/16/24 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*69*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:24*	*1*
1-Chlorooctadecane	*85*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:24*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1221	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1232	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1242	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1248	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1254	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1260	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1262	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1
PCB-1268	ND		23.4		ug/Kg	☼	12/12/24 15:24	12/13/24 23:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*49*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:40*	*1*
DCB Decachlorobiphenyl (Surr)	*88*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:40*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.53		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Arsenic	**4.00**		2.86		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Beryllium	ND		0.953		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Cadmium	ND		0.953		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Chromium	**4.12**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Copper	**22.6**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Lead	**20.6**		2.86		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Nickel	**8.72**		1.91		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Selenium	ND		2.86		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Silver	ND		2.86		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Thallium	ND		5.72		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2
Zinc	**10.3**		5.72		mg/Kg	☼	12/16/24 08:50	12/17/24 15:39	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0490		mg/Kg	☼	12/16/24 11:21	12/16/24 17:09	1

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3
Date Collected: 12/05/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
1,2,4-Trichlorobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
1,2-Dichlorobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
1,3-Dichlorobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3
Date Collected: 12/05/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
1-Methylnaphthalene	ND		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4,5-Trichlorophenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4,6-Trichlorophenol	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4-Dichlorophenol	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4-Dimethylphenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4-Dinitrophenol	ND		794		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,4-Dinitrotoluene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2,6-Dinitrotoluene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Chloronaphthalene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Chlorophenol	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Methylnaphthalene	ND		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Methylphenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Nitroaniline	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
2-Nitrophenol	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
3 & 4 Methylphenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
3,3'-Dichlorobenzidine	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
3-Nitroaniline	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4,6-Dinitro-2-methylphenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Bromophenyl phenyl ether	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Chloro-3-methylphenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Chloroaniline	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Chlorophenyl phenyl ether	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Nitroaniline	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
4-Nitrophenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Acenaphthene	**81.5**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Acenaphthylene	**229**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Aniline	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Anthracene	**406**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Azobenzene/Diphenyldiazene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzidine	ND	*- *1	794		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzo[a]anthracene	**1190**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzo[a]pyrene	**1140**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzo[b]fluoranthene	**1150**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzo[g,h,i]perylene	**723**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzo[k]fluoranthene	**1040**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzoic acid	ND		1000		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Benzyl alcohol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Bis(2-chloroethoxy)methane	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Bis(2-chloroethyl)ether	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
bis (2-chloroisopropyl) ether	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Bis(2-ethylhexyl) phthalate	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Butyl benzyl phthalate	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Carbazole	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Chrysene	**1410**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Dibenz(a,h)anthracene	**282**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Dibenzofuran	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Diethyl phthalate	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Dimethyl phthalate	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1

Client Sample ID: SB-6 (2-4)
Date Collected: 12/05/24 11:05
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-3
Matrix: Solid
Percent Solids: 82.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Di-n-octyl phthalate	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Fluoranthene	**2270**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Fluorene	ND		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Hexachlorobenzene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Hexachlorobutadiene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Hexachlorocyclopentadiene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Hexachloroethane	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Indeno[1,2,3-cd]pyrene	**655**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Isophorone	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Naphthalene	ND		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Nitrobenzene	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
N-Nitrosodimethylamine	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
N-Nitrosodi-n-propylamine	ND		201		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
N-Nitrosodiphenylamine	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Pentachloronitrobenzene	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Pentachlorophenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Phenanthrene	**1330**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Phenol	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Pyrene	**2650**		80.2		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1
Pyridine	ND		397		ug/Kg	☼	12/13/24 11:09	12/19/24 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*30 - 130*	*12/13/24 11:09*	*12/19/24 19:23*	*1*
2-Fluorophenol (Surr)	*94*		*15 - 110*	*12/13/24 11:09*	*12/19/24 19:23*	*1*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*	*12/13/24 11:09*	*12/19/24 19:23*	*1*
Phenol-d5 (Surr)	*85*		*15 - 110*	*12/13/24 11:09*	*12/19/24 19:23*	*1*
2,4,6-Tribromophenol (Surr)	*80*		*15 - 110*	*12/13/24 11:09*	*12/19/24 19:23*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/13/24 11:09*	*12/19/24 19:23*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.83		mg/Kg	☼	12/17/24 14:08	12/18/24 00:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*80*		*70 - 130*	*12/17/24 14:08*	*12/18/24 00:45*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**91.9**		14.5		mg/Kg	☼	12/13/24 13:01	12/16/24 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*64*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:47*	*1*
1-Chlorooctadecane	*76*		*40 - 140*	*12/13/24 13:01*	*12/16/24 20:47*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1221	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1232	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1242	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3
Date Collected: 12/05/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1254	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1260	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1262	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1
PCB-1268	ND		23.9		ug/Kg	☼	12/12/24 15:24	12/13/24 23:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*68*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:58*	*1*
DCB Decachlorobiphenyl (Surr)	*148*		*30 - 150*	*12/12/24 15:24*	*12/13/24 23:58*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		11.9		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Arsenic	ND		3.57		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Beryllium	ND		1.19		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Cadmium	ND		1.19		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Chromium	**7.46**		2.38		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Copper	**10.8**		2.38		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Lead	**32.4**		3.57		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Nickel	**3.65**		2.38		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Selenium	ND		3.57		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Silver	ND		3.57		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Thallium	ND		7.13		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2
Zinc	**31.7**		7.13		mg/Kg	☼	12/16/24 08:50	12/17/24 15:45	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0643**		0.0544		mg/Kg	☼	12/16/24 11:21	12/16/24 17:16	1

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Acetone	ND		58.6		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Acrylonitrile	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Benzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Bromobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Bromochloromethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Bromodichloromethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Bromoform	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Bromomethane	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
2-Butanone (MEK)	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
n-Butylbenzene	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
sec-Butylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
tert-Butylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Carbon disulfide	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Carbon tetrachloride	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Chloroethane	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Chloroform	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Chloromethane	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
2-Chlorotoluene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
4-Chlorotoluene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2-Dibromo-3-Chloropropane	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Dibromochloromethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2-Dibromoethane (EDB)	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Dibromomethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2-Dichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,3-Dichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,4-Dichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Dichlorodifluoromethane (Freon 12)	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1-Dichloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2-Dichloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1-Dichloroethene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
cis-1,2-Dichloroethene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
trans-1,2-Dichloroethene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2-Dichloropropane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,3-Dichloropropane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
2,2-Dichloropropane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1-Dichloropropene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
cis-1,3-Dichloropropene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
trans-1,3-Dichloropropene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Ethylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Hexachlorobutadiene	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
2-Hexanone (MBK)	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Isopropylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
4-Isopropyltoluene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Methyl tert-butyl ether	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
4-Methyl-2-pentanone (MIBK)	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Methylene Chloride	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Naphthalene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
N-Propylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Styrene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1,1,2-Tetrachloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1,2,2-Tetrachloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Tetrachloroethene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Toluene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2,3-Trichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2,4-Trichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,3,5-Trichlorobenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1,1-Trichloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,1,2-Trichloroethane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Trichloroethene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Trichlorofluoromethane (Freon 11)	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2,3-Trichloropropane	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,2,4-Trimethylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4

Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Vinyl chloride	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
m,p-Xylene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
o-Xylene	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Tetrahydrofuran	ND		11.7		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Ethyl ether	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Tert-amyl methyl ether	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Ethyl tert-butyl ether	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
di-Isopropyl ether	ND		5.86		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
tert-Butanol	ND		117		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
1,4-Dioxane	ND		117		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
trans-1,4-Dichloro-2-butene	ND		29.3		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1
Ethanol	ND		1170		ug/Kg	☼	12/13/24 15:48	12/14/24 02:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:50*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:50*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*	*12/13/24 15:48*	*12/14/24 02:50*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
1,2,4-Trichlorobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
1,2-Dichlorobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
1,3-Dichlorobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
1,4-Dichlorobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
1-Methylnaphthalene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4,5-Trichlorophenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4,6-Trichlorophenol	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4-Dichlorophenol	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4-Dimethylphenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4-Dinitrophenol	ND		6120		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,4-Dinitrotoluene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2,6-Dinitrotoluene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Chloronaphthalene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Chlorophenol	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Methylnaphthalene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Methylphenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Nitroaniline	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
2-Nitrophenol	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
3 & 4 Methylphenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
3,3'-Dichlorobenzidine	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
3-Nitroaniline	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4,6-Dinitro-2-methylphenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4-Bromophenyl phenyl ether	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4-Chloro-3-methylphenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4-Chloroaniline	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4-Chlorophenyl phenyl ether	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
4-Nitroaniline	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Acenaphthene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Acenaphthylene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Aniline	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Anthracene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Azobenzene/Diphenyldiazene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzidine	ND	*- *1	6120		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzo[a]anthracene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzo[a]pyrene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzo[b]fluoranthene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzo[g,h,i]perylene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzo[k]fluoranthene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzoic acid	ND		7730		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Benzyl alcohol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Bis(2-chloroethoxy)methane	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Bis(2-chloroethyl)ether	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
bis (2-chloroisopropyl) ether	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Bis(2-ethylhexyl) phthalate	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Butyl benzyl phthalate	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Carbazole	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Chrysene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Dibenz(a,h)anthracene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Dibenzofuran	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Diethyl phthalate	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Dimethyl phthalate	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Di-n-butyl phthalate	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Di-n-octyl phthalate	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Fluoranthene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Fluorene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Hexachlorobenzene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Hexachlorobutadiene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Hexachlorocyclopentadiene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Hexachloroethane	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Indeno[1,2,3-cd]pyrene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Isophorone	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Naphthalene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Nitrobenzene	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
N-Nitrosodimethylamine	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
N-Nitrosodi-n-propylamine	ND		1550		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
N-Nitrosodiphenylamine	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Pentachloronitrobenzene	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Pentachlorophenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Phenanthrene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Phenol	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Pyrene	ND		618		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4
Pyridine	ND		3060		ug/Kg	☼	12/18/24 09:57	12/20/24 00:04	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:04*	*4*
2-Fluorophenol (Surr)	*65*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:04*	*4*

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4

Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:04*	*4*
Phenol-d5 (Surr)	*56*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:04*	*4*
2,4,6-Tribromophenol (Surr)	*85*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:04*	*4*
Terphenyl-d14 (Surr)	*52*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:04*	*4*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		11.9	mg/Kg	☼	12/17/24 14:08	12/18/24 01:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	*85*		*70 - 130*	*12/17/24 14:08*	*12/18/24 01:20*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**944**		16.0	mg/Kg	☼	12/13/24 13:01	12/16/24 21:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*53*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:10*	*1*
1-Chlorooctadecane	*74*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:10*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1221	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1232	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1242	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1248	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1254	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1260	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1262	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1
PCB-1268	ND		24.1	ug/Kg	☼	12/12/24 15:24	12/14/24 00:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*34*		*30 - 150*	*12/12/24 15:24*	*12/14/24 00:16*	*1*
DCB Decachlorobiphenyl (Surr)	*261*	*S1+*	*30 - 150*	*12/12/24 15:24*	*12/14/24 00:16*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.94	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Arsenic	**20.5**		2.98	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Beryllium	ND		0.994	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Cadmium	ND		0.994	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Chromium	**8.82**		1.99	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Copper	**21.5**		1.99	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Lead	**94.5**		2.98	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Nickel	**4.85**		1.99	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Selenium	ND		2.98	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Silver	ND		2.98	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Thallium	ND		5.96	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2
Zinc	**20.0**		5.96	mg/Kg	☼	12/16/24 08:50	12/17/24 15:51	2

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0801**		0.0547		mg/Kg	☼	12/16/24 11:21	12/16/24 17:18	1

Client Sample ID: SB-7 (4-5)
Lab Sample ID: 620-22849-5
Date Collected: 12/05/24 13:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
1,2,4-Trichlorobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
1,2-Dichlorobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
1,3-Dichlorobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
1,4-Dichlorobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
1-Methylnaphthalene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4,5-Trichlorophenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4,6-Trichlorophenol	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4-Dichlorophenol	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4-Dimethylphenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4-Dinitrophenol	ND		752		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,4-Dinitrotoluene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2,6-Dinitrotoluene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Chloronaphthalene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Chlorophenol	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Methylnaphthalene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Methylphenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Nitroaniline	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
2-Nitrophenol	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
3 & 4 Methylphenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
3,3'-Dichlorobenzidine	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
3-Nitroaniline	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4,6-Dinitro-2-methylphenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Bromophenyl phenyl ether	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Chloro-3-methylphenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Chloroaniline	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Chlorophenyl phenyl ether	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Nitroaniline	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
4-Nitrophenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Acenaphthene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Acenaphthylene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Aniline	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Anthracene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Azobenzene/Diphenyldiazene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzidine	ND	*- *1	752		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzo[a]anthracene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzo[a]pyrene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzo[b]fluoranthene	**78.6**		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzo[g,h,i]perylene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzo[k]fluoranthene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzoic acid	ND		950		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Benzyl alcohol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-7 (4-5)
Date Collected: 12/05/24 13:45
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-5
Matrix: Solid
Percent Solids: 86.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Bis(2-chloroethyl)ether	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
bis (2-chloroisopropyl) ether	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Bis(2-ethylhexyl) phthalate	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Butyl benzyl phthalate	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Carbazole	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Chrysene	**82.0**		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Dibenz(a,h)anthracene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Dibenzofuran	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Diethyl phthalate	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Dimethyl phthalate	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Di-n-butyl phthalate	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Di-n-octyl phthalate	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Fluoranthene	**106**		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Fluorene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Hexachlorobenzene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Hexachlorobutadiene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Hexachlorocyclopentadiene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Hexachloroethane	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Indeno[1,2,3-cd]pyrene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Isophorone	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Naphthalene	ND		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Nitrobenzene	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
N-Nitrosodimethylamine	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
N-Nitrosodi-n-propylamine	ND		190		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
N-Nitrosodiphenylamine	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Pentachloronitrobenzene	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Pentachlorophenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Phenanthrene	**133**		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Phenol	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Pyrene	**100**		76.0		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1
Pyridine	ND		376		ug/Kg	☼	12/18/24 09:57	12/19/24 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*30 - 130*	*12/18/24 09:57*	*12/19/24 19:48*	*1*
2-Fluorophenol (Surr)	*94*		*15 - 110*	*12/18/24 09:57*	*12/19/24 19:48*	*1*
Nitrobenzene-d5 (Surr)	*74*		*30 - 130*	*12/18/24 09:57*	*12/19/24 19:48*	*1*
Phenol-d5 (Surr)	*84*		*15 - 110*	*12/18/24 09:57*	*12/19/24 19:48*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*	*12/18/24 09:57*	*12/19/24 19:48*	*1*
Terphenyl-d14 (Surr)	*62*		*30 - 130*	*12/18/24 09:57*	*12/19/24 19:48*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.61		mg/Kg	☼	12/17/24 14:08	12/18/24 01:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*73*		*70 - 130*	*12/17/24 14:08*	*12/18/24 01:54*	*1*

Client Sample ID: SB-7 (4-5)
Lab Sample ID: 620-22849-5
Date Collected: 12/05/24 13:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.7

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**73.1**		14.0		mg/Kg	☼	12/13/24 13:01	12/16/24 21:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*62*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:34*	*1*
1-Chlorooctadecane	*84*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:34*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		8.50		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Arsenic	**2.91**		2.55		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Beryllium	ND		0.850		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Cadmium	**1.55**		0.850		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Chromium	**61.8**		1.70		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Copper	**24.8**		1.70		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Lead	**72.6**		2.55		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Nickel	**3.49**		1.70		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Selenium	ND		2.55		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Silver	ND		2.55		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Thallium	ND		5.10		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2
Zinc	**137**		5.10		mg/Kg	☼	12/16/24 08:50	12/17/24 16:09	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0527		mg/Kg	☼	12/16/24 11:21	12/16/24 17:20	1

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6
Date Collected: 12/06/24 07:35
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Acetone	ND		57.0		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Acrylonitrile	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Benzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Bromobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Bromochloromethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Bromodichloromethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Bromoform	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Bromomethane	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
2-Butanone (MEK)	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
n-Butylbenzene	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
sec-Butylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
tert-Butylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Carbon disulfide	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Carbon tetrachloride	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Chlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Chloroethane	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Chloroform	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Chloromethane	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6
Date Collected: 12/06/24 07:35
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
4-Chlorotoluene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2-Dibromo-3-Chloropropane	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Dibromochloromethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2-Dibromoethane (EDB)	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Dibromomethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2-Dichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,3-Dichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,4-Dichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Dichlorodifluoromethane (Freon 12)	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1-Dichloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2-Dichloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1-Dichloroethene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
cis-1,2-Dichloroethene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
trans-1,2-Dichloroethene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2-Dichloropropane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,3-Dichloropropane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
2,2-Dichloropropane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1-Dichloropropene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
cis-1,3-Dichloropropene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
trans-1,3-Dichloropropene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Ethylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Hexachlorobutadiene	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
2-Hexanone (MBK)	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Isopropylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
4-Isopropyltoluene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Methyl tert-butyl ether	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
4-Methyl-2-pentanone (MIBK)	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Methylene Chloride	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Naphthalene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
N-Propylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Styrene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1,1,2-Tetrachloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1,2,2-Tetrachloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Tetrachloroethene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Toluene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2,3-Trichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2,4-Trichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,3,5-Trichlorobenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1,1-Trichloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,1,2-Trichloroethane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Trichloroethene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Trichlorofluoromethane (Freon 11)	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2,3-Trichloropropane	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,2,4-Trimethylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,3,5-Trimethylbenzene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Vinyl chloride	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
m,p-Xylene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
o-Xylene	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-103 (0-2)
Date Collected: 12/06/24 07:35
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-6
Matrix: Solid
Percent Solids: 86.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	ND		11.4		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Ethyl ether	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Tert-amyl methyl ether	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Ethyl tert-butyl ether	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
di-Isopropyl ether	ND		5.70		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
tert-Butanol	ND		114		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
1,4-Dioxane	ND		114		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
trans-1,4-Dichloro-2-butene	ND		28.5		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1
Ethanol	ND		1140		ug/Kg	☼	12/13/24 15:48	12/14/24 03:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:17*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:17*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:17*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
1,2,4-Trichlorobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
1,2-Dichlorobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
1,3-Dichlorobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
1,4-Dichlorobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
1-Methylnaphthalene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4,5-Trichlorophenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4,6-Trichlorophenol	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4-Dichlorophenol	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4-Dimethylphenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4-Dinitrophenol	ND		741		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,4-Dinitrotoluene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2,6-Dinitrotoluene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Chloronaphthalene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Chlorophenol	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Methylnaphthalene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Methylphenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Nitroaniline	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
2-Nitrophenol	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
3 & 4 Methylphenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
3,3'-Dichlorobenzidine	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
3-Nitroaniline	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4,6-Dinitro-2-methylphenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Bromophenyl phenyl ether	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Chloro-3-methylphenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Chloroaniline	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Chlorophenyl phenyl ether	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Nitroaniline	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
4-Nitrophenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Acenaphthene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Acenaphthylene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Aniline	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6

Date Collected: 12/06/24 07:35
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Azobenzene/Diphenyldiazene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzidine	ND	*- *1	741		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzo[a]anthracene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzo[a]pyrene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzo[b]fluoranthene	**105**		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzo[g,h,i]perylene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzo[k]fluoranthene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzoic acid	**1110**		936		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Benzyl alcohol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Bis(2-chloroethoxy)methane	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Bis(2-chloroethyl)ether	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
bis (2-chloroisopropyl) ether	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Bis(2-ethylhexyl) phthalate	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Butyl benzyl phthalate	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Carbazole	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Chrysene	**200**		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Dibenz(a,h)anthracene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Dibenzofuran	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Diethyl phthalate	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Dimethyl phthalate	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Di-n-butyl phthalate	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Di-n-octyl phthalate	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Fluoranthene	**97.8**		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Fluorene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Hexachlorobenzene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Hexachlorobutadiene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Hexachlorocyclopentadiene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Hexachloroethane	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Indeno[1,2,3-cd]pyrene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Isophorone	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Naphthalene	ND		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Nitrobenzene	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
N-Nitrosodimethylamine	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
N-Nitrosodi-n-propylamine	ND		188		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
N-Nitrosodiphenylamine	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Pentachloronitrobenzene	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Pentachlorophenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Phenanthrene	**240**		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Phenol	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Pyrene	**97.3**		74.9		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1
Pyridine	ND		371		ug/Kg	☼	12/18/24 09:57	12/19/24 21:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:31*	*1*
2-Fluorophenol (Surr)	*76*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:31*	*1*
Nitrobenzene-d5 (Surr)	*67*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:31*	*1*
Phenol-d5 (Surr)	*70*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:31*	*1*
2,4,6-Tribromophenol (Surr)	*61*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:31*	*1*
Terphenyl-d14 (Surr)	*63*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:31*	*1*

Client Sample ID: MW-103 (0-2)
Date Collected: 12/06/24 07:35
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-6
Matrix: Solid
Percent Solids: 86.2

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		6.47		mg/Kg	☼	12/17/24 14:08	12/18/24 02:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*74*		*70 - 130*	*12/17/24 14:08*	*12/18/24 02:29*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**77.1**		30.6		mg/Kg	☼	12/18/24 14:23	12/19/24 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*59*		*40 - 140*	*12/18/24 14:23*	*12/19/24 18:53*	*1*
1-Chlorooctadecane	*75*		*40 - 140*	*12/18/24 14:23*	*12/19/24 18:53*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1221	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1232	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1242	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1248	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1254	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1260	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1262	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1
PCB-1268	ND		22.2		ug/Kg	☼	12/12/24 15:24	12/14/24 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*55*		*30 - 150*	*12/12/24 15:24*	*12/14/24 00:33*	*1*
DCB Decachlorobiphenyl (Surr)	*132*		*30 - 150*	*12/12/24 15:24*	*12/14/24 00:33*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		19.9		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Arsenic	**10.3**		5.97		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Beryllium	ND		1.99		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Cadmium	ND		1.99		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Chromium	**40.7**		3.98		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Copper	**37.8**		3.98		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Lead	**82.0**		5.97		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Nickel	**11.9**		3.98		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Selenium	ND		5.97		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Silver	ND		5.97		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Thallium	ND		11.9		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4
Zinc	**40.9**		11.9		mg/Kg	☼	12/17/24 11:58	12/18/24 15:06	4

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0531		mg/Kg	☼	12/16/24 11:21	12/16/24 17:22	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106 (0-2)
Date Collected: 12/06/24 08:10
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-7
Matrix: Solid
Percent Solids: 87.0

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Acetone	ND		64.3		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Acrylonitrile	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Benzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Bromobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Bromochloromethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Bromodichloromethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Bromoform	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Bromomethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
2-Butanone (MEK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
n-Butylbenzene	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
sec-Butylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
tert-Butylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Carbon disulfide	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Carbon tetrachloride	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Chlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Chloroethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Chloroform	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Chloromethane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
2-Chlorotoluene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
4-Chlorotoluene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2-Dibromo-3-Chloropropane	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Dibromochloromethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2-Dibromoethane (EDB)	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Dibromomethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2-Dichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,3-Dichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,4-Dichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Dichlorodifluoromethane (Freon 12)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1-Dichloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2-Dichloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1-Dichloroethene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
cis-1,2-Dichloroethene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
trans-1,2-Dichloroethene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2-Dichloropropane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,3-Dichloropropane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
2,2-Dichloropropane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1-Dichloropropene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
cis-1,3-Dichloropropene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
trans-1,3-Dichloropropene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Ethylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Hexachlorobutadiene	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
2-Hexanone (MBK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Isopropylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
4-Isopropyltoluene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Methyl tert-butyl ether	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
4-Methyl-2-pentanone (MIBK)	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Methylene Chloride	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Naphthalene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1

Client Sample ID: MW-106 (0-2)
Date Collected: 12/06/24 08:10
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-7
Matrix: Solid
Percent Solids: 87.0

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Styrene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1,1,2-Tetrachloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1,2,2-Tetrachloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Tetrachloroethene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Toluene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2,3-Trichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2,4-Trichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,3,5-Trichlorobenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1,1-Trichloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,1,2-Trichloroethane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Trichloroethene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Trichlorofluoromethane (Freon 11)	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2,3-Trichloropropane	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,2,4-Trimethylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,3,5-Trimethylbenzene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Vinyl chloride	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
m,p-Xylene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
o-Xylene	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Tetrahydrofuran	ND		12.9		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Ethyl ether	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Tert-amyl methyl ether	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Ethyl tert-butyl ether	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
di-Isopropyl ether	ND		6.43		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
tert-Butanol	ND		129		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
1,4-Dioxane	ND		129		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
trans-1,4-Dichloro-2-butene	ND		32.2		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1
Ethanol	ND		1290		ug/Kg	☼	12/13/24 15:48	12/14/24 03:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:42*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:42*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/14/24 03:42*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
1,2,4-Trichlorobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
1,2-Dichlorobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
1,3-Dichlorobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
1,4-Dichlorobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
1-Methylnaphthalene	ND		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4,5-Trichlorophenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4,6-Trichlorophenol	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4-Dichlorophenol	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4-Dimethylphenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4-Dinitrophenol	ND		18000		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,4-Dinitrotoluene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2,6-Dinitrotoluene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7
Date Collected: 12/06/24 08:10
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2-Chlorophenol	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2-Methylnaphthalene	ND		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2-Methylphenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2-Nitroaniline	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
2-Nitrophenol	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
3 & 4 Methylphenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
3,3'-Dichlorobenzidine	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
3-Nitroaniline	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4,6-Dinitro-2-methylphenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Bromophenyl phenyl ether	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Chloro-3-methylphenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Chloroaniline	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Chlorophenyl phenyl ether	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Nitroaniline	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
4-Nitrophenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Acenaphthene	**3610**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Acenaphthylene	ND		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Aniline	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Anthracene	**12000**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Azobenzene/Diphenyldiazene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzidine	ND	*- *1	18000		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzo[a]anthracene	**39400**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzo[a]pyrene	**38300**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzo[b]fluoranthene	**47500**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzo[g,h,i]perylene	**26100**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzo[k]fluoranthene	**26700**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzoic acid	ND		22800		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Benzyl alcohol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Bis(2-chloroethoxy)methane	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Bis(2-chloroethyl)ether	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
bis (2-chloroisopropyl) ether	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Bis(2-ethylhexyl) phthalate	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Butyl benzyl phthalate	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Carbazole	**5390**		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Chrysene	**44800**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Dibenz(a,h)anthracene	**11600**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Dibenzofuran	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Diethyl phthalate	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Dimethyl phthalate	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Di-n-butyl phthalate	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Di-n-octyl phthalate	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Fluoranthene	**79600**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Fluorene	**3880**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Hexachlorobenzene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Hexachlorobutadiene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Hexachlorocyclopentadiene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Hexachloroethane	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Indeno[1,2,3-cd]pyrene	**25200**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7

Date Collected: 12/06/24 08:10
Matrix: Solid

Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Naphthalene	**1820**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Nitrobenzene	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
N-Nitrosodimethylamine	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
N-Nitrosodi-n-propylamine	ND		4560		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
N-Nitrosodiphenylamine	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Pentachloronitrobenzene	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Pentachlorophenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Phenanthrene	**47700**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Phenol	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Pyrene	**78500**		1820		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5
Pyridine	ND		9010		ug/Kg	☼	12/18/24 09:57	12/20/24 00:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:55*	*5*
2-Fluorophenol (Surr)	*71*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:55*	*5*
Nitrobenzene-d5 (Surr)	*69*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:55*	*5*
Phenol-d5 (Surr)	*65*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:55*	*5*
2,4,6-Tribromophenol (Surr)	*147*	*S1+*	*15 - 110*	*12/18/24 09:57*	*12/20/24 00:55*	*5*
Terphenyl-d14 (Surr)	*68*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:55*	*5*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		11.1		mg/Kg	☼	12/17/24 14:08	12/18/24 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*70 - 130*	*12/17/24 14:08*	*12/18/24 03:04*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**892**		75.7		mg/Kg	☼	12/18/24 14:23	12/19/24 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*40 - 140*	*12/18/24 14:23*	*12/19/24 19:17*	*1*
1-Chlorooctadecane	*0*	*S1-*	*40 - 140*	*12/18/24 14:23*	*12/19/24 19:17*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1221	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1232	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1242	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1248	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1254	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1260	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1262	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1
PCB-1268	ND		22.7		ug/Kg	☼	12/12/24 15:24	12/16/24 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*41*		*30 - 150*	*12/12/24 15:24*	*12/16/24 21:43*	*1*
DCB Decachlorobiphenyl (Surr)	*100*		*30 - 150*	*12/12/24 15:24*	*12/16/24 21:43*	*1*

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7

Date Collected: 12/06/24 08:10
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		11.5		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Arsenic	ND		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Beryllium	ND		1.15		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Cadmium	ND		1.15		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Chromium	**10.1**		2.31		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Copper	**18.1**		2.31		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Lead	**36.9**		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Nickel	**4.99**		2.31		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Selenium	ND		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Silver	ND		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Thallium	ND		6.92		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2
Zinc	**30.2**		6.92		mg/Kg	☼	12/17/24 11:58	12/18/24 15:00	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0487		mg/Kg	☼	12/16/24 11:21	12/16/24 17:25	1

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8

Date Collected: 12/06/24 09:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
1,2,4-Trichlorobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
1,2-Dichlorobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
1,3-Dichlorobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
1,4-Dichlorobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
1-Methylnaphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4,5-Trichlorophenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4,6-Trichlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4-Dichlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4-Dimethylphenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4-Dinitrophenol	ND		727		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,4-Dinitrotoluene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2,6-Dinitrotoluene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Chloronaphthalene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Chlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Methylnaphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Methylphenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Nitroaniline	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
2-Nitrophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
3 & 4 Methylphenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
3,3'-Dichlorobenzidine	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
3-Nitroaniline	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4,6-Dinitro-2-methylphenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4-Bromophenyl phenyl ether	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4-Chloro-3-methylphenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4-Chloroaniline	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4-Chlorophenyl phenyl ether	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8
Date Collected: 12/06/24 09:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
4-Nitrophenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Acenaphthene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Acenaphthylene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Aniline	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Anthracene	**106**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Azobenzene/Diphenyldiazene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzidine	ND	*- *1	727		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzo[a]anthracene	**268**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzo[a]pyrene	**304**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzo[b]fluoranthene	**325**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzo[g,h,i]perylene	**217**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzo[k]fluoranthene	**310**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzoic acid	ND		918		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Benzyl alcohol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Bis(2-chloroethoxy)methane	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Bis(2-chloroethyl)ether	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
bis (2-chloroisopropyl) ether	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Bis(2-ethylhexyl) phthalate	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Butyl benzyl phthalate	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Carbazole	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Chrysene	**297**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Dibenz(a,h)anthracene	**86.0**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Dibenzofuran	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Diethyl phthalate	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Dimethyl phthalate	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Di-n-butyl phthalate	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Di-n-octyl phthalate	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Fluoranthene	**583**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Fluorene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Hexachlorobenzene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Hexachlorobutadiene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Hexachlorocyclopentadiene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Hexachloroethane	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Indeno[1,2,3-cd]pyrene	**206**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Isophorone	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Naphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Nitrobenzene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
N-Nitrosodimethylamine	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
N-Nitrosodi-n-propylamine	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
N-Nitrosodiphenylamine	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Pentachloronitrobenzene	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Pentachlorophenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Phenanthrene	**360**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Phenol	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Pyrene	**494**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1
Pyridine	ND		363		ug/Kg	☼	12/18/24 09:57	12/19/24 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:14*	*1*

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8
Date Collected: 12/06/24 09:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*101*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:14*	*1*
Nitrobenzene-d5 (Surr)	*78*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:14*	*1*
Phenol-d5 (Surr)	*91*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:14*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:14*	*1*
Terphenyl-d14 (Surr)	*75*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:14*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.61	mg/Kg	☼	12/17/24 14:08	12/18/24 03:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*82*		*70 - 130*	*12/17/24 14:08*	*12/18/24 03:38*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		75.1	mg/Kg	☼	12/18/24 14:23	12/19/24 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*61*		*40 - 140*	*12/18/24 14:23*	*12/19/24 19:40*	*1*
1-Chlorooctadecane	*75*		*40 - 140*	*12/18/24 14:23*	*12/19/24 19:40*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.22	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Arsenic	ND		2.76	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Beryllium	ND		0.922	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Cadmium	ND		0.922	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Chromium	**4.83**		1.84	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Copper	**9.46**		1.84	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Lead	**2.76**		2.76	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Nickel	**2.04**		1.84	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Selenium	ND		2.76	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Silver	ND		2.76	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Thallium	ND		5.53	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2
Zinc	**17.1**		5.53	mg/Kg	☼	12/17/24 11:58	12/18/24 14:54	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0398	mg/Kg	☼	12/16/24 11:21	12/16/24 17:27	1

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9
Date Collected: 12/06/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		359	ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
1,2,4-Trichlorobenzene	ND		359	ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
1,2-Dichlorobenzene	ND		359	ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
1,3-Dichlorobenzene	ND		359	ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
1,4-Dichlorobenzene	ND		359	ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9
Date Collected: 12/06/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4,5-Trichlorophenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4,6-Trichlorophenol	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4-Dichlorophenol	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4-Dimethylphenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4-Dinitrophenol	ND		719		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,4-Dinitrotoluene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2,6-Dinitrotoluene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Chloronaphthalene	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Chlorophenol	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Methylnaphthalene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Methylphenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Nitroaniline	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
2-Nitrophenol	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
3 & 4 Methylphenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
3,3'-Dichlorobenzidine	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
3-Nitroaniline	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4,6-Dinitro-2-methylphenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Bromophenyl phenyl ether	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Chloro-3-methylphenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Chloroaniline	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Chlorophenyl phenyl ether	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Nitroaniline	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
4-Nitrophenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Acenaphthene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Acenaphthylene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Aniline	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Anthracene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Azobenzene/Diphenyldiazene	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzidine	ND	*- *1	719		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzo[a]anthracene	**157**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzo[a]pyrene	**158**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzo[b]fluoranthene	**168**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzo[g,h,i]perylene	**106**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzo[k]fluoranthene	**154**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzoic acid	ND		907		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Benzyl alcohol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Bis(2-chloroethoxy)methane	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Bis(2-chloroethyl)ether	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
bis (2-chloroisopropyl) ether	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Bis(2-ethylhexyl) phthalate	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Butyl benzyl phthalate	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Carbazole	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Chrysene	**158**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Dibenz(a,h)anthracene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Dibenzofuran	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Diethyl phthalate	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Dimethyl phthalate	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Di-n-butyl phthalate	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9

Date Collected: 12/06/24 09:15
Matrix: Solid

Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Fluoranthene	**348**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Fluorene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Hexachlorobenzene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Hexachlorobutadiene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Hexachlorocyclopentadiene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Hexachloroethane	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Indeno[1,2,3-cd]pyrene	**104**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Isophorone	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Naphthalene	ND		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Nitrobenzene	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
N-Nitrosodimethylamine	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
N-Nitrosodi-n-propylamine	ND		182		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
N-Nitrosodiphenylamine	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Pentachloronitrobenzene	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Pentachlorophenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Phenanthrene	**173**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Phenol	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Pyrene	**289**		72.6		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1
Pyridine	ND		359		ug/Kg	☼	12/18/24 09:57	12/19/24 23:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*58*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:39*	*1*
2-Fluorophenol (Surr)	*80*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:39*	*1*
Nitrobenzene-d5 (Surr)	*64*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:39*	*1*
Phenol-d5 (Surr)	*74*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:39*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:39*	*1*
Terphenyl-d14 (Surr)	*52*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:39*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.67		mg/Kg	☼	12/17/24 14:08	12/18/24 04:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*81*		*70 - 130*	*12/17/24 14:08*	*12/18/24 04:12*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**210**		75.6		mg/Kg	☼	12/18/24 14:23	12/19/24 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*71*		*40 - 140*	*12/18/24 14:23*	*12/19/24 20:04*	*1*
1-Chlorooctadecane	*60*		*40 - 140*	*12/18/24 14:23*	*12/19/24 20:04*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.70		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Arsenic	ND		2.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Beryllium	ND		0.970		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Cadmium	ND		0.970		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Chromium	**4.87**		1.94		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2

Client Sample ID: SB-8 (4-5)-DUP

Lab Sample ID: 620-22849-9
Date Collected: 12/06/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Method: SW846 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Copper	**8.80**		1.94		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Lead	ND		2.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Nickel	ND		1.94		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Selenium	ND		2.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Silver	ND		2.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Thallium	ND		5.82		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2
Zinc	**16.4**		5.82		mg/Kg	☼	12/17/24 11:58	12/18/24 14:48	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0457		mg/Kg	☼	12/16/24 11:21	12/16/24 17:29	1

Client Sample ID: MW-105 (0-2)

Lab Sample ID: 620-22849-10
Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Acetone	ND		83.4		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Acrylonitrile	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Benzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Bromobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Bromochloromethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Bromodichloromethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Bromoform	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Bromomethane	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
2-Butanone (MEK)	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
n-Butylbenzene	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
sec-Butylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
tert-Butylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Carbon disulfide	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Carbon tetrachloride	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Chlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Chloroethane	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Chloroform	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Chloromethane	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
2-Chlorotoluene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
4-Chlorotoluene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2-Dibromo-3-Chloropropane	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Dibromochloromethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2-Dibromoethane (EDB)	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Dibromomethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2-Dichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,3-Dichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,4-Dichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Dichlorodifluoromethane (Freon 12)	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1-Dichloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2-Dichloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10
Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
cis-1,2-Dichloroethene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
trans-1,2-Dichloroethene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2-Dichloropropane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,3-Dichloropropane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
2,2-Dichloropropane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1-Dichloropropene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
cis-1,3-Dichloropropene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
trans-1,3-Dichloropropene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Ethylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Hexachlorobutadiene	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
2-Hexanone (MBK)	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Isopropylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
4-Isopropyltoluene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Methyl tert-butyl ether	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
4-Methyl-2-pentanone (MIBK)	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Methylene Chloride	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Naphthalene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
N-Propylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Styrene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1,1,2-Tetrachloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1,2,2-Tetrachloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Tetrachloroethene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Toluene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2,3-Trichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2,4-Trichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,3,5-Trichlorobenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1,1-Trichloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,1,2-Trichloroethane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Trichloroethene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Trichlorofluoromethane (Freon 11)	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2,3-Trichloropropane	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,2,4-Trimethylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,3,5-Trimethylbenzene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Vinyl chloride	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
m,p-Xylene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
o-Xylene	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Tetrahydrofuran	ND		16.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Ethyl ether	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Tert-amyl methyl ether	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Ethyl tert-butyl ether	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
di-Isopropyl ether	ND		8.34		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
tert-Butanol	ND		167		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
1,4-Dioxane	ND		167		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
trans-1,4-Dichloro-2-butene	ND		41.7		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1
Ethanol	ND		1670		ug/Kg	☼	12/13/24 15:48	12/14/24 04:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*12/13/24 15:48*	*12/14/24 04:07*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/14/24 04:07*	*1*

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10

Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*	*12/13/24 15:48*	*12/14/24 04:07*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*12/13/24 15:48*	*12/14/24 04:07*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
1,2,4-Trichlorobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
1,2-Dichlorobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
1,3-Dichlorobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
1,4-Dichlorobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
1-Methylnaphthalene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4,5-Trichlorophenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4,6-Trichlorophenol	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4-Dichlorophenol	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4-Dimethylphenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4-Dinitrophenol	ND		14300		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,4-Dinitrotoluene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2,6-Dinitrotoluene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Chloronaphthalene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Chlorophenol	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Methylnaphthalene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Methylphenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Nitroaniline	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
2-Nitrophenol	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
3 & 4 Methylphenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
3,3'-Dichlorobenzidine	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
3-Nitroaniline	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4,6-Dinitro-2-methylphenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Bromophenyl phenyl ether	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Chloro-3-methylphenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Chloroaniline	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Chlorophenyl phenyl ether	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Nitroaniline	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
4-Nitrophenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Acenaphthene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Acenaphthylene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Aniline	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Anthracene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Azobenzene/Diphenyldiazene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzidine	ND	*- *1	14300		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzo[a]anthracene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzo[a]pyrene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzo[b]fluoranthene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzo[g,h,i]perylene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzo[k]fluoranthene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzoic acid	ND		18100		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Benzyl alcohol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Bis(2-chloroethoxy)methane	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Bis(2-chloroethyl)ether	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10
Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Bis(2-ethylhexyl) phthalate	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Butyl benzyl phthalate	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Carbazole	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Chrysene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Dibenz(a,h)anthracene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Dibenzofuran	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Diethyl phthalate	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Dimethyl phthalate	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Di-n-butyl phthalate	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Di-n-octyl phthalate	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Fluoranthene	**1700**		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Fluorene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Hexachlorobenzene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Hexachlorobutadiene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Hexachlorocyclopentadiene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Hexachloroethane	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Indeno[1,2,3-cd]pyrene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Isophorone	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Naphthalene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Nitrobenzene	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
N-Nitrosodimethylamine	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
N-Nitrosodi-n-propylamine	ND		3620		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
N-Nitrosodiphenylamine	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Pentachloronitrobenzene	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Pentachlorophenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Phenanthrene	ND		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Phenol	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Pyrene	**1650**		1450		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4
Pyridine	ND		7150		ug/Kg	☼	12/18/24 09:57	12/20/24 00:30	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:30*	*4*
2-Fluorophenol (Surr)	*66*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:30*	*4*
Nitrobenzene-d5 (Surr)	*52*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:30*	*4*
Phenol-d5 (Surr)	*57*		*15 - 110*	*12/18/24 09:57*	*12/20/24 00:30*	*4*
2,4,6-Tribromophenol (Surr)	*112*	*S1+*	*15 - 110*	*12/18/24 09:57*	*12/20/24 00:30*	*4*
Terphenyl-d14 (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/20/24 00:30*	*4*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		16.9		mg/Kg	☼	12/17/24 14:08	12/18/24 04:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*86*		*70 - 130*	*12/17/24 14:08*	*12/18/24 04:47*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**762**		74.6		mg/Kg	☼	12/13/24 13:01	12/16/24 21:57	1

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10

Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*55*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:57*	*1*
1-Chlorooctadecane	*77*		*40 - 140*	*12/13/24 13:01*	*12/16/24 21:57*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1221	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1232	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1242	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1248	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1254	**162**		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1260	**49.9**		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1262	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1
PCB-1268	ND		22.9	ug/Kg	☼	12/12/24 15:24	12/14/24 01:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*40*		*30 - 150*	*12/12/24 15:24*	*12/14/24 01:09*	*1*
DCB Decachlorobiphenyl (Surr)	*128*	*p*	*30 - 150*	*12/12/24 15:24*	*12/14/24 01:09*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.95	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Arsenic	ND		2.98	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Beryllium	ND		0.995	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Cadmium	ND		0.995	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Chromium	**62.7**		1.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Copper	**24.9**		1.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Lead	**76.2**		2.98	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Nickel	**4.35**		1.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Selenium	ND		2.98	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Silver	ND		2.98	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Thallium	ND		5.97	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2
Zinc	**31.9**		5.97	mg/Kg	☼	12/17/24 11:58	12/18/24 14:42	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.106**		0.0519	mg/Kg	☼	12/16/24 11:21	12/16/24 17:31	1

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11

Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Acetone	ND		81.4	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Acrylonitrile	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Benzene	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Bromobenzene	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Bromochloromethane	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Bromodichloromethane	ND		8.14	ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11
Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Bromomethane	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
2-Butanone (MEK)	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
n-Butylbenzene	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
sec-Butylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
tert-Butylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Carbon disulfide	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Carbon tetrachloride	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Chlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Chloroethane	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Chloroform	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Chloromethane	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
2-Chlorotoluene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
4-Chlorotoluene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2-Dibromo-3-Chloropropane	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Dibromochloromethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2-Dibromoethane (EDB)	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Dibromomethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2-Dichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,3-Dichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,4-Dichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Dichlorodifluoromethane (Freon 12)	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1-Dichloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2-Dichloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1-Dichloroethene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
cis-1,2-Dichloroethene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
trans-1,2-Dichloroethene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2-Dichloropropane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,3-Dichloropropane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
2,2-Dichloropropane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1-Dichloropropene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
cis-1,3-Dichloropropene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
trans-1,3-Dichloropropene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Ethylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Hexachlorobutadiene	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
2-Hexanone (MBK)	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Isopropylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
4-Isopropyltoluene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Methyl tert-butyl ether	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
4-Methyl-2-pentanone (MIBK)	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Methylene Chloride	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Naphthalene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
N-Propylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Styrene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1,1,2-Tetrachloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1,2,2-Tetrachloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Tetrachloroethene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Toluene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2,3-Trichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1

Client Sample ID: SB-5 (0-2)
Date Collected: 12/06/24 11:05
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-11
Matrix: Solid
Percent Solids: 84.0

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,3,5-Trichlorobenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1,1-Trichloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,1,2-Trichloroethane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Trichloroethene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Trichlorofluoromethane (Freon 11)	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2,3-Trichloropropane	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,2,4-Trimethylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,3,5-Trimethylbenzene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Vinyl chloride	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
m,p-Xylene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
o-Xylene	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Tetrahydrofuran	ND		16.3		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Ethyl ether	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Tert-amyl methyl ether	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Ethyl tert-butyl ether	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
di-Isopropyl ether	ND		8.14		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
tert-Butanol	ND		163		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
1,4-Dioxane	ND		163		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
trans-1,4-Dichloro-2-butene	ND		40.7		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1
Ethanol	ND		1630		ug/Kg	☼	12/16/24 11:16	12/16/24 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:30*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:30*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:30*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
1,2,4-Trichlorobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
1,2-Dichlorobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
1,3-Dichlorobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
1,4-Dichlorobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
1-Methylnaphthalene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4,5-Trichlorophenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4,6-Trichlorophenol	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4-Dichlorophenol	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4-Dimethylphenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4-Dinitrophenol	ND		759		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,4-Dinitrotoluene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2,6-Dinitrotoluene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Chloronaphthalene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Chlorophenol	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Methylnaphthalene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Methylphenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Nitroaniline	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
2-Nitrophenol	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
3 & 4 Methylphenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11
Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
3-Nitroaniline	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4,6-Dinitro-2-methylphenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Bromophenyl phenyl ether	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Chloro-3-methylphenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Chloroaniline	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Chlorophenyl phenyl ether	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Nitroaniline	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
4-Nitrophenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Acenaphthene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Acenaphthylene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Aniline	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Anthracene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Azobenzene/Diphenyldiazene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzidine	ND	*- *1	759		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzo[a]anthracene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzo[a]pyrene	**81.2**		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzo[b]fluoranthene	**112**		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzo[g,h,i]perylene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzo[k]fluoranthene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzoic acid	ND		959		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Benzyl alcohol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Bis(2-chloroethoxy)methane	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Bis(2-chloroethyl)ether	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
bis (2-chloroisopropyl) ether	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Bis(2-ethylhexyl) phthalate	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Butyl benzyl phthalate	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Carbazole	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Chrysene	**84.7**		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Dibenz(a,h)anthracene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Dibenzofuran	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Diethyl phthalate	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Dimethyl phthalate	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Di-n-butyl phthalate	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Di-n-octyl phthalate	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Fluoranthene	**145**		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Fluorene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Hexachlorobenzene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Hexachlorobutadiene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Hexachlorocyclopentadiene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Hexachloroethane	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Indeno[1,2,3-cd]pyrene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Isophorone	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Naphthalene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Nitrobenzene	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
N-Nitrosodimethylamine	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
N-Nitrosodi-n-propylamine	ND		192		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
N-Nitrosodiphenylamine	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Pentachloronitrobenzene	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1

Client Sample ID: SB-5 (0-2)
Date Collected: 12/06/24 11:05
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-11
Matrix: Solid
Percent Solids: 84.0

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Phenanthrene	ND		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Phenol	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Pyrene	**136**		76.7		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1
Pyridine	ND		380		ug/Kg	☼	12/18/24 09:57	12/19/24 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*50*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:40*	*1*
2-Fluorophenol (Surr)	*69*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:40*	*1*
Nitrobenzene-d5 (Surr)	*52*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:40*	*1*
Phenol-d5 (Surr)	*62*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:40*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*15 - 110*	*12/18/24 09:57*	*12/19/24 20:40*	*1*
Terphenyl-d14 (Surr)	*53*		*30 - 130*	*12/18/24 09:57*	*12/19/24 20:40*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		8.36		mg/Kg	☼	12/17/24 14:08	12/18/24 05:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*70*		*70 - 130*	*12/17/24 14:08*	*12/18/24 05:21*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**116**		15.2		mg/Kg	☼	12/13/24 13:01	12/16/24 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*58*		*40 - 140*	*12/13/24 13:01*	*12/16/24 22:21*	*1*
1-Chlorooctadecane	*73*		*40 - 140*	*12/13/24 13:01*	*12/16/24 22:21*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1221	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1232	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1242	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1248	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1254	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1260	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1262	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1
PCB-1268	ND		23.2		ug/Kg	☼	12/12/24 15:24	12/14/24 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*36*		*30 - 150*	*12/12/24 15:24*	*12/14/24 01:27*	*1*
DCB Decachlorobiphenyl (Surr)	*61*		*30 - 150*	*12/12/24 15:24*	*12/14/24 01:27*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.34		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Arsenic	ND		2.80		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Beryllium	ND		0.934		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Cadmium	ND		0.934		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11

Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Method: SW846 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**41.8**		1.87		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Copper	**24.0**		1.87		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Lead	**73.1**		2.80		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Nickel	**2.11**		1.87		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Selenium	ND		2.80		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Silver	ND		2.80		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Thallium	ND		5.61		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2
Zinc	**28.0**		5.61		mg/Kg	☼	12/17/24 11:58	12/18/24 14:36	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.386**		0.0456		mg/Kg	☼	12/16/24 11:21	12/16/24 17:33	1

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12

Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Acetone	ND		67.0		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Acrylonitrile	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Benzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Bromobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Bromochloromethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Bromodichloromethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Bromoform	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Bromomethane	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
2-Butanone (MEK)	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
n-Butylbenzene	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
sec-Butylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
tert-Butylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Carbon disulfide	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Carbon tetrachloride	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Chlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Chloroethane	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Chloroform	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Chloromethane	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
2-Chlorotoluene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
4-Chlorotoluene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2-Dibromo-3-Chloropropane	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Dibromochloromethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2-Dibromoethane (EDB)	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Dibromomethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2-Dichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,3-Dichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,4-Dichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Dichlorodifluoromethane (Freon 12)	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1-Dichloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12
Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1-Dichloroethene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
cis-1,2-Dichloroethene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
trans-1,2-Dichloroethene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2-Dichloropropane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,3-Dichloropropane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
2,2-Dichloropropane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1-Dichloropropene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
cis-1,3-Dichloropropene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
trans-1,3-Dichloropropene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Ethylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Hexachlorobutadiene	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
2-Hexanone (MBK)	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Isopropylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
4-Isopropyltoluene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Methyl tert-butyl ether	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
4-Methyl-2-pentanone (MIBK)	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Methylene Chloride	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Naphthalene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
N-Propylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Styrene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1,1,2-Tetrachloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1,2,2-Tetrachloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Tetrachloroethene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Toluene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2,3-Trichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2,4-Trichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,3,5-Trichlorobenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1,1-Trichloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,1,2-Trichloroethane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Trichloroethene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Trichlorofluoromethane (Freon 11)	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2,3-Trichloropropane	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,2,4-Trimethylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,3,5-Trimethylbenzene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Vinyl chloride	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
m,p-Xylene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
o-Xylene	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Tetrahydrofuran	ND		13.4		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Ethyl ether	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Tert-amyl methyl ether	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Ethyl tert-butyl ether	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
di-Isopropyl ether	ND		6.70		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
tert-Butanol	ND		134		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
1,4-Dioxane	ND		134		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
trans-1,4-Dichloro-2-butene	ND		33.5		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1
Ethanol	ND		1340		ug/Kg	☼	12/16/24 11:16	12/16/24 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:57*	*1*

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12

Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:57*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/16/24 11:16*	*12/16/24 13:57*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
1,2,4-Trichlorobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
1,2-Dichlorobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
1,3-Dichlorobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
1,4-Dichlorobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
1-Methylnaphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4,5-Trichlorophenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4,6-Trichlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4-Dichlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4-Dimethylphenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4-Dinitrophenol	ND		727		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,4-Dinitrotoluene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2,6-Dinitrotoluene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Chloronaphthalene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Chlorophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Methylnaphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Methylphenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Nitroaniline	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
2-Nitrophenol	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
3 & 4 Methylphenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
3,3'-Dichlorobenzidine	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
3-Nitroaniline	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4,6-Dinitro-2-methylphenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Bromophenyl phenyl ether	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Chloro-3-methylphenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Chloroaniline	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Chlorophenyl phenyl ether	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Nitroaniline	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
4-Nitrophenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Acenaphthene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Acenaphthylene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Aniline	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Anthracene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Azobenzene/Diphenyldiazene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzidine	ND	*- *1	727		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzo[a]anthracene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzo[a]pyrene	**76.7**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzo[b]fluoranthene	**93.5**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzo[g,h,i]perylene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzo[k]fluoranthene	**76.1**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzoic acid	ND		918		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Benzyl alcohol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Bis(2-chloroethoxy)methane	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12
Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
bis (2-chloroisopropyl) ether	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Bis(2-ethylhexyl) phthalate	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Butyl benzyl phthalate	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Carbazole	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Chrysene	**83.9**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Dibenz(a,h)anthracene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Dibenzofuran	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Diethyl phthalate	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Dimethyl phthalate	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Di-n-butyl phthalate	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Di-n-octyl phthalate	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Fluoranthene	**133**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Fluorene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Hexachlorobenzene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Hexachlorobutadiene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Hexachlorocyclopentadiene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Hexachloroethane	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Indeno[1,2,3-cd]pyrene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Isophorone	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Naphthalene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Nitrobenzene	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
N-Nitrosodimethylamine	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
N-Nitrosodi-n-propylamine	ND		184		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
N-Nitrosodiphenylamine	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Pentachloronitrobenzene	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Pentachlorophenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Phenanthrene	ND		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Phenol	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Pyrene	**129**		73.5		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1
Pyridine	ND		364		ug/Kg	☼	12/18/24 09:57	12/19/24 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:56*	*1*
2-Fluorophenol (Surr)	*73*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:56*	*1*
Nitrobenzene-d5 (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:56*	*1*
Phenol-d5 (Surr)	*68*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:56*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:56*	*1*
Terphenyl-d14 (Surr)	*61*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:56*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		7.65		mg/Kg	☼	12/17/24 14:08	12/18/24 05:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*72*		*70 - 130*	*12/17/24 14:08*	*12/18/24 05:56*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**109**		14.4		mg/Kg	☼	12/13/24 13:01	12/16/24 22:44	1

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12

Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*63*		*40 - 140*	*12/13/24 13:01*	*12/16/24 22:44*	*1*
1-Chlorooctadecane	*85*		*40 - 140*	*12/13/24 13:01*	*12/16/24 22:44*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1221	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1232	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1242	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1248	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1254	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1260	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1262	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1
PCB-1268	ND		22.4	ug/Kg	☼	12/12/24 15:24	12/14/24 01:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*55*		*30 - 150*	*12/12/24 15:24*	*12/14/24 01:45*	*1*
DCB Decachlorobiphenyl (Surr)	*71*		*30 - 150*	*12/12/24 15:24*	*12/14/24 01:45*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Arsenic	ND		3.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Beryllium	ND		0.999	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Cadmium	ND		0.999	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Chromium	**21.0**		2.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Copper	**14.8**		2.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Lead	**39.2**		3.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Nickel	ND		2.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Selenium	ND		3.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Silver	ND		3.00	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Thallium	ND		5.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2
Zinc	**17.8**		5.99	mg/Kg	☼	12/17/24 11:58	12/18/24 14:30	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.158**		0.0530	mg/Kg	☼	12/16/24 11:21	12/16/24 17:35	1

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13

Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Acetone	ND		61.0	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Acrylonitrile	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Benzene	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Bromobenzene	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Bromochloromethane	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Bromodichloromethane	ND		6.10	ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13
Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Bromomethane	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
2-Butanone (MEK)	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
n-Butylbenzene	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
sec-Butylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
tert-Butylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Carbon disulfide	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Carbon tetrachloride	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Chlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Chloroethane	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Chloroform	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Chloromethane	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
2-Chlorotoluene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
4-Chlorotoluene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2-Dibromo-3-Chloropropane	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Dibromochloromethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2-Dibromoethane (EDB)	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Dibromomethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2-Dichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,3-Dichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,4-Dichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Dichlorodifluoromethane (Freon 12)	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1-Dichloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2-Dichloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1-Dichloroethene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
cis-1,2-Dichloroethene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
trans-1,2-Dichloroethene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2-Dichloropropane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,3-Dichloropropane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
2,2-Dichloropropane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1-Dichloropropene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
cis-1,3-Dichloropropene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
trans-1,3-Dichloropropene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Ethylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Hexachlorobutadiene	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
2-Hexanone (MBK)	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Isopropylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
4-Isopropyltoluene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Methyl tert-butyl ether	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
4-Methyl-2-pentanone (MIBK)	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Methylene Chloride	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Naphthalene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
N-Propylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Styrene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1,1,2-Tetrachloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1,2,2-Tetrachloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Tetrachloroethene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Toluene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2,3-Trichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1

Client Sample ID: SB-3 (0-2)
Date Collected: 12/06/24 12:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-13
Matrix: Solid
Percent Solids: 85.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,3,5-Trichlorobenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1,1-Trichloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,1,2-Trichloroethane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Trichloroethene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Trichlorofluoromethane (Freon 11)	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2,3-Trichloropropane	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,2,4-Trimethylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,3,5-Trimethylbenzene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Vinyl chloride	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
m,p-Xylene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
o-Xylene	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Tetrahydrofuran	ND		12.2		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Ethyl ether	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Tert-amyl methyl ether	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Ethyl tert-butyl ether	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
di-Isopropyl ether	ND		6.10		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
tert-Butanol	ND		122		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
1,4-Dioxane	ND		122		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
trans-1,4-Dichloro-2-butene	ND		30.5		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1
Ethanol	ND		1220		ug/Kg	☼	12/16/24 11:16	12/16/24 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*12/16/24 11:16*	*12/16/24 14:22*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/16/24 11:16*	*12/16/24 14:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*	*12/16/24 11:16*	*12/16/24 14:22*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/16/24 11:16*	*12/16/24 14:22*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
1,2,4-Trichlorobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
1,2-Dichlorobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
1,3-Dichlorobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
1,4-Dichlorobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
1-Methylnaphthalene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4,5-Trichlorophenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4,6-Trichlorophenol	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4-Dichlorophenol	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4-Dimethylphenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4-Dinitrophenol	ND		713		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,4-Dinitrotoluene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2,6-Dinitrotoluene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Chloronaphthalene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Chlorophenol	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Methylnaphthalene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Methylphenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Nitroaniline	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
2-Nitrophenol	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
3 & 4 Methylphenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13
Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
3-Nitroaniline	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4,6-Dinitro-2-methylphenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Bromophenyl phenyl ether	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Chloro-3-methylphenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Chloroaniline	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Chlorophenyl phenyl ether	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Nitroaniline	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
4-Nitrophenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Acenaphthene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Acenaphthylene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Aniline	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Anthracene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Azobenzene/Diphenyldiazene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzidine	ND	*- *1	713		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzo[a]anthracene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzo[a]pyrene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzo[b]fluoranthene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzo[g,h,i]perylene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzo[k]fluoranthene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzoic acid	ND		900		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Benzyl alcohol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Bis(2-chloroethoxy)methane	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Bis(2-chloroethyl)ether	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
bis (2-chloroisopropyl) ether	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Bis(2-ethylhexyl) phthalate	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Butyl benzyl phthalate	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Carbazole	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Chrysene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Dibenz(a,h)anthracene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Dibenzofuran	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Diethyl phthalate	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Dimethyl phthalate	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Di-n-butyl phthalate	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Di-n-octyl phthalate	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Fluoranthene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Fluorene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Hexachlorobenzene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Hexachlorobutadiene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Hexachlorocyclopentadiene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Hexachloroethane	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Indeno[1,2,3-cd]pyrene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Isophorone	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Naphthalene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Nitrobenzene	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
N-Nitrosodimethylamine	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
N-Nitrosodi-n-propylamine	ND		180		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
N-Nitrosodiphenylamine	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Pentachloronitrobenzene	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1

Client Sample ID: SB-3 (0-2)
Date Collected: 12/06/24 12:40
Date Received: 12/11/24 18:46

Lab Sample ID: 620-22849-13
Matrix: Solid
Percent Solids: 85.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Phenanthrene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Phenol	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Pyrene	ND		72.0		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1
Pyridine	ND		356		ug/Kg	☼	12/18/24 09:57	12/19/24 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*56*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:05*	*1*
2-Fluorophenol (Surr)	*77*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:05*	*1*
Nitrobenzene-d5 (Surr)	*60*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:05*	*1*
Phenol-d5 (Surr)	*67*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:05*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*15 - 110*	*12/18/24 09:57*	*12/19/24 21:05*	*1*
Terphenyl-d14 (Surr)	*59*		*30 - 130*	*12/18/24 09:57*	*12/19/24 21:05*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		6.25		mg/Kg	☼	12/17/24 14:08	12/18/24 06:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*69*	*S1-*	*70 - 130*	*12/17/24 14:08*	*12/18/24 06:31*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**35.6**		15.1		mg/Kg	☼	12/13/24 13:01	12/16/24 23:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*54*		*40 - 140*	*12/13/24 13:01*	*12/16/24 23:08*	*1*
1-Chlorooctadecane	*75*		*40 - 140*	*12/13/24 13:01*	*12/16/24 23:08*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1221	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1232	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1242	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1248	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1254	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1260	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1262	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1
PCB-1268	ND		23.1		ug/Kg	☼	12/12/24 15:24	12/14/24 02:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*30 - 150*	*12/12/24 15:24*	*12/14/24 02:03*	*1*
DCB Decachlorobiphenyl (Surr)	*40*		*30 - 150*	*12/12/24 15:24*	*12/14/24 02:03*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.84		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Arsenic	ND		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Beryllium	ND		0.984		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Cadmium	ND		0.984		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13
Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.5

Method: SW846 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**4.84**		1.97		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Copper	**10.7**		1.97		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Lead	**6.44**		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Nickel	ND		1.97		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Selenium	ND		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Silver	ND		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Thallium	ND		5.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2
Zinc	**21.5**		5.91		mg/Kg	☼	12/17/24 11:58	12/18/24 14:24	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0527**		0.0487		mg/Kg	☼	12/18/24 10:08	12/18/24 16:05	1

Client Sample ID: Trip Blank
Lab Sample ID: 620-22849-14
Date Collected: 12/06/24 00:00
Matrix: Solid
Date Received: 12/11/24 18:46

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Acetone	ND		50.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Acrylonitrile	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Benzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Bromobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Bromochloromethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Bromodichloromethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Bromoform	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Bromomethane	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
n-Butylbenzene	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Carbon disulfide	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Chlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Chloroethane	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Chloroform	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Chloromethane	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Dibromochloromethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Dibromomethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: Trip Blank
Lab Sample ID: 620-22849-14
Date Collected: 12/06/24 00:00
Matrix: Solid
Date Received: 12/11/24 18:46

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Ethylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Isopropylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Methylene Chloride	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Naphthalene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
N-Propylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Styrene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Tetrachloroethene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Toluene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Trichloroethene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Vinyl chloride	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
m,p-Xylene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
o-Xylene	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Ethyl ether	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
tert-Butanol	ND		100		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
1,4-Dioxane	ND		100		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/16/24 11:16	12/16/24 12:38	1
Ethanol	ND		1000		ug/Kg		12/16/24 11:16	12/16/24 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/16/24 11:16*	*12/16/24 12:38*	*1*

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: Trip Blank
Lab Sample ID: 620-22849-14
Date Collected: 12/06/24 00:00
Matrix: Solid
Date Received: 12/11/24 18:46

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130	12/16/24 11:16	12/16/24 12:38	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130	12/16/24 11:16	12/16/24 12:38	1
Dibromofluoromethane (Surr)	103		70 - 130	12/16/24 11:16	12/16/24 12:38	1

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

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

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DCA	DBFM
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
620-22849-1	SB-1 (0-2)	98	99	104	103
620-22849-2	MW-101 (0-2)	94	97	106	103
620-22849-4	MW-108 (0-2)	90	97	104	102
620-22849-6	MW-103 (0-2)	92	97	103	103
620-22849-7	MW-106 (0-2)	99	98	108	104
620-22849-10	MW-105 (0-2)	92	98	108	104
620-22849-11	SB-5 (0-2)	92	99	110	108
620-22849-12	MW-104 (0-2)	95	98	107	107
620-22849-13	SB-3 (0-2)	96	99	107	107
620-22849-14	Trip Blank	98	98	102	103
LCS 620-42500/1-A	Lab Control Sample	97	100	101	100
LCS 620-42541/1-A	Lab Control Sample	101	102	107	104
LCSD 620-42500/2-A	Lab Control Sample Dup	98	100	100	101
LCSD 620-42541/2-A	Lab Control Sample Dup	100	102	107	104
MB 620-42500/3-A	Method Blank	97	98	99	100
MB 620-42541/3-A	Method Blank	99	99	105	104

Surrogate Legend

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

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

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TBP	TPHL
Lab Sample ID	Client Sample ID	(30-130)	(15-110)	(30-130)	(15-110)	(15-110)	(30-130)
620-22849-1	SB-1 (0-2)	77	104	78	92	87	86
620-22849-2	MW-101 (0-2)	70	77	65	76	90	73
620-22849-3	SB-6 (2-4)	70	94	72	85	80	73
620-22849-4	MW-108 (0-2)	55	65	55	56	85	52
620-22849-5	SB-7 (4-5)	69	94	74	84	78	62
620-22849-6	MW-103 (0-2)	63	76	67	70	61	63
620-22849-7	MW-106 (0-2)	68	71	69	65	147 S1+	68
620-22849-8	SB-8 (4-5)	74	101	78	91	85	75
620-22849-9	SB-8 (4-5)-DUP	58	80	64	74	70	52
620-22849-10	MW-105 (0-2)	55	66	52	57	112 S1+	55
620-22849-11	SB-5 (0-2)	50	69	52	62	64	53
620-22849-12	MW-104 (0-2)	57	73	57	68	71	61
620-22849-13	SB-3 (0-2)	56	77	60	67	66	59
LCS 620-42474/2-A	Lab Control Sample	76	95	76	90	85	78
LCS 620-42656/2-A	Lab Control Sample	72	86	71	82	78	70
LCSD 620-42474/3-A	Lab Control Sample Dup	77	96	77	91	86	78
LCSD 620-42656/3-A	Lab Control Sample Dup	72	84	72	83	78	73
MB 620-42474/1-A	Method Blank	74	97	75	90	70	73
MB 620-42656/1-A	Method Blank	57	75	60	70	48	57

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

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

Method: 8015D - Gasoline Range Organics (GRO) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	25DBTf1 (70-130)
620-22849-1	SB-1 (0-2)	93
620-22849-2	MW-101 (0-2)	75
620-22849-3	SB-6 (2-4)	80
620-22849-4	MW-108 (0-2)	85
620-22849-5	SB-7 (4-5)	73
620-22849-6	MW-103 (0-2)	74
620-22849-7	MW-106 (0-2)	93
620-22849-8	SB-8 (4-5)	82
620-22849-9	SB-8 (4-5)-DUP	81
620-22849-10	MW-105 (0-2)	86
620-22849-11	SB-5 (0-2)	70
620-22849-12	MW-104 (0-2)	72
620-22849-13	SB-3 (0-2)	69 S1-
LCS 620-42618/1-A	Lab Control Sample	103
LCSD 620-42618/2-A	Lab Control Sample Dup	102
MB 620-42618/3-A	Method Blank	100

Surrogate Legend

25DBTf = 2,5-Dibromotoluene (fid)

Method: 8015D - Diesel Range Organics (DRO) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTPH (40-140)	1COD (40-140)
620-22849-1	SB-1 (0-2)	52	78
620-22849-2	MW-101 (0-2)	69	85
620-22849-3	SB-6 (2-4)	64	76
620-22849-4	MW-108 (0-2)	53	74
620-22849-5	SB-7 (4-5)	62	84
620-22849-6	MW-103 (0-2)	59	75
620-22849-7	MW-106 (0-2)	75	0 S1-
620-22849-8	SB-8 (4-5)	61	75
620-22849-9	SB-8 (4-5)-DUP	71	60
620-22849-10	MW-105 (0-2)	55	77
620-22849-11	SB-5 (0-2)	58	73
620-22849-12	MW-104 (0-2)	63	85
620-22849-13	SB-3 (0-2)	54	75
LCS 620-42483/2-A	Lab Control Sample	79	81
LCS 620-42671/2-A	Lab Control Sample	77	79
LCSD 620-42483/3-A	Lab Control Sample Dup	86	88
LCSD 620-42671/3-A	Lab Control Sample Dup	76	78
MB 620-42483/1-A	Method Blank	57	50
MB 620-42671/1-A	Method Blank	58	63

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Surrogate Legend

OTPH = o-Terphenyl
1COD = 1-Chlorooctadecane

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

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

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(30-150)	(30-150)
620-22849-1	SB-1 (0-2)	76	73
620-22849-2	MW-101 (0-2)	49	88
620-22849-3	SB-6 (2-4)	68	148
620-22849-4	MW-108 (0-2)	34	261 S1+
620-22849-6	MW-103 (0-2)	55	132
620-22849-7	MW-106 (0-2)	41	100
620-22849-11	SB-5 (0-2)	36	61
620-22849-12	MW-104 (0-2)	55	71
620-22849-13	SB-3 (0-2)	39	40
LCS 620-42434/2-A	Lab Control Sample	44	97
LCSD 620-42434/3-A	Lab Control Sample Dup	44	115
MB 620-42434/1-A	Method Blank	40	101

Surrogate Legend

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

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

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

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)
620-22849-10	MW-105 (0-2)	40	128 p

Surrogate Legend

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

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: MB 620-42500/3-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Acetone	ND		50.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Acrylonitrile	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Benzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromodichloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromoform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Bromomethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
n-Butylbenzene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Carbon disulfide	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloroethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloroform	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Chloromethane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dibromochloromethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dibromomethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Isopropylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Methylene Chloride	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1

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

Lab Sample ID: MB 620-42500/3-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
N-Propylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Styrene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tetrachloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Toluene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Trichloroethene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Vinyl chloride	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
m,p-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
o-Xylene	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
tert-Butanol	ND		100		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
1,4-Dioxane	ND		100		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/13/24 15:48	12/13/24 19:42	1
Ethanol	ND		1000		ug/Kg		12/13/24 15:48	12/13/24 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*	*12/13/24 15:48*	*12/13/24 19:42*	*1*

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	19.93		ug/Kg		100	70 - 130		
Acetone			20.0	21.89	J	ug/Kg		109	70 - 130		
Acrylonitrile			20.0	20.36		ug/Kg		102	70 - 130		
Benzene			20.0	20.40		ug/Kg		102	70 - 130		
Bromobenzene			20.0	19.98		ug/Kg		100	70 - 130		
Bromochloromethane			20.0	20.57		ug/Kg		103	70 - 130		
Bromodichloromethane			20.0	19.81		ug/Kg		99	70 - 130		

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

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromoform	20.0	19.10		ug/Kg		95	70 - 130
Bromomethane	20.0	21.57		ug/Kg		108	70 - 130
2-Butanone (MEK)	20.0	21.42		ug/Kg		107	70 - 130
n-Butylbenzene	20.0	20.93		ug/Kg		105	70 - 130
sec-Butylbenzene	20.0	21.03		ug/Kg		105	70 - 130
tert-Butylbenzene	20.0	21.06		ug/Kg		105	70 - 130
Carbon disulfide	20.0	20.63		ug/Kg		103	70 - 130
Carbon tetrachloride	20.0	19.91		ug/Kg		100	70 - 130
Chlorobenzene	20.0	20.15		ug/Kg		101	70 - 130
Chloroethane	20.0	19.51		ug/Kg		98	70 - 130
Chloroform	20.0	20.08		ug/Kg		100	70 - 130
Chloromethane	20.0	20.18		ug/Kg		101	70 - 130
2-Chlorotoluene	20.0	20.05		ug/Kg		100	70 - 130
4-Chlorotoluene	20.0	19.86		ug/Kg		99	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	19.48		ug/Kg		97	70 - 130
Dibromochloromethane	20.0	19.68		ug/Kg		98	70 - 130
1,2-Dibromoethane (EDB)	20.0	20.35		ug/Kg		102	70 - 130
Dibromomethane	20.0	20.31		ug/Kg		102	70 - 130
1,2-Dichlorobenzene	20.0	20.39		ug/Kg		102	70 - 130
1,3-Dichlorobenzene	20.0	20.06		ug/Kg		100	70 - 130
1,4-Dichlorobenzene	20.0	20.06		ug/Kg		100	70 - 130
Dichlorodifluoromethane (Freon 12)	20.0	19.04		ug/Kg		95	70 - 130
1,1-Dichloroethane	20.0	20.10		ug/Kg		101	70 - 130
1,2-Dichloroethane	20.0	20.16		ug/Kg		101	70 - 130
1,1-Dichloroethene	20.0	20.22		ug/Kg		101	70 - 130
cis-1,2-Dichloroethene	20.0	20.24		ug/Kg		101	70 - 130
trans-1,2-Dichloroethene	20.0	20.26		ug/Kg		101	70 - 130
1,2-Dichloropropane	20.0	20.18		ug/Kg		101	70 - 130
1,3-Dichloropropane	20.0	20.40		ug/Kg		102	70 - 130
2,2-Dichloropropane	20.0	19.90		ug/Kg		100	70 - 130
1,1-Dichloropropene	20.0	20.07		ug/Kg		100	70 - 130
cis-1,3-Dichloropropene	20.0	19.79		ug/Kg		99	70 - 130
trans-1,3-Dichloropropene	20.0	19.89		ug/Kg		99	70 - 130
Ethylbenzene	20.0	20.38		ug/Kg		102	70 - 130
Hexachlorobutadiene	20.0	21.98		ug/Kg		110	70 - 130
2-Hexanone (MBK)	20.0	19.06		ug/Kg		95	70 - 130
Isopropylbenzene	20.0	20.45		ug/Kg		102	70 - 130
4-Isopropyltoluene	20.0	20.95		ug/Kg		105	70 - 130
Methyl tert-butyl ether	20.0	20.69		ug/Kg		103	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	19.36		ug/Kg		97	70 - 130
Methylene Chloride	20.0	21.74		ug/Kg		109	70 - 130
Naphthalene	20.0	20.94		ug/Kg		105	70 - 130
N-Propylbenzene	20.0	20.56		ug/Kg		103	70 - 130
Styrene	20.0	20.34		ug/Kg		102	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.78		ug/Kg		99	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.65		ug/Kg		93	70 - 130
Tetrachloroethene	20.0	19.42		ug/Kg		97	70 - 130
Toluene	20.0	20.25		ug/Kg		101	70 - 130

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

Lab Sample ID: LCS 620-42500/1-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3-Trichlorobenzene			20.0	21.30		ug/Kg		106	70 - 130		
1,2,4-Trichlorobenzene			20.0	19.83		ug/Kg		99	70 - 130		
1,3,5-Trichlorobenzene			20.0	20.68		ug/Kg		103	70 - 130		
1,1,1-Trichloroethane			20.0	20.14		ug/Kg		101	70 - 130		
1,1,2-Trichloroethane			20.0	19.96		ug/Kg		100	70 - 130		
Trichloroethene			20.0	21.17		ug/Kg		106	70 - 130		
Trichlorofluoromethane (Freon 11)			20.0	19.59		ug/Kg		98	70 - 130		
1,2,3-Trichloropropane			20.0	19.98		ug/Kg		100	70 - 130		
1,2,4-Trimethylbenzene			20.0	20.39		ug/Kg		102	70 - 130		
1,3,5-Trimethylbenzene			20.0	20.30		ug/Kg		101	70 - 130		
Vinyl chloride			20.0	19.93		ug/Kg		100	70 - 130		
m,p-Xylene			20.0	20.09		ug/Kg		100	70 - 130		
o-Xylene			20.0	20.13		ug/Kg		101	70 - 130		
Tetrahydrofuran			20.0	19.44		ug/Kg		97	70 - 130		
Ethyl ether			20.0	20.22		ug/Kg		101	70 - 130		
Tert-amyl methyl ether			20.0	20.23		ug/Kg		101	70 - 130		
Ethyl tert-butyl ether			20.0	20.47		ug/Kg		102	70 - 130		
di-Isopropyl ether			20.0	20.44		ug/Kg		102	70 - 130		
tert-Butanol			200	181.6		ug/Kg		91	70 - 130		
1,4-Dioxane			200	179.5		ug/Kg		90	70 - 130		
trans-1,4-Dichloro-2-butene			20.0	18.68	J	ug/Kg		93	70 - 130		
Ethanol			400	370.0	J	ug/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 620-42500/2-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	20.28		ug/Kg		101	70 - 130	2	30
Acetone			20.0	24.81	J	ug/Kg		124	70 - 130	13	30
Acrylonitrile			20.0	21.25		ug/Kg		106	70 - 130	4	30
Benzene			20.0	21.33		ug/Kg		107	70 - 130	4	30
Bromobenzene			20.0	20.63		ug/Kg		103	70 - 130	3	30
Bromochloromethane			20.0	21.14		ug/Kg		106	70 - 130	3	30
Bromodichloromethane			20.0	21.04		ug/Kg		105	70 - 130	6	30
Bromoform			20.0	19.96		ug/Kg		100	70 - 130	4	30
Bromomethane			20.0	22.28		ug/Kg		111	70 - 130	3	30
2-Butanone (MEK)			20.0	22.16		ug/Kg		111	70 - 130	3	30
n-Butylbenzene			20.0	20.69		ug/Kg		103	70 - 130	1	30
sec-Butylbenzene			20.0	21.47		ug/Kg		107	70 - 130	2	30
tert-Butylbenzene			20.0	21.55		ug/Kg		108	70 - 130	2	30

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

Lab Sample ID: LCSD 620-42500/2-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 42502
Prep Batch: 42500

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon disulfide	20.0	21.20		ug/Kg		106	70 - 130	3	30
Carbon tetrachloride	20.0	20.46		ug/Kg		102	70 - 130	3	30
Chlorobenzene	20.0	20.76		ug/Kg		104	70 - 130	3	30
Chloroethane	20.0	19.89		ug/Kg		99	70 - 130	2	30
Chloroform	20.0	20.87		ug/Kg		104	70 - 130	4	30
Chloromethane	20.0	21.23		ug/Kg		106	70 - 130	5	30
2-Chlorotoluene	20.0	20.96		ug/Kg		105	70 - 130	4	30
4-Chlorotoluene	20.0	20.50		ug/Kg		103	70 - 130	3	30
1,2-Dibromo-3-Chloropropane	20.0	21.02		ug/Kg		105	70 - 130	8	30
Dibromochloromethane	20.0	20.50		ug/Kg		102	70 - 130	4	30
1,2-Dibromoethane (EDB)	20.0	21.17		ug/Kg		106	70 - 130	4	30
Dibromomethane	20.0	20.61		ug/Kg		103	70 - 130	1	30
1,2-Dichlorobenzene	20.0	21.68		ug/Kg		108	70 - 130	6	30
1,3-Dichlorobenzene	20.0	20.35		ug/Kg		102	70 - 130	1	30
1,4-Dichlorobenzene	20.0	20.45		ug/Kg		102	70 - 130	2	30
Dichlorodifluoromethane (Freon 12)	20.0	19.39		ug/Kg		97	70 - 130	2	30
1,1-Dichloroethane	20.0	21.17		ug/Kg		106	70 - 130	5	30
1,2-Dichloroethane	20.0	21.06		ug/Kg		105	70 - 130	4	30
1,1-Dichloroethene	20.0	21.00		ug/Kg		105	70 - 130	4	30
cis-1,2-Dichloroethene	20.0	21.89		ug/Kg		109	70 - 130	8	30
trans-1,2-Dichloroethene	20.0	20.85		ug/Kg		104	70 - 130	3	30
1,2-Dichloropropane	20.0	21.58		ug/Kg		108	70 - 130	7	30
1,3-Dichloropropane	20.0	21.45		ug/Kg		107	70 - 130	5	30
2,2-Dichloropropane	20.0	21.16		ug/Kg		106	70 - 130	6	30
1,1-Dichloropropene	20.0	20.62		ug/Kg		103	70 - 130	3	30
cis-1,3-Dichloropropene	20.0	20.56		ug/Kg		103	70 - 130	4	30
trans-1,3-Dichloropropene	20.0	20.48		ug/Kg		102	70 - 130	3	30
Ethylbenzene	20.0	21.13		ug/Kg		106	70 - 130	4	30
Hexachlorobutadiene	20.0	21.77		ug/Kg		109	70 - 130	1	30
2-Hexanone (MBK)	20.0	19.31		ug/Kg		97	70 - 130	1	30
Isopropylbenzene	20.0	21.27		ug/Kg		106	70 - 130	4	30
4-Isopropyltoluene	20.0	21.34		ug/Kg		107	70 - 130	2	30
Methyl tert-butyl ether	20.0	21.53		ug/Kg		108	70 - 130	4	30
4-Methyl-2-pentanone (MIBK)	20.0	19.29		ug/Kg		96	70 - 130	0	30
Methylene Chloride	20.0	22.31		ug/Kg		112	70 - 130	3	30
Naphthalene	20.0	22.37		ug/Kg		112	70 - 130	7	30
N-Propylbenzene	20.0	20.87		ug/Kg		104	70 - 130	2	30
Styrene	20.0	20.88		ug/Kg		104	70 - 130	3	30
1,1,1,2-Tetrachloroethane	20.0	20.75		ug/Kg		104	70 - 130	5	30
1,1,2,2-Tetrachloroethane	20.0	20.09		ug/Kg		100	70 - 130	7	30
Tetrachloroethene	20.0	19.82		ug/Kg		99	70 - 130	2	30
Toluene	20.0	21.16		ug/Kg		106	70 - 130	4	30
1,2,3-Trichlorobenzene	20.0	21.81		ug/Kg		109	70 - 130	2	30
1,2,4-Trichlorobenzene	20.0	20.38		ug/Kg		102	70 - 130	3	30
1,3,5-Trichlorobenzene	20.0	20.86		ug/Kg		104	70 - 130	1	30
1,1,1-Trichloroethane	20.0	20.94		ug/Kg		105	70 - 130	4	30
1,1,2-Trichloroethane	20.0	21.27		ug/Kg		106	70 - 130	6	30
Trichloroethene	20.0	21.42		ug/Kg		107	70 - 130	1	30

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

Lab Sample ID: LCSD 620-42500/2-A
Matrix: Solid
Analysis Batch: 42502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42500

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichlorofluoromethane (Freon 11)			20.0	20.03		ug/Kg		100	70 - 130	2	30
1,2,3-Trichloropropane			20.0	21.12		ug/Kg		106	70 - 130	6	30
1,2,4-Trimethylbenzene			20.0	21.02		ug/Kg		105	70 - 130	3	30
1,3,5-Trimethylbenzene			20.0	21.16		ug/Kg		106	70 - 130	4	30
Vinyl chloride			20.0	21.10		ug/Kg		105	70 - 130	6	30
m,p-Xylene			20.0	20.70		ug/Kg		104	70 - 130	3	30
o-Xylene			20.0	21.27		ug/Kg		106	70 - 130	6	30
Tetrahydrofuran			20.0	21.00		ug/Kg		105	70 - 130	8	30
Ethyl ether			20.0	20.93		ug/Kg		105	70 - 130	3	30
Tert-amyl methyl ether			20.0	21.43		ug/Kg		107	70 - 130	6	30
Ethyl tert-butyl ether			20.0	21.36		ug/Kg		107	70 - 130	4	30
di-Isopropyl ether			20.0	21.55		ug/Kg		108	70 - 130	5	30
tert-Butanol			200	188.6		ug/Kg		94	70 - 130	4	30
1,4-Dioxane			200	180.4		ug/Kg		90	70 - 130	1	30
trans-1,4-Dichloro-2-butene			20.0	18.67	J	ug/Kg		93	70 - 130	0	30
Ethanol			400	391.0	J	ug/Kg		98	70 - 130	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*

Lab Sample ID: MB 620-42541/3-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42541

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Acetone	ND		50.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Acrylonitrile	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Benzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Bromobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Bromochloromethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Bromodichloromethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Bromoform	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Bromomethane	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
n-Butylbenzene	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Carbon disulfide	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Chlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Chloroethane	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Chloroform	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Chloromethane	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1

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

Lab Sample ID: MB 620-42541/3-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42541

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Dibromochloromethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Dibromomethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Ethylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Isopropylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Methylene Chloride	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Naphthalene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
N-Propylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Styrene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Tetrachloroethene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Toluene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Trichloroethene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Vinyl chloride	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
m,p-Xylene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
o-Xylene	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1

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

Lab Sample ID: MB 620-42541/3-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42541

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	ND		10.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Ethyl ether	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
tert-Butanol	ND		100		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
1,4-Dioxane	ND		100		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/16/24 08:00	12/16/24 11:32	1
Ethanol	ND		1000		ug/Kg		12/16/24 08:00	12/16/24 11:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*12/16/24 08:00*	*12/16/24 11:32*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/16/24 08:00*	*12/16/24 11:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*	*12/16/24 08:00*	*12/16/24 11:32*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*12/16/24 08:00*	*12/16/24 11:32*	*1*

Lab Sample ID: LCS 620-42541/1-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.0	20.07		ug/Kg		100	70 - 130
Acetone	20.0	18.73	J	ug/Kg		94	70 - 130
Acrylonitrile	20.0	17.81		ug/Kg		89	70 - 130
Benzene	20.0	19.58		ug/Kg		98	70 - 130
Bromobenzene	20.0	20.14		ug/Kg		101	70 - 130
Bromochloromethane	20.0	21.04		ug/Kg		105	70 - 130
Bromodichloromethane	20.0	20.28		ug/Kg		101	70 - 130
Bromoform	20.0	19.11		ug/Kg		96	70 - 130
Bromomethane	20.0	19.79		ug/Kg		99	70 - 130
2-Butanone (MEK)	20.0	19.15		ug/Kg		96	70 - 130
n-Butylbenzene	20.0	19.02		ug/Kg		95	70 - 130
sec-Butylbenzene	20.0	19.88		ug/Kg		99	70 - 130
tert-Butylbenzene	20.0	20.72		ug/Kg		104	70 - 130
Carbon disulfide	20.0	19.43		ug/Kg		97	70 - 130
Carbon tetrachloride	20.0	20.53		ug/Kg		103	70 - 130
Chlorobenzene	20.0	19.67		ug/Kg		98	70 - 130
Chloroethane	20.0	19.33		ug/Kg		97	70 - 130
Chloroform	20.0	20.43		ug/Kg		102	70 - 130
Chloromethane	20.0	18.23		ug/Kg		91	70 - 130
2-Chlorotoluene	20.0	19.93		ug/Kg		100	70 - 130
4-Chlorotoluene	20.0	19.74		ug/Kg		99	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	18.33		ug/Kg		92	70 - 130
Dibromochloromethane	20.0	19.89		ug/Kg		99	70 - 130
1,2-Dibromoethane (EDB)	20.0	20.01		ug/Kg		100	70 - 130
Dibromomethane	20.0	20.13		ug/Kg		101	70 - 130
1,2-Dichlorobenzene	20.0	19.54		ug/Kg		98	70 - 130
1,3-Dichlorobenzene	20.0	20.22		ug/Kg		101	70 - 130

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

Lab Sample ID: LCS 620-42541/1-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	20.0	19.63		ug/Kg		98	70 - 130
Dichlorodifluoromethane (Freon 12)	20.0	16.32		ug/Kg		82	70 - 130
1,1-Dichloroethane	20.0	19.99		ug/Kg		100	70 - 130
1,2-Dichloroethane	20.0	21.10		ug/Kg		105	70 - 130
1,1-Dichloroethene	20.0	19.96		ug/Kg		100	70 - 130
cis-1,2-Dichloroethene	20.0	19.62		ug/Kg		98	70 - 130
trans-1,2-Dichloroethene	20.0	19.30		ug/Kg		96	70 - 130
1,2-Dichloropropane	20.0	19.36		ug/Kg		97	70 - 130
1,3-Dichloropropane	20.0	20.21		ug/Kg		101	70 - 130
2,2-Dichloropropane	20.0	20.57		ug/Kg		103	70 - 130
1,1-Dichloropropene	20.0	19.92		ug/Kg		100	70 - 130
cis-1,3-Dichloropropene	20.0	19.24		ug/Kg		96	70 - 130
trans-1,3-Dichloropropene	20.0	19.74		ug/Kg		99	70 - 130
Ethylbenzene	20.0	19.71		ug/Kg		99	70 - 130
Hexachlorobutadiene	20.0	20.22		ug/Kg		101	70 - 130
2-Hexanone (MBK)	20.0	17.44		ug/Kg		87	70 - 130
Isopropylbenzene	20.0	19.66		ug/Kg		98	70 - 130
4-Isopropyltoluene	20.0	19.12		ug/Kg		96	70 - 130
Methyl tert-butyl ether	20.0	20.23		ug/Kg		101	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	16.95		ug/Kg		85	70 - 130
Methylene Chloride	20.0	19.81		ug/Kg		99	70 - 130
Naphthalene	20.0	19.29		ug/Kg		96	70 - 130
N-Propylbenzene	20.0	19.64		ug/Kg		98	70 - 130
Styrene	20.0	19.64		ug/Kg		98	70 - 130
1,1,1,2-Tetrachloroethane	20.0	19.94		ug/Kg		100	70 - 130
1,1,2,2-Tetrachloroethane	20.0	18.89		ug/Kg		94	70 - 130
Tetrachloroethene	20.0	19.86		ug/Kg		99	70 - 130
Toluene	20.0	19.91		ug/Kg		100	70 - 130
1,2,3-Trichlorobenzene	20.0	19.94		ug/Kg		100	70 - 130
1,2,4-Trichlorobenzene	20.0	20.61		ug/Kg		103	70 - 130
1,3,5-Trichlorobenzene	20.0	19.97		ug/Kg		100	70 - 130
1,1,1-Trichloroethane	20.0	20.75		ug/Kg		104	70 - 130
1,1,2-Trichloroethane	20.0	19.71		ug/Kg		99	70 - 130
Trichloroethene	20.0	20.28		ug/Kg		101	70 - 130
Trichlorofluoromethane (Freon 11)	20.0	20.66		ug/Kg		103	70 - 130
1,2,3-Trichloropropane	20.0	19.88		ug/Kg		99	70 - 130
1,2,4-Trimethylbenzene	20.0	20.01		ug/Kg		100	70 - 130
1,3,5-Trimethylbenzene	20.0	20.04		ug/Kg		100	70 - 130
Vinyl chloride	20.0	18.90		ug/Kg		95	70 - 130
m,p-Xylene	20.0	19.47		ug/Kg		97	70 - 130
o-Xylene	20.0	19.55		ug/Kg		98	70 - 130
Tetrahydrofuran	20.0	18.63		ug/Kg		93	70 - 130
Ethyl ether	20.0	19.38		ug/Kg		97	70 - 130
Tert-amyl methyl ether	20.0	19.77		ug/Kg		99	70 - 130
Ethyl tert-butyl ether	20.0	19.50		ug/Kg		98	70 - 130
di-Isopropyl ether	20.0	19.13		ug/Kg		96	70 - 130
tert-Butanol	200	172.2		ug/Kg		86	70 - 130

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

Lab Sample ID: LCS 620-42541/1-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42541

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			200	170.7		ug/Kg		85	70 - 130		
trans-1,4-Dichloro-2-butene			20.0	18.71	J	ug/Kg		94	70 - 130		
Ethanol			400	308.2	J	ug/Kg		77	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 620-42541/2-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42541

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	19.95		ug/Kg		100	70 - 130	1	30
Acetone			20.0	19.58	J	ug/Kg		98	70 - 130	4	30
Acrylonitrile			20.0	18.79		ug/Kg		94	70 - 130	5	30
Benzene			20.0	19.63		ug/Kg		98	70 - 130	0	30
Bromobenzene			20.0	19.93		ug/Kg		100	70 - 130	1	30
Bromochloromethane			20.0	21.05		ug/Kg		105	70 - 130	0	30
Bromodichloromethane			20.0	20.06		ug/Kg		100	70 - 130	1	30
Bromoform			20.0	19.37		ug/Kg		97	70 - 130	1	30
Bromomethane			20.0	19.86		ug/Kg		99	70 - 130	0	30
2-Butanone (MEK)			20.0	20.11		ug/Kg		101	70 - 130	5	30
n-Butylbenzene			20.0	19.73		ug/Kg		99	70 - 130	4	30
sec-Butylbenzene			20.0	20.34		ug/Kg		102	70 - 130	2	30
tert-Butylbenzene			20.0	21.14		ug/Kg		106	70 - 130	2	30
Carbon disulfide			20.0	19.28		ug/Kg		96	70 - 130	1	30
Carbon tetrachloride			20.0	20.41		ug/Kg		102	70 - 130	1	30
Chlorobenzene			20.0	19.54		ug/Kg		98	70 - 130	1	30
Chloroethane			20.0	19.59		ug/Kg		98	70 - 130	1	30
Chloroform			20.0	20.27		ug/Kg		101	70 - 130	1	30
Chloromethane			20.0	18.00		ug/Kg		90	70 - 130	1	30
2-Chlorotoluene			20.0	19.39		ug/Kg		97	70 - 130	3	30
4-Chlorotoluene			20.0	19.77		ug/Kg		99	70 - 130	0	30
1,2-Dibromo-3-Chloropropane			20.0	19.41		ug/Kg		97	70 - 130	6	30
Dibromochloromethane			20.0	19.89		ug/Kg		99	70 - 130	0	30
1,2-Dibromoethane (EDB)			20.0	20.15		ug/Kg		101	70 - 130	1	30
Dibromomethane			20.0	19.99		ug/Kg		100	70 - 130	1	30
1,2-Dichlorobenzene			20.0	19.88		ug/Kg		99	70 - 130	2	30
1,3-Dichlorobenzene			20.0	19.97		ug/Kg		100	70 - 130	1	30
1,4-Dichlorobenzene			20.0	19.34		ug/Kg		97	70 - 130	1	30
Dichlorodifluoromethane (Freon 12)			20.0	15.85		ug/Kg		79	70 - 130	3	30
1,1-Dichloroethane			20.0	20.10		ug/Kg		101	70 - 130	1	30
1,2-Dichloroethane			20.0	20.77		ug/Kg		104	70 - 130	2	30
1,1-Dichloroethene			20.0	19.28		ug/Kg		96	70 - 130	3	30

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

Lab Sample ID: LCSD 620-42541/2-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42541

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	20.0	19.65		ug/Kg		98	70 - 130	0	30
trans-1,2-Dichloroethene	20.0	19.71		ug/Kg		99	70 - 130	2	30
1,2-Dichloropropane	20.0	19.37		ug/Kg		97	70 - 130	0	30
1,3-Dichloropropane	20.0	20.41		ug/Kg		102	70 - 130	1	30
2,2-Dichloropropane	20.0	20.38		ug/Kg		102	70 - 130	1	30
1,1-Dichloropropene	20.0	19.67		ug/Kg		98	70 - 130	1	30
cis-1,3-Dichloropropene	20.0	19.61		ug/Kg		98	70 - 130	2	30
trans-1,3-Dichloropropene	20.0	20.12		ug/Kg		101	70 - 130	2	30
Ethylbenzene	20.0	19.61		ug/Kg		98	70 - 130	0	30
Hexachlorobutadiene	20.0	21.87		ug/Kg		109	70 - 130	8	30
2-Hexanone (MBK)	20.0	18.89		ug/Kg		94	70 - 130	8	30
Isopropylbenzene	20.0	19.92		ug/Kg		100	70 - 130	1	30
4-Isopropyltoluene	20.0	19.88		ug/Kg		99	70 - 130	4	30
Methyl tert-butyl ether	20.0	20.57		ug/Kg		103	70 - 130	2	30
4-Methyl-2-pentanone (MIBK)	20.0	18.45		ug/Kg		92	70 - 130	8	30
Methylene Chloride	20.0	20.09		ug/Kg		100	70 - 130	1	30
Naphthalene	20.0	21.36		ug/Kg		107	70 - 130	10	30
N-Propylbenzene	20.0	19.83		ug/Kg		99	70 - 130	1	30
Styrene	20.0	19.69		ug/Kg		98	70 - 130	0	30
1,1,1,2-Tetrachloroethane	20.0	19.67		ug/Kg		98	70 - 130	1	30
1,1,2,2-Tetrachloroethane	20.0	19.04		ug/Kg		95	70 - 130	1	30
Tetrachloroethene	20.0	20.11		ug/Kg		101	70 - 130	1	30
Toluene	20.0	19.86		ug/Kg		99	70 - 130	0	30
1,2,3-Trichlorobenzene	20.0	22.02		ug/Kg		110	70 - 130	10	30
1,2,4-Trichlorobenzene	20.0	21.16		ug/Kg		106	70 - 130	3	30
1,3,5-Trichlorobenzene	20.0	20.44		ug/Kg		102	70 - 130	2	30
1,1,1-Trichloroethane	20.0	21.01		ug/Kg		105	70 - 130	1	30
1,1,2-Trichloroethane	20.0	19.91		ug/Kg		100	70 - 130	1	30
Trichloroethene	20.0	20.15		ug/Kg		101	70 - 130	1	30
Trichlorofluoromethane (Freon 11)	20.0	20.33		ug/Kg		102	70 - 130	2	30
1,2,3-Trichloropropane	20.0	19.72		ug/Kg		99	70 - 130	1	30
1,2,4-Trimethylbenzene	20.0	20.15		ug/Kg		101	70 - 130	1	30
1,3,5-Trimethylbenzene	20.0	20.18		ug/Kg		101	70 - 130	1	30
Vinyl chloride	20.0	18.82		ug/Kg		94	70 - 130	0	30
m,p-Xylene	20.0	19.47		ug/Kg		97	70 - 130	0	30
o-Xylene	20.0	19.41		ug/Kg		97	70 - 130	1	30
Tetrahydrofuran	20.0	18.65		ug/Kg		93	70 - 130	0	30
Ethyl ether	20.0	19.89		ug/Kg		99	70 - 130	3	30
Tert-amyl methyl ether	20.0	19.79		ug/Kg		99	70 - 130	0	30
Ethyl tert-butyl ether	20.0	20.05		ug/Kg		100	70 - 130	3	30
di-Isopropyl ether	20.0	19.63		ug/Kg		98	70 - 130	3	30
tert-Butanol	200	174.7		ug/Kg		87	70 - 130	1	30
1,4-Dioxane	200	192.7		ug/Kg		96	70 - 130	12	30
trans-1,4-Dichloro-2-butene	20.0	18.88	J	ug/Kg		94	70 - 130	1	30
Ethanol	400	320.0	J	ug/Kg		80	70 - 130	4	30

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

Lab Sample ID: LCSD 620-42541/2-A
Matrix: Solid
Analysis Batch: 42521

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42541

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*

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

Lab Sample ID: MB 620-42474/1-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42474

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Chloronaphthalene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Chlorophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Nitroaniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
2-Nitrophenol	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
3-Nitroaniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chloroaniline	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Nitroaniline	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
4-Nitrophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Acenaphthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Acenaphthylene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Aniline	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzidine	ND		660		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1

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

Lab Sample ID: MB 620-42474/1-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42474

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzoic acid	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Benzyl alcohol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Carbazole	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Chrysene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dibenzofuran	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Diethyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Dimethyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Fluoranthene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Fluorene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorobenzene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorobutadiene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Hexachloroethane	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Isophorone	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Naphthalene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Nitrobenzene	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pentachlorophenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Phenanthrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Phenol	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pyrene	ND		66.7		ug/Kg		12/13/24 11:09	12/17/24 11:51	1
Pyridine	ND		330		ug/Kg		12/13/24 11:09	12/17/24 11:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
2-Fluorophenol (Surr)	*97*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Nitrobenzene-d5 (Surr)	*75*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Phenol-d5 (Surr)	*90*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*15 - 110*	*12/13/24 11:09*	*12/17/24 11:51*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/13/24 11:09*	*12/17/24 11:51*	*1*

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

Lab Sample ID: LCS 620-42474/2-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	1670	1101		ug/Kg		66	22 - 93
1,2,4-Trichlorobenzene	1670	1187		ug/Kg		71	18 - 112
1,2-Dichlorobenzene	1670	1183		ug/Kg		71	21 - 107
1,3-Dichlorobenzene	1670	1219		ug/Kg		73	21 - 105
1,4-Dichlorobenzene	1670	1193		ug/Kg		72	20 - 107
1-Methylnaphthalene	1670	1347		ug/Kg		81	30 - 109
2,4,5-Trichlorophenol	1670	1244		ug/Kg		75	41 - 98
2,4,6-Trichlorophenol	1670	1192		ug/Kg		72	37 - 103
2,4-Dichlorophenol	1670	1274		ug/Kg		76	36 - 94
2,4-Dimethylphenol	1670	1152		ug/Kg		69	33 - 86
2,4-Dinitrophenol	1670	1208		ug/Kg		72	10 - 117
2,4-Dinitrotoluene	1670	1489		ug/Kg		89	22 - 129
2,6-Dinitrotoluene	1670	1306		ug/Kg		78	19 - 132
2-Chloronaphthalene	1670	1262		ug/Kg		76	20 - 117
2-Chlorophenol	1670	1375		ug/Kg		82	42 - 92
2-Methylnaphthalene	1670	1314		ug/Kg		79	10 - 153
2-Methylphenol	1670	1454		ug/Kg		87	39 - 96
2-Nitroaniline	1670	1440		ug/Kg		86	34 - 110
2-Nitrophenol	1670	1273		ug/Kg		76	32 - 100
3 & 4 Methylphenol	1670	1324		ug/Kg		79	30 - 100
3,3'-Dichlorobenzidine	1670	1211		ug/Kg		73	43 - 140
3-Nitroaniline	1670	1059		ug/Kg		64	10 - 104
4,6-Dinitro-2-methylphenol	1670	1535		ug/Kg		92	13 - 120
4-Bromophenyl phenyl ether	1670	1245		ug/Kg		75	10 - 138
4-Chloro-3-methylphenol	1670	1301		ug/Kg		78	10 - 138
4-Chloroaniline	1670	676.1		ug/Kg		41	10 - 100
4-Chlorophenyl phenyl ether	1670	1179		ug/Kg		71	10 - 132
4-Nitroaniline	1670	1269		ug/Kg		76	10 - 150
4-Nitrophenol	1670	1064		ug/Kg		64	10 - 123
Acenaphthene	1670	1272		ug/Kg		76	35 - 93
Acenaphthylene	1670	1223		ug/Kg		73	36 - 94
Aniline	1670	814.2		ug/Kg		49	13 - 78
Anthracene	1670	1305		ug/Kg		78	34 - 120
Azobenzene/Diphenyldiazene	1670	1255		ug/Kg		75	35 - 92
Benzidine	1670	ND	*-	ug/Kg		-14	10 - 95
Benzo[a]anthracene	1670	1283		ug/Kg		77	39 - 113
Benzo[a]pyrene	1670	1326		ug/Kg		80	38 - 109
Benzo[b]fluoranthene	1670	1246		ug/Kg		75	29 - 113
Benzo[g,h,i]perylene	1670	1472		ug/Kg		88	35 - 108
Benzo[k]fluoranthene	1670	1462		ug/Kg		88	28 - 112
Benzoic acid	1670	562.8		ug/Kg		34	10 - 82
Benzyl alcohol	1670	1197		ug/Kg		72	14 - 105
Bis(2-chloroethoxy)methane	1670	1263		ug/Kg		76	10 - 119
Bis(2-chloroethyl)ether	1670	1473		ug/Kg		88	10 - 111
bis (2-chloroisopropyl) ether	1670	1083		ug/Kg		65	10 - 122
Bis(2-ethylhexyl) phthalate	1670	1403		ug/Kg		84	10 - 150
Butyl benzyl phthalate	1670	1413		ug/Kg		85	10 - 150
Carbazole	1670	1243		ug/Kg		75	38 - 106

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

Lab Sample ID: LCS 620-42474/2-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chrysene	1670	1341		ug/Kg		80	38 - 109
Dibenz(a,h)anthracene	1670	1315		ug/Kg		79	34 - 103
Dibenzofuran	1670	1281		ug/Kg		77	17 - 121
Diethyl phthalate	1670	1325		ug/Kg		79	10 - 139
Dimethyl phthalate	1670	1343		ug/Kg		81	11 - 135
Di-n-butyl phthalate	1670	1342		ug/Kg		81	10 - 150
Di-n-octyl phthalate	1670	1290		ug/Kg		77	10 - 150
Fluoranthene	1670	1260		ug/Kg		76	36 - 111
Fluorene	1670	1304		ug/Kg		78	35 - 98
Hexachlorobenzene	1670	1308		ug/Kg		78	20 - 125
Hexachlorobutadiene	1670	946.6		ug/Kg		57	12 - 108
Hexachlorocyclopentadiene	1670	1453		ug/Kg		87	18 - 128
Hexachloroethane	1670	1231		ug/Kg		74	21 - 105
Indeno[1,2,3-cd]pyrene	1670	1351		ug/Kg		81	32 - 103
Isophorone	1670	1171		ug/Kg		70	10 - 96
Naphthalene	1670	1321		ug/Kg		79	31 - 94
Nitrobenzene	1670	1254		ug/Kg		75	13 - 117
N-Nitrosodimethylamine	1670	979.5		ug/Kg		59	10 - 100
N-Nitrosodi-n-propylamine	1670	1385		ug/Kg		83	10 - 134
N-Nitrosodiphenylamine	1670	1292		ug/Kg		78	14 - 139
Pentachloronitrobenzene	1670	1114		ug/Kg		67	19 - 108
Pentachlorophenol	1670	934.3		ug/Kg		56	20 - 93
Phenanthrene	1670	1220		ug/Kg		73	35 - 101
Phenol	1670	1429		ug/Kg		86	34 - 94
Pyrene	1670	1330		ug/Kg		80	31 - 116
Pyridine	1670	747.0		ug/Kg		45	10 - 94

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*30 - 130*
2-Fluorophenol (Surr)	*95*		*15 - 110*
Nitrobenzene-d5 (Surr)	*76*		*30 - 130*
Phenol-d5 (Surr)	*90*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*85*		*15 - 110*
Terphenyl-d14 (Surr)	*78*		*30 - 130*

Lab Sample ID: LCSD 620-42474/3-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42474

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	1670	1099		ug/Kg		66	22 - 93	0	30
1,2,4-Trichlorobenzene	1670	1186		ug/Kg		71	18 - 112	0	30
1,2-Dichlorobenzene	1670	1194		ug/Kg		72	21 - 107	1	30
1,3-Dichlorobenzene	1670	1218		ug/Kg		73	21 - 105	0	30
1,4-Dichlorobenzene	1670	1193		ug/Kg		72	20 - 107	0	30
1-Methylnaphthalene	1670	1339		ug/Kg		80	30 - 109	1	30
2,4,5-Trichlorophenol	1670	1254		ug/Kg		75	41 - 98	1	30
2,4,6-Trichlorophenol	1670	1183		ug/Kg		71	37 - 103	1	30

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: LCSD 620-42474/3-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42474

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-Dichlorophenol			1670	1278		ug/Kg		77	36 - 94	0	30
2,4-Dimethylphenol			1670	1177		ug/Kg		71	33 - 86	2	30
2,4-Dinitrophenol			1670	1237		ug/Kg		74	10 - 117	2	30
2,4-Dinitrotoluene			1670	1481		ug/Kg		89	22 - 129	1	30
2,6-Dinitrotoluene			1670	1313		ug/Kg		79	19 - 132	1	30
2-Chloronaphthalene			1670	1245		ug/Kg		75	20 - 117	1	30
2-Chlorophenol			1670	1373		ug/Kg		82	42 - 92	0	30
2-Methylnaphthalene			1670	1302		ug/Kg		78	10 - 153	1	30
2-Methylphenol			1670	1470		ug/Kg		88	39 - 96	1	30
2-Nitroaniline			1670	1441		ug/Kg		86	34 - 110	0	30
2-Nitrophenol			1670	1269		ug/Kg		76	32 - 100	0	30
3 & 4 Methylphenol			1670	1334		ug/Kg		80	30 - 100	1	30
3,3'-Dichlorobenzidine			1670	1322		ug/Kg		79	43 - 140	9	30
3-Nitroaniline			1670	1116		ug/Kg		67	10 - 104	5	30
4,6-Dinitro-2-methylphenol			1670	1585		ug/Kg		95	13 - 120	3	30
4-Bromophenyl phenyl ether			1670	1244		ug/Kg		75	10 - 138	0	30
4-Chloro-3-methylphenol			1670	1309		ug/Kg		79	10 - 138	1	30
4-Chloroaniline			1670	744.3		ug/Kg		45	10 - 100	10	30
4-Chlorophenyl phenyl ether			1670	1179		ug/Kg		71	10 - 132	0	30
4-Nitroaniline			1670	1333		ug/Kg		80	10 - 150	5	30
4-Nitrophenol			1670	1074		ug/Kg		64	10 - 123	1	30
Acenaphthene			1670	1256		ug/Kg		75	35 - 93	1	30
Acenaphthylene			1670	1233		ug/Kg		74	36 - 94	1	30
Aniline			1670	880.8		ug/Kg		53	13 - 78	8	30
Anthracene			1670	1294		ug/Kg		78	34 - 120	1	30
Azobenzene/Diphenyldiazene			1670	1249		ug/Kg		75	35 - 92	0	30
Benzidine			1670	ND	*- *1	ug/Kg		-7	10 - 95	68	30
Benzo[a]anthracene			1670	1303		ug/Kg		78	39 - 113	2	30
Benzo[a]pyrene			1670	1307		ug/Kg		78	38 - 109	1	30
Benzo[b]fluoranthene			1670	1319		ug/Kg		79	29 - 113	6	30
Benzo[g,h,i]perylene			1670	1456		ug/Kg		87	35 - 108	1	30
Benzo[k]fluoranthene			1670	1312		ug/Kg		79	28 - 112	11	30
Benzoic acid			1670	656.4		ug/Kg		39	10 - 82	15	30
Benzyl alcohol			1670	1190		ug/Kg		71	14 - 105	1	30
Bis(2-chloroethoxy)methane			1670	1262		ug/Kg		76	10 - 119	0	30
Bis(2-chloroethyl)ether			1670	1447		ug/Kg		87	10 - 111	2	30
bis (2-chloroisopropyl) ether			1670	1089		ug/Kg		65	10 - 122	1	30
Bis(2-ethylhexyl) phthalate			1670	1417		ug/Kg		85	10 - 150	1	30
Butyl benzyl phthalate			1670	1408		ug/Kg		84	10 - 150	0	30
Carbazole			1670	1243		ug/Kg		75	38 - 106	0	30
Chrysene			1670	1327		ug/Kg		80	38 - 109	1	30
Dibenz(a,h)anthracene			1670	1326		ug/Kg		80	34 - 103	1	30
Dibenzofuran			1670	1266		ug/Kg		76	17 - 121	1	30
Diethyl phthalate			1670	1309		ug/Kg		79	10 - 139	1	30
Dimethyl phthalate			1670	1314		ug/Kg		79	11 - 135	2	30
Di-n-butyl phthalate			1670	1320		ug/Kg		79	10 - 150	2	30
Di-n-octyl phthalate			1670	1261		ug/Kg		76	10 - 150	2	30
Fluoranthene			1670	1251		ug/Kg		75	36 - 111	1	30
Fluorene			1670	1291		ug/Kg		77	35 - 98	1	30

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

Lab Sample ID: LCSD 620-42474/3-A
Matrix: Solid
Analysis Batch: 42595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42474

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexachlorobenzene			1670	1306		ug/Kg		78	20 - 125	0	30
Hexachlorobutadiene			1670	941.7		ug/Kg		57	12 - 108	1	30
Hexachlorocyclopentadiene			1670	1475		ug/Kg		89	18 - 128	2	30
Hexachloroethane			1670	1243		ug/Kg		75	21 - 105	1	30
Indeno[1,2,3-cd]pyrene			1670	1339		ug/Kg		80	32 - 103	1	30
Isophorone			1670	1165		ug/Kg		70	10 - 96	1	30
Naphthalene			1670	1317		ug/Kg		79	31 - 94	0	30
Nitrobenzene			1670	1268		ug/Kg		76	13 - 117	1	30
N-Nitrosodimethylamine			1670	996.8		ug/Kg		60	10 - 100	2	30
N-Nitrosodi-n-propylamine			1670	1391		ug/Kg		83	10 - 134	0	30
N-Nitrosodiphenylamine			1670	1295		ug/Kg		78	14 - 139	0	30
Pentachloronitrobenzene			1670	1105		ug/Kg		66	19 - 108	1	30
Pentachlorophenol			1670	979.8		ug/Kg		59	20 - 93	5	30
Phenanthrene			1670	1212		ug/Kg		73	35 - 101	1	30
Phenol			1670	1417		ug/Kg		85	34 - 94	1	30
Pyrene			1670	1334		ug/Kg		80	31 - 116	0	30
Pyridine			1670	744.6		ug/Kg		45	10 - 94	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*
2-Fluorophenol (Surr)	*96*		*15 - 110*
Nitrobenzene-d5 (Surr)	*77*		*30 - 130*
Phenol-d5 (Surr)	*91*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*86*		*15 - 110*
Terphenyl-d14 (Surr)	*78*		*30 - 130*

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chloronaphthalene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Nitrophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Nitroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Nitrophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Aniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzidine	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzoic acid	ND		833		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzyl alcohol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Carbazole	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Chrysene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenzofuran	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Diethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dimethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluorene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobutadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachloroethane	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Isophorone	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Naphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Nitrobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenanthrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyridine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
2-Fluorophenol (Surr)	*75*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Nitrobenzene-d5 (Surr)	*60*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Phenol-d5 (Surr)	*70*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
2,4,6-Tribromophenol (Surr)	*48*		*15 - 110*	*12/18/24 09:57*	*12/19/24 15:29*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*12/18/24 09:57*	*12/19/24 15:29*	*1*

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,4,5-Tetrachlorobenzene			1670	1017		ug/Kg		61	22 - 93		
1,2,4-Trichlorobenzene			1670	1068		ug/Kg		64	18 - 112		
1,2-Dichlorobenzene			1670	1096		ug/Kg		66	21 - 107		
1,3-Dichlorobenzene			1670	1132		ug/Kg		68	21 - 105		
1,4-Dichlorobenzene			1670	1104		ug/Kg		66	20 - 107		
1-Methylnaphthalene			1670	1233		ug/Kg		74	30 - 109		
2,4,5-Trichlorophenol			1670	1189		ug/Kg		71	41 - 98		
2,4,6-Trichlorophenol			1670	1099		ug/Kg		66	37 - 103		
2,4-Dichlorophenol			1670	1160		ug/Kg		70	36 - 94		
2,4-Dimethylphenol			1670	1062		ug/Kg		64	33 - 86		
2,4-Dinitrophenol			1670	879.8		ug/Kg		53	10 - 117		
2,4-Dinitrotoluene			1670	1289		ug/Kg		77	22 - 129		
2,6-Dinitrotoluene			1670	1186		ug/Kg		71	19 - 132		
2-Chloronaphthalene			1670	1174		ug/Kg		70	20 - 117		
2-Chlorophenol			1670	1247		ug/Kg		75	42 - 92		
2-Methylnaphthalene			1670	1163		ug/Kg		70	10 - 153		
2-Methylphenol			1670	1311		ug/Kg		79	39 - 96		
2-Nitroaniline			1670	1335		ug/Kg		80	34 - 110		
2-Nitrophenol			1670	1143		ug/Kg		69	32 - 100		
3 & 4 Methylphenol			1670	1203		ug/Kg		72	30 - 100		
3,3'-Dichlorobenzidine			1670	1199		ug/Kg		72	43 - 140		
3-Nitroaniline			1670	1083		ug/Kg		65	10 - 104		
4,6-Dinitro-2-methylphenol			1670	904.0		ug/Kg		54	13 - 120		
4-Bromophenyl phenyl ether			1670	1150		ug/Kg		69	10 - 138		
4-Chloro-3-methylphenol			1670	1166		ug/Kg		70	10 - 138		
4-Chloroaniline			1670	688.5		ug/Kg		41	10 - 100		

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

Lab Sample ID: LCS 620-42656/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 42700
Prep Batch: 42656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Chlorophenyl phenyl ether	1670	1069		ug/Kg		64	10 - 132
4-Nitroaniline	1670	1262		ug/Kg		76	10 - 150
4-Nitrophenol	1670	884.4		ug/Kg		53	10 - 123
Acenaphthene	1670	1155		ug/Kg		69	35 - 93
Acenaphthylene	1670	1148		ug/Kg		69	36 - 94
Aniline	1670	776.6		ug/Kg		47	13 - 78
Anthracene	1670	1207		ug/Kg		72	34 - 120
Azobenzene/Diphenyldiazene	1670	1214		ug/Kg		73	35 - 92
Benzidine	1670	ND	*-	ug/Kg		-1	10 - 95
Benzo[a]anthracene	1670	1194		ug/Kg		72	39 - 113
Benzo[a]pyrene	1670	1196		ug/Kg		72	38 - 109
Benzo[b]fluoranthene	1670	1227		ug/Kg		74	29 - 113
Benzo[g,h,i]perylene	1670	1289		ug/Kg		77	35 - 108
Benzo[k]fluoranthene	1670	1137		ug/Kg		68	28 - 112
Benzoic acid	1670	879.4		ug/Kg		53	10 - 82
Benzyl alcohol	1670	1078		ug/Kg		65	14 - 105
Bis(2-chloroethoxy)methane	1670	1122		ug/Kg		67	10 - 119
Bis(2-chloroethyl)ether	1670	1307		ug/Kg		78	10 - 111
bis (2-chloroisopropyl) ether	1670	1051		ug/Kg		63	10 - 122
Bis(2-ethylhexyl) phthalate	1670	1204		ug/Kg		72	10 - 150
Butyl benzyl phthalate	1670	1227		ug/Kg		74	10 - 150
Carbazole	1670	1159		ug/Kg		70	38 - 106
Chrysene	1670	1214		ug/Kg		73	38 - 109
Dibenz(a,h)anthracene	1670	1174		ug/Kg		70	34 - 103
Dibenzofuran	1670	1151		ug/Kg		69	17 - 121
Diethyl phthalate	1670	1130		ug/Kg		68	10 - 139
Dimethyl phthalate	1670	1179		ug/Kg		71	11 - 135
Di-n-butyl phthalate	1670	1156		ug/Kg		69	10 - 150
Di-n-octyl phthalate	1670	1083		ug/Kg		65	10 - 150
Fluoranthene	1670	1124		ug/Kg		67	36 - 111
Fluorene	1670	1198		ug/Kg		72	35 - 98
Hexachlorobenzene	1670	1185		ug/Kg		71	20 - 125
Hexachlorobutadiene	1670	835.7		ug/Kg		50	12 - 108
Hexachlorocyclopentadiene	1670	872.4		ug/Kg		52	18 - 128
Hexachloroethane	1670	1141		ug/Kg		68	21 - 105
Indeno[1,2,3-cd]pyrene	1670	1207		ug/Kg		72	32 - 103
Isophorone	1670	1050		ug/Kg		63	10 - 96
Naphthalene	1670	1209		ug/Kg		73	31 - 94
Nitrobenzene	1670	1170		ug/Kg		70	13 - 117
N-Nitrosodimethylamine	1670	1013		ug/Kg		61	10 - 100
N-Nitrosodi-n-propylamine	1670	1283		ug/Kg		77	10 - 134
N-Nitrosodiphenylamine	1670	1230		ug/Kg		74	14 - 139
Pentachloronitrobenzene	1670	1001		ug/Kg		60	19 - 108
Pentachlorophenol	1670	578.2		ug/Kg		35	20 - 93
Phenanthrene	1670	1135		ug/Kg		68	35 - 101
Phenol	1670	1293		ug/Kg		78	34 - 94
Pyrene	1670	1238		ug/Kg		74	31 - 116
Pyridine	1670	794.3		ug/Kg		48	10 - 94

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

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	72		30 - 130
2-Fluorophenol (Surr)	86		15 - 110
Nitrobenzene-d5 (Surr)	71		30 - 130
Phenol-d5 (Surr)	82		15 - 110
2,4,6-Tribromophenol (Surr)	78		15 - 110
Terphenyl-d14 (Surr)	70		30 - 130

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			1670	1040		ug/Kg		62	22 - 93	2	30
1,2,4-Trichlorobenzene			1670	1096		ug/Kg		66	18 - 112	3	30
1,2-Dichlorobenzene			1670	1118		ug/Kg		67	21 - 107	2	30
1,3-Dichlorobenzene			1670	1161		ug/Kg		70	21 - 105	3	30
1,4-Dichlorobenzene			1670	1126		ug/Kg		68	20 - 107	2	30
1-Methylnaphthalene			1670	1261		ug/Kg		76	30 - 109	2	30
2,4,5-Trichlorophenol			1670	1196		ug/Kg		72	41 - 98	1	30
2,4,6-Trichlorophenol			1670	1138		ug/Kg		68	37 - 103	3	30
2,4-Dichlorophenol			1670	1150		ug/Kg		69	36 - 94	1	30
2,4-Dimethylphenol			1670	1091		ug/Kg		65	33 - 86	3	30
2,4-Dinitrophenol			1670	711.8		ug/Kg		43	10 - 117	21	30
2,4-Dinitrotoluene			1670	1342		ug/Kg		81	22 - 129	4	30
2,6-Dinitrotoluene			1670	1231		ug/Kg		74	19 - 132	4	30
2-Chloronaphthalene			1670	1204		ug/Kg		72	20 - 117	3	30
2-Chlorophenol			1670	1273		ug/Kg		76	42 - 92	2	30
2-Methylnaphthalene			1670	1197		ug/Kg		72	10 - 153	3	30
2-Methylphenol			1670	1356		ug/Kg		81	39 - 96	3	30
2-Nitroaniline			1670	1367		ug/Kg		82	34 - 110	2	30
2-Nitrophenol			1670	1166		ug/Kg		70	32 - 100	2	30
3 & 4 Methylphenol			1670	1227		ug/Kg		74	30 - 100	2	30
3,3'-Dichlorobenzidine			1670	1350		ug/Kg		81	43 - 140	12	30
3-Nitroaniline			1670	1145		ug/Kg		69	10 - 104	6	30
4,6-Dinitro-2-methylphenol			1670	932.3		ug/Kg		56	13 - 120	3	30
4-Bromophenyl phenyl ether			1670	1172		ug/Kg		70	10 - 138	2	30
4-Chloro-3-methylphenol			1670	1200		ug/Kg		72	10 - 138	3	30
4-Chloroaniline			1670	759.4		ug/Kg		46	10 - 100	10	30
4-Chlorophenyl phenyl ether			1670	1090		ug/Kg		65	10 - 132	2	30
4-Nitroaniline			1670	1316		ug/Kg		79	10 - 150	4	30
4-Nitrophenol			1670	889.9		ug/Kg		53	10 - 123	1	30
Acenaphthene			1670	1179		ug/Kg		71	35 - 93	2	30
Acenaphthylene			1670	1182		ug/Kg		71	36 - 94	3	30
Aniline			1670	828.8		ug/Kg		50	13 - 78	7	30
Anthracene			1670	1249		ug/Kg		75	34 - 120	3	30
Azobenzene/Diphenyldiazene			1670	1235		ug/Kg		74	35 - 92	2	30
Benzidine			1670	ND	*- *1	ug/Kg		-2	10 - 95	42	30
Benzo[a]anthracene			1670	1288		ug/Kg		77	39 - 113	8	30

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

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene			1670	1305		ug/Kg		78	38 - 109	9	30
Benzo[b]fluoranthene			1670	1164		ug/Kg		70	29 - 113	5	30
Benzo[g,h,i]perylene			1670	1384		ug/Kg		83	35 - 108	7	30
Benzo[k]fluoranthene			1670	1429		ug/Kg		86	28 - 112	23	30
Benzoic acid			1670	843.0		ug/Kg		51	10 - 82	4	30
Benzyl alcohol			1670	1091		ug/Kg		65	14 - 105	1	30
Bis(2-chloroethoxy)methane			1670	1148		ug/Kg		69	10 - 119	2	30
Bis(2-chloroethyl)ether			1670	1335		ug/Kg		80	10 - 111	2	30
bis (2-chloroisopropyl) ether			1670	1077		ug/Kg		65	10 - 122	2	30
Bis(2-ethylhexyl) phthalate			1670	1279		ug/Kg		77	10 - 150	6	30
Butyl benzyl phthalate			1670	1331		ug/Kg		80	10 - 150	8	30
Carbazole			1670	1208		ug/Kg		73	38 - 106	4	30
Chrysene			1670	1316		ug/Kg		79	38 - 109	8	30
Dibenz(a,h)anthracene			1670	1264		ug/Kg		76	34 - 103	7	30
Dibenzofuran			1670	1178		ug/Kg		71	17 - 121	2	30
Diethyl phthalate			1670	1175		ug/Kg		71	10 - 139	4	30
Dimethyl phthalate			1670	1215		ug/Kg		73	11 - 135	3	30
Di-n-butyl phthalate			1670	1197		ug/Kg		72	10 - 150	4	30
Di-n-octyl phthalate			1670	1165		ug/Kg		70	10 - 150	7	30
Fluoranthene			1670	1179		ug/Kg		71	36 - 111	5	30
Fluorene			1670	1232		ug/Kg		74	35 - 98	3	30
Hexachlorobenzene			1670	1227		ug/Kg		74	20 - 125	4	30
Hexachlorobutadiene			1670	856.5		ug/Kg		51	12 - 108	2	30
Hexachlorocyclopentadiene			1670	901.3		ug/Kg		54	18 - 128	3	30
Hexachloroethane			1670	1175		ug/Kg		71	21 - 105	3	30
Indeno[1,2,3-cd]pyrene			1670	1297		ug/Kg		78	32 - 103	7	30
Isophorone			1670	1073		ug/Kg		64	10 - 96	2	30
Naphthalene			1670	1243		ug/Kg		75	31 - 94	3	30
Nitrobenzene			1670	1205		ug/Kg		72	13 - 117	3	30
N-Nitrosodimethylamine			1670	1035		ug/Kg		62	10 - 100	2	30
N-Nitrosodi-n-propylamine			1670	1310		ug/Kg		79	10 - 134	2	30
N-Nitrosodiphenylamine			1670	1261		ug/Kg		76	14 - 139	2	30
Pentachloronitrobenzene			1670	1040		ug/Kg		62	19 - 108	4	30
Pentachlorophenol			1670	683.1		ug/Kg		41	20 - 93	17	30
Phenanthrene			1670	1166		ug/Kg		70	35 - 101	3	30
Phenol			1670	1321		ug/Kg		79	34 - 94	2	30
Pyrene			1670	1309		ug/Kg		79	31 - 116	6	30
Pyridine			1670	802.8		ug/Kg		48	10 - 94	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*
2-Fluorophenol (Surr)	*84*		*15 - 110*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*
Phenol-d5 (Surr)	*83*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*73*		*30 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 620-42618/3-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42618

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.00		mg/Kg		12/17/24 14:08	12/17/24 19:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*100*		*70 - 130*	*12/17/24 14:08*	*12/17/24 19:32*	*1*

Lab Sample ID: LCS 620-42618/1-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42618

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10			12.5	10.41		mg/Kg		83	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*103*		*70 - 130*

Lab Sample ID: LCSD 620-42618/2-A
Matrix: Solid
Analysis Batch: 42588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42618

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10			12.5	10.22		mg/Kg		82	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 620-42483/1-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42483

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		13.3		mg/Kg		12/13/24 13:01	12/16/24 13:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*57*		*40 - 140*	*12/13/24 13:01*	*12/16/24 13:52*	*1*
1-Chlorooctadecane	*50*		*40 - 140*	*12/13/24 13:01*	*12/16/24 13:52*	*1*

Lab Sample ID: LCS 620-42483/2-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42483

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			335	241.9		mg/Kg		72	33 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*79*		*40 - 140*

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 620-42483/2-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42483

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	81		40 - 140

Lab Sample ID: LCSD 620-42483/3-A
Matrix: Solid
Analysis Batch: 42540

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42483

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			335	259.8		mg/Kg		77	33 - 110	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	86		40 - 140
1-Chlorooctadecane	88		40 - 140

Lab Sample ID: MB 620-42671/1-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42671

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		13.3		mg/Kg		12/18/24 14:23	12/19/24 14:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	58		40 - 140	12/18/24 14:23	12/19/24 14:34	1
1-Chlorooctadecane	63		40 - 140	12/18/24 14:23	12/19/24 14:34	1

Lab Sample ID: LCS 620-42671/2-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42671

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			335	251.7		mg/Kg		75	33 - 110		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	77		40 - 140
1-Chlorooctadecane	79		40 - 140

Lab Sample ID: LCSD 620-42671/3-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42671

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			335	239.8		mg/Kg		72	33 - 110	5	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	76		40 - 140
1-Chlorooctadecane	78		40 - 140

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 620-42434/1-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42434

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1221	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1232	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1242	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1248	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1254	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1260	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1262	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1
PCB-1268	ND		20.0		ug/Kg		12/12/24 15:24	12/16/24 18:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*40*		*30 - 150*	*12/12/24 15:24*	*12/16/24 18:09*	*1*
DCB Decachlorobiphenyl (Surr)	*101*		*30 - 150*	*12/12/24 15:24*	*12/16/24 18:09*	*1*

Lab Sample ID: LCS 620-42434/2-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42434

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			167	133.2		ug/Kg		80	59 - 130		
PCB-1260			167	142.9		ug/Kg		86	58 - 134		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*44*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*97*		*30 - 150*

Lab Sample ID: LCSD 620-42434/3-A
Matrix: Solid
Analysis Batch: 42512

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42434

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			167	128.9		ug/Kg		77	59 - 130	3	30
PCB-1260			167	127.6		ug/Kg		77	58 - 134	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*44*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*115*		*30 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 620-42524/1-A
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42524

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.04		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Arsenic	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Beryllium	ND		0.904		mg/Kg		12/16/24 08:50	12/17/24 13:13	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 620-42524/1-A
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42524

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.904		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Chromium	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Copper	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Lead	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Nickel	ND		1.81		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Selenium	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Silver	ND		2.71		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Thallium	ND		5.42		mg/Kg		12/16/24 08:50	12/17/24 13:13	1
Zinc	ND		5.42		mg/Kg		12/16/24 08:50	12/17/24 13:13	1

Lab Sample ID: LCSSRM 620-42524/2-A ^5
Matrix: Solid
Analysis Batch: 42625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42524

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	121	81.43		mg/Kg		67.3	0.0 - 200.8
Arsenic	242	237.0		mg/Kg		97.9	81.8 - 118.6
Beryllium	160	159.0		mg/Kg		99.4	82.5 - 117.5
Cadmium	84.3	88.77		mg/Kg		105.3	82.2 - 117.8
Chromium	239	217.4		mg/Kg		91.0	72.4 - 106.3
Copper	217	193.4		mg/Kg		89.1	74.7 - 105.1
Lead	194	197.6		mg/Kg		101.8	82.0 - 118.6
Nickel	298	305.0		mg/Kg		102.3	82.2 - 117.8
Selenium	272	262.0		mg/Kg		96.3	80.1 - 119.5
Silver	76.7	71.99		mg/Kg		93.9	79.5 - 120.5
Thallium	108	107.3		mg/Kg		99.4	80.0 - 119.4
Zinc	236	282.4		mg/Kg		119.7	80.1 - 120.3

Lab Sample ID: MB 620-42609/1-A
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42609

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.21		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Arsenic	ND		0.362		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Beryllium	ND		0.121		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Cadmium	ND		0.121		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Chromium	ND		0.241		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Copper	ND		0.241		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Lead	ND		0.362		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 620-42609/1-A
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42609

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nickel	ND		0.241		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Selenium	ND		0.362		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Silver	ND		0.362		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Thallium	ND		0.724		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Zinc	ND		0.724		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2

Lab Sample ID: LCSSRM 620-42609/2-A ^5
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42609

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			121	92.30		mg/Kg		76.3	0.0 - 200.8		
Arsenic			242	235.3		mg/Kg		97.3	81.8 - 118.6		
Beryllium			160	159.5		mg/Kg		99.7	82.5 - 117.5		
Cadmium			84.3	87.50		mg/Kg		103.8	82.2 - 117.8		
Chromium			239	220.3		mg/Kg		92.2	72.4 - 106.3		
Copper			217	201.2		mg/Kg		92.7	74.7 - 105.1		
Lead			194	202.3		mg/Kg		104.3	82.0 - 118.6		
Nickel			298	306.9		mg/Kg		103.0	82.2 - 117.8		
Selenium			272	264.4		mg/Kg		97.2	80.1 - 119.5		
Silver			76.7	70.01		mg/Kg		91.3	79.5 - 120.5		
Thallium			108	112.0		mg/Kg		103.7	80.0 - 119.4		
Zinc			236	238.8		mg/Kg		101.2	80.1 - 120.3		

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 620-42543/1-A
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42543

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0500		mg/Kg		12/16/24 11:21	12/16/24 16:35	1

Lab Sample ID: LCSSRM 620-42543/2-A ^50
Matrix: Solid
Analysis Batch: 42649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42543

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			22.8	22.07		mg/Kg		96.8	70.6 - 129.4		

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: MB 620-42657/1-A
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42657

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0500		mg/Kg		12/18/24 10:08	12/18/24 15:44	1

Lab Sample ID: LCSSRM 620-42657/2-A ^50
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42657

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			22.8	23.42		mg/Kg		102.7	70.6 - 129.4		

GC/MS VOA

Pre Prep Batch: 42396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-6	MW-103 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	Frozen Preserve	
620-22849-14	Trip Blank	Total/NA	Solid	Frozen Preserve	

Prep Batch: 42500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-2	MW-101 (0-2)	Total/NA	Solid	5035	42396
620-22849-4	MW-108 (0-2)	Total/NA	Solid	5035	42396
620-22849-6	MW-103 (0-2)	Total/NA	Solid	5035	42396
620-22849-7	MW-106 (0-2)	Total/NA	Solid	5035	42396
620-22849-10	MW-105 (0-2)	Total/NA	Solid	5035	42396
MB 620-42500/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42500/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42500/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 42502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-2	MW-101 (0-2)	Total/NA	Solid	8260C	42500
620-22849-4	MW-108 (0-2)	Total/NA	Solid	8260C	42500
620-22849-6	MW-103 (0-2)	Total/NA	Solid	8260C	42500
620-22849-7	MW-106 (0-2)	Total/NA	Solid	8260C	42500
620-22849-10	MW-105 (0-2)	Total/NA	Solid	8260C	42500
MB 620-42500/3-A	Method Blank	Total/NA	Solid	8260C	42500
LCS 620-42500/1-A	Lab Control Sample	Total/NA	Solid	8260C	42500
LCSD 620-42500/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	42500

Analysis Batch: 42521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	8260C	42541
620-22849-11	SB-5 (0-2)	Total/NA	Solid	8260C	42541
620-22849-12	MW-104 (0-2)	Total/NA	Solid	8260C	42541
620-22849-13	SB-3 (0-2)	Total/NA	Solid	8260C	42541
620-22849-14	Trip Blank	Total/NA	Solid	8260C	42541
MB 620-42541/3-A	Method Blank	Total/NA	Solid	8260C	42541
LCS 620-42541/1-A	Lab Control Sample	Total/NA	Solid	8260C	42541
LCSD 620-42541/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	42541

GC/MS VOA

Prep Batch: 42541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	5035	42396
620-22849-11	SB-5 (0-2)	Total/NA	Solid	5035	42396
620-22849-12	MW-104 (0-2)	Total/NA	Solid	5035	42396
620-22849-13	SB-3 (0-2)	Total/NA	Solid	5035	42396
620-22849-14	Trip Blank	Total/NA	Solid	5035	42396
MB 620-42541/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42541/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42541/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 42474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	3546	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	3546	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	3546	
MB 620-42474/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42474/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42474/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	8270D	42474
620-22849-2	MW-101 (0-2)	Total/NA	Solid	8270D	42474
MB 620-42474/1-A	Method Blank	Total/NA	Solid	8270D	42474
LCS 620-42474/2-A	Lab Control Sample	Total/NA	Solid	8270D	42474
LCSD 620-42474/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42474

Prep Batch: 42656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-4	MW-108 (0-2)	Total/NA	Solid	3546	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	3546	
620-22849-6	MW-103 (0-2)	Total/NA	Solid	3546	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	3546	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	3546	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	3546	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	3546	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	3546	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	3546	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	3546	
MB 620-42656/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-3	SB-6 (2-4)	Total/NA	Solid	8270D	42474
620-22849-4	MW-108 (0-2)	Total/NA	Solid	8270D	42656
620-22849-5	SB-7 (4-5)	Total/NA	Solid	8270D	42656
620-22849-6	MW-103 (0-2)	Total/NA	Solid	8270D	42656
620-22849-7	MW-106 (0-2)	Total/NA	Solid	8270D	42656

GC/MS Semi VOA (Continued)

Analysis Batch: 42700 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-8	SB-8 (4-5)	Total/NA	Solid	8270D	42656
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	8270D	42656
620-22849-10	MW-105 (0-2)	Total/NA	Solid	8270D	42656
620-22849-11	SB-5 (0-2)	Total/NA	Solid	8270D	42656
620-22849-12	MW-104 (0-2)	Total/NA	Solid	8270D	42656
620-22849-13	SB-3 (0-2)	Total/NA	Solid	8270D	42656
MB 620-42656/1-A	Method Blank	Total/NA	Solid	8270D	42656
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	8270D	42656
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42656

GC VOA

Analysis Batch: 42588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	8015D	42618
620-22849-2	MW-101 (0-2)	Total/NA	Solid	8015D	42618
620-22849-3	SB-6 (2-4)	Total/NA	Solid	8015D	42618
620-22849-4	MW-108 (0-2)	Total/NA	Solid	8015D	42618
620-22849-5	SB-7 (4-5)	Total/NA	Solid	8015D	42618
620-22849-6	MW-103 (0-2)	Total/NA	Solid	8015D	42618
620-22849-7	MW-106 (0-2)	Total/NA	Solid	8015D	42618
620-22849-8	SB-8 (4-5)	Total/NA	Solid	8015D	42618
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	8015D	42618
620-22849-10	MW-105 (0-2)	Total/NA	Solid	8015D	42618
620-22849-11	SB-5 (0-2)	Total/NA	Solid	8015D	42618
620-22849-12	MW-104 (0-2)	Total/NA	Solid	8015D	42618
620-22849-13	SB-3 (0-2)	Total/NA	Solid	8015D	42618
MB 620-42618/3-A	Method Blank	Total/NA	Solid	8015D	42618
LCS 620-42618/1-A	Lab Control Sample	Total/NA	Solid	8015D	42618
LCSD 620-42618/2-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42618

Prep Batch: 42618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	5035	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	5035	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	5035	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	5035	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	5035	
620-22849-6	MW-103 (0-2)	Total/NA	Solid	5035	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	5035	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	5035	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	5035	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	5035	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	5035	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	5035	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	5035	
MB 620-42618/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42618/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42618/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 42434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	3546	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	3546	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	3546	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	3546	
620-22849-6	MW-103 (0-2)	Total/NA	Solid	3546	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	3546	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	3546	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	3546	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	3546	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	3546	
MB 620-42434/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42434/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42434/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	8082A	42434
620-22849-2	MW-101 (0-2)	Total/NA	Solid	8082A	42434
620-22849-3	SB-6 (2-4)	Total/NA	Solid	8082A	42434
620-22849-4	MW-108 (0-2)	Total/NA	Solid	8082A	42434
620-22849-6	MW-103 (0-2)	Total/NA	Solid	8082A	42434
620-22849-10	MW-105 (0-2)	Total/NA	Solid	8082A	42434
620-22849-11	SB-5 (0-2)	Total/NA	Solid	8082A	42434
620-22849-12	MW-104 (0-2)	Total/NA	Solid	8082A	42434
620-22849-13	SB-3 (0-2)	Total/NA	Solid	8082A	42434

Prep Batch: 42483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	3546	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	3546	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	3546	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	3546	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	3546	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	3546	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	3546	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	3546	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	3546	
MB 620-42483/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42483/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42483/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-7	MW-106 (0-2)	Total/NA	Solid	8082A	42434
MB 620-42434/1-A	Method Blank	Total/NA	Solid	8082A	42434
LCS 620-42434/2-A	Lab Control Sample	Total/NA	Solid	8082A	42434
LCSD 620-42434/3-A	Lab Control Sample Dup	Total/NA	Solid	8082A	42434

Analysis Batch: 42540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	8015D	42483

GC Semi VOA (Continued)

Analysis Batch: 42540 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-2	MW-101 (0-2)	Total/NA	Solid	8015D	42483
620-22849-3	SB-6 (2-4)	Total/NA	Solid	8015D	42483
620-22849-4	MW-108 (0-2)	Total/NA	Solid	8015D	42483
620-22849-5	SB-7 (4-5)	Total/NA	Solid	8015D	42483
620-22849-10	MW-105 (0-2)	Total/NA	Solid	8015D	42483
620-22849-11	SB-5 (0-2)	Total/NA	Solid	8015D	42483
620-22849-12	MW-104 (0-2)	Total/NA	Solid	8015D	42483
620-22849-13	SB-3 (0-2)	Total/NA	Solid	8015D	42483
MB 620-42483/1-A	Method Blank	Total/NA	Solid	8015D	42483
LCS 620-42483/2-A	Lab Control Sample	Total/NA	Solid	8015D	42483
LCSD 620-42483/3-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42483

Prep Batch: 42671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-6	MW-103 (0-2)	Total/NA	Solid	3546	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	3546	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	3546	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	3546	
MB 620-42671/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42671/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42671/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 42726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-6	MW-103 (0-2)	Total/NA	Solid	8015D	42671
620-22849-7	MW-106 (0-2)	Total/NA	Solid	8015D	42671
620-22849-8	SB-8 (4-5)	Total/NA	Solid	8015D	42671
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	8015D	42671
MB 620-42671/1-A	Method Blank	Total/NA	Solid	8015D	42671
LCS 620-42671/2-A	Lab Control Sample	Total/NA	Solid	8015D	42671
LCSD 620-42671/3-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42671

Metals

Prep Batch: 42524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	3050B	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	3050B	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	3050B	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	3050B	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	3050B	
MB 620-42524/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 620-42524/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 42543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	7471B	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	7471B	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	7471B	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	7471B	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	7471B	

Metals (Continued)

Prep Batch: 42543 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-6	MW-103 (0-2)	Total/NA	Solid	7471B	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	7471B	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	7471B	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	7471B	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	7471B	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	7471B	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	7471B	
MB 620-42543/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 620-42543/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	

Prep Batch: 42609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-6	MW-103 (0-2)	Total/NA	Solid	3050B	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	3050B	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	3050B	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	3050B	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	3050B	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	3050B	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	3050B	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	3050B	
MB 620-42609/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 620-42609/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 42625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 620-42524/1-A	Method Blank	Total/NA	Solid	6010D	42524
LCSSRM 620-42524/2-A ^5	Lab Control Sample	Total/NA	Solid	6010D	42524

Analysis Batch: 42649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	7471B	42543
620-22849-2	MW-101 (0-2)	Total/NA	Solid	7471B	42543
620-22849-3	SB-6 (2-4)	Total/NA	Solid	7471B	42543
620-22849-4	MW-108 (0-2)	Total/NA	Solid	7471B	42543
620-22849-5	SB-7 (4-5)	Total/NA	Solid	7471B	42543
620-22849-6	MW-103 (0-2)	Total/NA	Solid	7471B	42543
620-22849-7	MW-106 (0-2)	Total/NA	Solid	7471B	42543
620-22849-8	SB-8 (4-5)	Total/NA	Solid	7471B	42543
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	7471B	42543
620-22849-10	MW-105 (0-2)	Total/NA	Solid	7471B	42543
620-22849-11	SB-5 (0-2)	Total/NA	Solid	7471B	42543
620-22849-12	MW-104 (0-2)	Total/NA	Solid	7471B	42543
MB 620-42543/1-A	Method Blank	Total/NA	Solid	7471B	42543
LCSSRM 620-42543/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	42543

Prep Batch: 42657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-13	SB-3 (0-2)	Total/NA	Solid	7471B	
MB 620-42657/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 620-42657/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	

Metals

Analysis Batch: 42674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	6010D	42524
620-22849-2	MW-101 (0-2)	Total/NA	Solid	6010D	42524
620-22849-3	SB-6 (2-4)	Total/NA	Solid	6010D	42524
620-22849-4	MW-108 (0-2)	Total/NA	Solid	6010D	42524
620-22849-5	SB-7 (4-5)	Total/NA	Solid	6010D	42524

Analysis Batch: 42676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-6	MW-103 (0-2)	Total/NA	Solid	6010D	42609
620-22849-7	MW-106 (0-2)	Total/NA	Solid	6010D	42609
620-22849-8	SB-8 (4-5)	Total/NA	Solid	6010D	42609
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	6010D	42609
620-22849-10	MW-105 (0-2)	Total/NA	Solid	6010D	42609
620-22849-11	SB-5 (0-2)	Total/NA	Solid	6010D	42609
620-22849-12	MW-104 (0-2)	Total/NA	Solid	6010D	42609
620-22849-13	SB-3 (0-2)	Total/NA	Solid	6010D	42609
MB 620-42609/1-A	Method Blank	Total/NA	Solid	6010D	42609
LCSSRM 620-42609/2-A ^5	Lab Control Sample	Total/NA	Solid	6010D	42609

Analysis Batch: 42773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-13	SB-3 (0-2)	Total/NA	Solid	7471B	42657
MB 620-42657/1-A	Method Blank	Total/NA	Solid	7471B	42657
LCSSRM 620-42657/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	42657

General Chemistry

Analysis Batch: 42379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22849-1	SB-1 (0-2)	Total/NA	Solid	Moisture	
620-22849-2	MW-101 (0-2)	Total/NA	Solid	Moisture	
620-22849-3	SB-6 (2-4)	Total/NA	Solid	Moisture	
620-22849-4	MW-108 (0-2)	Total/NA	Solid	Moisture	
620-22849-5	SB-7 (4-5)	Total/NA	Solid	Moisture	
620-22849-6	MW-103 (0-2)	Total/NA	Solid	Moisture	
620-22849-7	MW-106 (0-2)	Total/NA	Solid	Moisture	
620-22849-8	SB-8 (4-5)	Total/NA	Solid	Moisture	
620-22849-9	SB-8 (4-5)-DUP	Total/NA	Solid	Moisture	
620-22849-10	MW-105 (0-2)	Total/NA	Solid	Moisture	
620-22849-11	SB-5 (0-2)	Total/NA	Solid	Moisture	
620-22849-12	MW-104 (0-2)	Total/NA	Solid	Moisture	
620-22849-13	SB-3 (0-2)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1
Date Collected: 12/05/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-1 (0-2)
Lab Sample ID: 620-22849-1
Date Collected: 12/05/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42541	CLR	EET RI	12/16/24 11:16
Total/NA	Analysis	8260C		1	42521	CLR	EET RI	12/16/24 13:04
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 21:49
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/17/24 23:36
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 20:00
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/13/24 23:22
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:33
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:07

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 02:24
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42595	JS	EET RI	12/17/24 22:16
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 00:11
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 20:24

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101 (0-2)
Lab Sample ID: 620-22849-2
Date Collected: 12/05/24 10:00
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/13/24 23:40
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:39
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:09

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3
Date Collected: 12/05/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-6 (2-4)
Lab Sample ID: 620-22849-3
Date Collected: 12/05/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42474	CAC	EET RI	12/13/24 11:09
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 19:23
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 00:45
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 20:47
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/13/24 23:58
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:45
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:16

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-108 (0-2)
Lab Sample ID: 620-22849-4
Date Collected: 12/05/24 12:25
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 02:50
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		4	42700	JS	EET RI	12/20/24 00:04
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 01:20
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 21:10
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 00:16
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 15:51
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:18

Client Sample ID: SB-7 (4-5)
Lab Sample ID: 620-22849-5
Date Collected: 12/05/24 13:45
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-7 (4-5)
Lab Sample ID: 620-22849-5
Date Collected: 12/05/24 13:45
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 19:48
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 01:54
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 21:34
Total/NA	Prep	3050B			42524	JPC	EET RI	12/16/24 08:50
Total/NA	Analysis	6010D		2	42674	JPC	EET RI	12/17/24 16:09
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:20

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6
Date Collected: 12/06/24 07:35
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-103 (0-2)
Lab Sample ID: 620-22849-6

Date Collected: 12/06/24 07:35
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 86.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 03:17
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 21:31
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 02:29
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 18:53
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 00:33
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		4	42676	JPC	EET RI	12/18/24 15:06
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:22

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7

Date Collected: 12/06/24 08:10
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-106 (0-2)
Lab Sample ID: 620-22849-7

Date Collected: 12/06/24 08:10
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 03:42
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		5	42700	JS	EET RI	12/20/24 00:55
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 03:04
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 19:17
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42512	BMH	EET RI	12/16/24 21:43
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 15:00
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:25

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8
Date Collected: 12/06/24 09:05
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-8 (4-5)
Lab Sample ID: 620-22849-8
Date Collected: 12/06/24 09:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 20:14
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 03:38
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 19:40
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:54
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:27

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9
Date Collected: 12/06/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-8 (4-5)-DUP
Lab Sample ID: 620-22849-9
Date Collected: 12/06/24 09:15
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 23:39
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 04:12
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 20:04
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:48
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:29

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10
Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-105 (0-2)
Lab Sample ID: 620-22849-10
Date Collected: 12/06/24 09:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42500	CLR	EET RI	12/13/24 15:48
Total/NA	Analysis	8260C		1	42502	CLR	EET RI	12/14/24 04:07
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		4	42700	JS	EET RI	12/20/24 00:30
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 04:47
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 21:57
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 01:09
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:42
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:31

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11
Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11
Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42541	CLR	EET RI	12/16/24 11:16
Total/NA	Analysis	8260C		1	42521	CLR	EET RI	12/16/24 13:30
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 20:40
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 05:21
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 22:21

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-5 (0-2)
Lab Sample ID: 620-22849-11
Date Collected: 12/06/24 11:05
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 01:27
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:36
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:33

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12
Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Client Sample ID: MW-104 (0-2)
Lab Sample ID: 620-22849-12
Date Collected: 12/06/24 11:50
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42541	CLR	EET RI	12/16/24 11:16
Total/NA	Analysis	8260C		1	42521	CLR	EET RI	12/16/24 13:57
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 21:56
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 05:56
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 22:44
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 01:45
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:30
Total/NA	Prep	7471B			42543	PRB	EET RI	12/16/24 11:21
Total/NA	Analysis	7471B		1	42649	PRB	EET RI	12/16/24 17:35

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13
Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42379	JPC	EET RI	12/11/24 13:12

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: SB-3 (0-2)
Lab Sample ID: 620-22849-13

Date Collected: 12/06/24 12:40
Matrix: Solid
Date Received: 12/11/24 18:46
Percent Solids: 85.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42541	CLR	EET RI	12/16/24 11:16
Total/NA	Analysis	8260C		1	42521	CLR	EET RI	12/16/24 14:22
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 21:05
Total/NA	Prep	5035			42618	RWS	EET RI	12/17/24 14:08
Total/NA	Analysis	8015D		1	42588	CLR	EET RI	12/18/24 06:31
Total/NA	Prep	3546			42483	CAC	EET RI	12/13/24 13:01
Total/NA	Analysis	8015D		1	42540	BJJ	EET RI	12/16/24 23:08
Total/NA	Prep	3546			42434	RWS	EET RI	12/12/24 15:24
Total/NA	Analysis	8082A		1	42460	BMH	EET RI	12/14/24 02:03
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		2	42676	JPC	EET RI	12/18/24 14:24
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:05

Client Sample ID: Trip Blank
Lab Sample ID: 620-22849-14

Date Collected: 12/06/24 00:00
Matrix: Solid
Date Received: 12/11/24 18:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42396	KFS	EET RI	12/06/24 15:10
Total/NA	Prep	5035			42541	CLR	EET RI	12/16/24 11:16
Total/NA	Analysis	8260C		1	42521	CLR	EET RI	12/16/24 12:38

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Laboratory: Eurofins Rhode Island

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	7165.01	01-31-26
Connecticut	State	PH-0722	06-30-26
Maine	State	RI00100	05-09-25
Massachusetts	State	M-RI907	06-30-25
New Hampshire	NELAP	2245	09-17-25
New Jersey	NELAP	RI008	06-30-25
New York	NELAP	11393	04-01-25
Rhode Island	State	LAI00368	12-31-25

Method Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET RI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET RI
8015D	Gasoline Range Organics (GRO) (GC)	SW846	EET RI
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET RI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET RI
6010D	Metals (ICP)	SW846	EET RI
7471B	Mercury (CVAA)	SW846	EET RI
Moisture	Percent Moisture	EPA	EET RI
3050B	Preparation, Metals	SW846	EET RI
3546	Microwave Extraction	SW846	EET RI
5035	Closed System Purge and Trap	SW846	EET RI
7471B	Preparation, Mercury	SW846	EET RI
Frozen Preserve	Freezing Samples	None	EET RI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Sample Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22849-1
Project/Site: GES - RIDEM MPA-48

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
620-22849-1	SB-1 (0-2)	Solid	12/05/24 09:15	12/11/24 18:46
620-22849-2	MW-101 (0-2)	Solid	12/05/24 10:00	12/11/24 18:46
620-22849-3	SB-6 (2-4)	Solid	12/05/24 11:05	12/11/24 18:46
620-22849-4	MW-108 (0-2)	Solid	12/05/24 12:25	12/11/24 18:46
620-22849-5	SB-7 (4-5)	Solid	12/05/24 13:45	12/11/24 18:46
620-22849-6	MW-103 (0-2)	Solid	12/06/24 07:35	12/11/24 18:46
620-22849-7	MW-106 (0-2)	Solid	12/06/24 08:10	12/11/24 18:46
620-22849-8	SB-8 (4-5)	Solid	12/06/24 09:05	12/11/24 18:46
620-22849-9	SB-8 (4-5)-DUP	Solid	12/06/24 09:15	12/11/24 18:46
620-22849-10	MW-105 (0-2)	Solid	12/06/24 09:40	12/11/24 18:46
620-22849-11	SB-5 (0-2)	Solid	12/06/24 11:05	12/11/24 18:46
620-22849-12	MW-104 (0-2)	Solid	12/06/24 11:50	12/11/24 18:46
620-22849-13	SB-3 (0-2)	Solid	12/06/24 12:40	12/11/24 18:46
620-22849-14	Trip Blank	Solid	12/06/24 00:00	12/11/24 18:46

CHAIN OF CUSTODY

22849

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** H. Joel Walcott — **Phone #:** 800-220-6119 JWalcott@gesonline com — fax GESInbox@gesonline.com — **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047436	Groundwater & Environmental Services, Inc. ap@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

Sampler(s) Name: Matthew Juaino

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Sample Type (Grab or Comp)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOCs 8260	TPH DRO/GRO	PAHs 8270	PCBs	Total PP13 Metals				LAB USE ONLY
-1	SB-1 (0-2)	Grab	12/5/24	0915	MJ	SO	8					4	2	2			X	X	X	X	X				
-2	MW-101 (0-2)	Grab	12/5/24	1000	MJ	SO	8					4	2	2			X	X	X	X	X				
-3	SB-6 (2-4)	Grab	12/5/24	1105	MJ	SO	4					3		1				X	X	X	X				
-4	MW-108 (0-2)	Grab	12/5/24	1225	MJ	SO	8					4	2	2			X	X	X	X	X				
-5	SB-7 (4-5)	Grab	12/5/24	1345	MJ	SO	3					2		1				X	X		X				
-6	MW-103 (0-2)	Grab	12/6/24	0735	MJ	SO	8					4	2	2			X	X	X	X	X				
-7	MW-106 (0-2)	Grab	12/6/24	0810	MJ	SO	8					4	2	2			X	X	X	X	X				
-8	SB-8 (4-5)	Grab	12/6/24	0905	MJ	SO	3					2		1				X	X		X				
-9	SB-8 (4-5) -DUP	Grab	12/6/24	0915	MJ	SO	3					2		1				X	X		X				
-10	MW-105 (0-2)	Grab	12/6/24	0940	MJ	SO	8					4	2	2			X	X	X	X	X				
-11	SB-5 (0-2)	Grab	12/6/24	1105	MJ	SO	8					4	2	2			X	X	X	X	X				
-12	MW-104 (0-2)	Grab	12/6/24	1150	MJ	SO	8					4	2	2			X	X	X	X	X				

Turnaround Time (Business Days)

- (●) Standard 14 days
- ( ) 1 day RUSH
- ( ) Other _____ days

Lab PM Approval / Date

_____ / _____ / _____

Laboratory Information

Lab. _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Email: _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B'' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler	Date / Time	Received By
1	Matthew Juaino	12/6/24 1510	GES Freezer
2	[signature]	12/11/24 1206	[signature]
3	[signature]	12/11/24 1846	[signature]

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** _____

3.0 +0.2 3.2/3.0 +0.2 3.2 #6

620-22849 Chain of Custody

22849

PAGE 2 OF 2

CHAIN OF CUSTODY

Client: Rhode Island Dept of Environment

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** H. Joel Walcott **Phone #:** 800-220-6119 JWalcott@gesonline com fax GESInbox@gesonline.com **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047436	Groundwater & Environmental Services, Inc. ges-invoices@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

Sampler(s) Name	Sampler(s) Name

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Sample Type (Grab or Comp)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): VOCs 8260	TPH DRO/GRO	PAHs 8270	PCBs	Total PP 13 Metals	LAB USE ONLY
-13	SB-3 (0-2)	Grab	12/6/24	1240	mf	SO	8					4	2	2			X	X	X	X	X	
-14	Trip Blank	Grab	12/6/24		mf	TB	3					~~2~~ 0	2	1			X					

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Turnaround Time (Business Days)

- ◉ Standard 14 days
- ○ 1 day RUSH
- ○ Other _____ days

Lab PM Approval / Date

_____ /
_____ /
_____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Email: _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B" (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler	Date / Time	Received By
1	Matthew Jusino	12/6/24 1510	GES Freezer
2		12/11/24 1204	
3		12/11/24 18:46	

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** _____

3.0 +0.2 3.2/3.0 +0.2 3.2

12/27/2024

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 620-22849-1

Login Number: 22849
List Number: 1
Creator: Makhoul, Elie

List Source: Eurofins Rhode Island

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Ed Kontos
Groundwater & Environmental Services Inc
234 Littleton Road
Suite 1F
Westford, Massachusetts 01886

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JOB DESCRIPTION

GES - RIDEM MPA-48
198 Potter Hill Road, Westerly, RI

JOB NUMBER

620-22964-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

See page two for job notes and contact information.

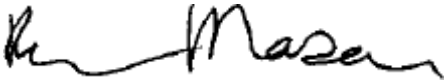
Eurofins Rhode Island

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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Authorized for release by
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(401)267-4374

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
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.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
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.

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

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
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)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Job ID: 620-22964-1 Eurofins Rhode Island

Job Narrative
620-22964-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be 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.

Receipt
The samples were received on 12/16/2024 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

GC/MS VOA
Method 8260C: Internal standard (ISTD) response for the following sample was outside control limits: MW-104 (7-9) (620-22964-5). The sample was re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260C: Internal standard (ISTD) response for the following sample was outside of acceptance limits: SB-3 (7-9) (620-22964-6). The sample was re-analyzed but experienced a poor purge that yielded no usable data.

Method 8260C: Internal standard (ISTD) response for the following sample was outside control limits: MW-104 (7-9) (620-22964-5). The sample was re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 620-42571 and 620-42770 and analytical batch 620-42803 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8260C: Surrogate 1,2-Dichloroethane-d4 (Surr) recovery for the following sample was outside the upper control limit: SB-3 (7-9) (620-22964-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: Surrogate 1,2-Dichloroethane-d4 (Surr) recovery for the following sample was outside the upper control limit: MW-104 (7-9) (620-22964-5). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 620-42571 and 620-42770 and analytical batch 620-42803 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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: Due to the dark and oily extract, the following samples could not be concentrated to the final method required volume: SB-3 (7-9) (620-22964-6). The reporting limits (RLs) are elevated proportionately.

Method 8270D: The large number of analytes included in the continuing calibration verification (CCV) gives a high probability that one or more analytes will be outside acceptance criteria. As indicated in the reference method, analysis may proceed as long as no more than 10% of the analytes of interest are outside the method-defined %D criteria. Hexachlorocyclopentadiene, N-Nitrosodi-n-propylamine and Bis(2-chloroethyl)ether.

Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 620-42656 and analytical batch 620-42700 recovered outside control limits for the following analyte: Benzidine. Benzidine has

been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Any detection for this analyte is considered an estimate. The analyte recovered within acceptance limits in the CCV. Batch precision also exceeded control limits for these analyte. These results have been reported and qualified.

Method 8270D: The initial calibration verification (ICV) result for batch 620-42760 was outside control limits. The affected analyte is: Benzidine. The laboratory SOP allows <20%D with 20% allowed at 65-135% and problematics at 50-150%.

Method 8270D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 620-42656 and 620-42706 and analytical batch 620-42760 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8270D: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 620-42656 and analytical batch 620-42855 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8270D: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Benzidine and Benzoic acid. These analytes may have a %D >50%.

Method 8270D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 620-42656 and analytical batch 620-42943 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Gasoline Range Organics
Method 8015D_GRO: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 620-42660 and analytical batch 620-42659 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

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

PCBs
Method 8082A: The continuing calibration verification (CCV) associated with 620-42640 recovered outside the control limits for Tetrachloro-m-xylene on the primary column. Results are confirmed on both columns and reported from the passing confirmation column. The associated samples are: (CCV 620-42640/25), (CCV 620-42640/39), (CCV 620-42640/53) and (CCVIS 620-42640/2).

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: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-103 (11-13) — Lab Sample ID: 620-22964-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	11.2		1.05		mg/Kg	1	☼	6010D	Total/NA
Copper	15.9		1.05		mg/Kg	1	☼	6010D	Total/NA
Lead	2.93		1.57		mg/Kg	1	☼	6010D	Total/NA
Nickel	8.14		1.05		mg/Kg	1	☼	6010D	Total/NA
Zinc	27.6		3.15		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-103 (11-13) DUP — Lab Sample ID: 620-22964-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	7.43		0.985		mg/Kg	1	☼	6010D	Total/NA
Copper	12.5		0.985		mg/Kg	1	☼	6010D	Total/NA
Lead	2.18		1.48		mg/Kg	1	☼	6010D	Total/NA
Nickel	4.23		0.985		mg/Kg	1	☼	6010D	Total/NA
Zinc	13.9		2.95		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-105 (9-11) — Lab Sample ID: 620-22964-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	3.97		1.15		mg/Kg	1	☼	6010D	Total/NA
Copper	7.08		1.15		mg/Kg	1	☼	6010D	Total/NA
Lead	1.83		1.73		mg/Kg	1	☼	6010D	Total/NA
Nickel	1.24		1.15		mg/Kg	1	☼	6010D	Total/NA
Zinc	17.0		3.46		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-106 (9-11) — Lab Sample ID: 620-22964-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	12.1		1.13		mg/Kg	1	☼	6010D	Total/NA
Copper	14.9		1.13		mg/Kg	1	☼	6010D	Total/NA
Lead	2.14		1.70		mg/Kg	1	☼	6010D	Total/NA
Nickel	7.19		1.13		mg/Kg	1	☼	6010D	Total/NA
Zinc	23.7		3.40		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: MW-104 (7-9) — Lab Sample ID: 620-22964-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
C10-C28	58.7		19.7		mg/Kg	1	☼	8015D	Total/NA
Chromium	3.52		3.22		mg/Kg	2	☼	6010D	Total/NA
Zinc	23.9		9.66		mg/Kg	2	☼	6010D	Total/NA

Client Sample ID: SB-3 (7-9) — Lab Sample ID: 620-22964-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Copper	3.07		1.07		mg/Kg	1	☼	6010D	Total/NA
Zinc	11.7		3.20		mg/Kg	1	☼	6010D	Total/NA

Client Sample ID: SB-4 (13-15) — Lab Sample ID: 620-22964-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	3.55		2.34		mg/Kg	2	☼	6010D	Total/NA
Nickel	3.63		2.34		mg/Kg	2	☼	6010D	Total/NA
Zinc	19.0		7.01		mg/Kg	2	☼	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-2 (9-11)
Lab Sample ID: 620-22964-8

No Detections.

Client Sample ID: Trip Blank
Lab Sample ID: 620-22964-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-103 (11-13)
Date Collected: 12/11/24 08:45
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-1
Matrix: Solid
Percent Solids: 80.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Acetone	ND		41.3		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Acrylonitrile	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Benzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Bromobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Bromochloromethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Bromodichloromethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Bromoform	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Bromomethane	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
2-Butanone (MEK)	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
n-Butylbenzene	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
sec-Butylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
tert-Butylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Carbon disulfide	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Carbon tetrachloride	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Chlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Chloroethane	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Chloroform	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Chloromethane	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
2-Chlorotoluene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
4-Chlorotoluene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2-Dibromo-3-Chloropropane	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Dibromochloromethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2-Dibromoethane (EDB)	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Dibromomethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2-Dichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,3-Dichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,4-Dichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Dichlorodifluoromethane (Freon 12)	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1-Dichloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2-Dichloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1-Dichloroethene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
cis-1,2-Dichloroethene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
trans-1,2-Dichloroethene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2-Dichloropropane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,3-Dichloropropane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
2,2-Dichloropropane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1-Dichloropropene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
cis-1,3-Dichloropropene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
trans-1,3-Dichloropropene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Ethylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Hexachlorobutadiene	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
2-Hexanone (MBK)	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Isopropylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
4-Isopropyltoluene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Methyl tert-butyl ether	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
4-Methyl-2-pentanone (MIBK)	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Methylene Chloride	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Naphthalene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1

Client Sample ID: MW-103 (11-13)
Lab Sample ID: 620-22964-1
Date Collected: 12/11/24 08:45
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.3

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Styrene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1,1,2-Tetrachloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1,2,2-Tetrachloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Tetrachloroethene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Toluene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2,3-Trichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2,4-Trichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,3,5-Trichlorobenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1,1-Trichloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,1,2-Trichloroethane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Trichloroethene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Trichlorofluoromethane (Freon 11)	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2,3-Trichloropropane	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,2,4-Trimethylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,3,5-Trimethylbenzene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Vinyl chloride	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
m,p-Xylene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
o-Xylene	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Tetrahydrofuran	ND		8.26		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Ethyl ether	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Tert-amyl methyl ether	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Ethyl tert-butyl ether	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
di-Isopropyl ether	ND		4.13		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
tert-Butanol	ND		82.6		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
1,4-Dioxane	ND		82.6		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
trans-1,4-Dichloro-2-butene	ND		20.7		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1
Ethanol	ND		826		ug/Kg	☼	12/20/24 11:05	12/20/24 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*12/20/24 11:05*	*12/20/24 14:14*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*12/20/24 11:05*	*12/20/24 14:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 14:14*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 14:14*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
1,2,4-Trichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
1,2-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
1,3-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
1,4-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
1-Methylnaphthalene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4,5-Trichlorophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4,6-Trichlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4-Dichlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4-Dimethylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4-Dinitrophenol	ND		804		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,4-Dinitrotoluene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2,6-Dinitrotoluene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-103 (11-13)
Lab Sample ID: 620-22964-1
Date Collected: 12/11/24 08:45
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2-Chlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2-Methylnaphthalene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2-Methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2-Nitroaniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
2-Nitrophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
3 & 4 Methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
3,3'-Dichlorobenzidine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
3-Nitroaniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4,6-Dinitro-2-methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Bromophenyl phenyl ether	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Chloro-3-methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Chloroaniline	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Chlorophenyl phenyl ether	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Nitroaniline	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
4-Nitrophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Acenaphthene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Acenaphthylene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Aniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Anthracene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Azobenzene/Diphenyldiazene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzidine	ND		804		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzo[a]anthracene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzo[a]pyrene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzo[b]fluoranthene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzo[g,h,i]perylene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzo[k]fluoranthene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzoic acid	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Benzyl alcohol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Bis(2-chloroethoxy)methane	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Bis(2-chloroethyl)ether	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
bis (2-chloroisopropyl) ether	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Bis(2-ethylhexyl) phthalate	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Butyl benzyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Carbazole	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Chrysene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Dibenz(a,h)anthracene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Dibenzofuran	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Diethyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Dimethyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Di-n-butyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Di-n-octyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Fluoranthene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Fluorene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Hexachlorobenzene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Hexachlorobutadiene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Hexachlorocyclopentadiene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Hexachloroethane	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Indeno[1,2,3-cd]pyrene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1

Client Sample ID: MW-103 (11-13)
Date Collected: 12/11/24 08:45
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-1
Matrix: Solid
Percent Solids: 80.3

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Naphthalene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Nitrobenzene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
N-Nitrosodimethylamine	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
N-Nitrosodi-n-propylamine	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
N-Nitrosodiphenylamine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Pentachloronitrobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Pentachlorophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Phenanthrene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Phenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Pyrene	ND		81.3		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1
Pyridine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:20*	*1*
2-Fluorophenol (Surr)	*89*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:20*	*1*
Nitrobenzene-d5 (Surr)	*62*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:20*	*1*
Phenol-d5 (Surr)	*76*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:20*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:20*	*1*
Terphenyl-d14 (Surr)	*58*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:20*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.10		mg/Kg	☼	12/18/24 11:15	12/18/24 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*75*		*70 - 130*	*12/18/24 11:15*	*12/18/24 15:43*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		16.4		mg/Kg	☼	12/18/24 14:23	12/19/24 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*40 - 140*	*12/18/24 14:23*	*12/19/24 15:45*	*1*
1-Chlorooctadecane	*90*		*40 - 140*	*12/18/24 14:23*	*12/19/24 15:45*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1221	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1232	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1242	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1248	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1254	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1260	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1262	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1
PCB-1268	ND		24.7		ug/Kg	☼	12/17/24 16:29	12/18/24 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 150*	*12/17/24 16:29*	*12/18/24 21:13*	*1*
Tetrachloro-m-xylene	*74*		*30 - 150*	*12/17/24 16:29*	*12/18/24 21:13*	*1*

Client Sample ID: MW-103 (11-13)
Date Collected: 12/11/24 08:45
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-1
Matrix: Solid
Percent Solids: 80.3

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*80*		*30 - 150*	*12/17/24 16:29*	*12/18/24 21:13*	*1*
DCB Decachlorobiphenyl (Surr)	*71*		*30 - 150*	*12/17/24 16:29*	*12/18/24 21:13*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		5.25		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Arsenic	ND		1.57		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Beryllium	ND		0.525		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Cadmium	ND		0.525		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Chromium	**11.2**		1.05		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Copper	**15.9**		1.05		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Lead	**2.93**		1.57		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Nickel	**8.14**		1.05		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Selenium	ND		1.57		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Silver	ND		1.57		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Thallium	ND		3.15		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1
Zinc	**27.6**		3.15		mg/Kg	☼	12/17/24 11:58	12/18/24 14:00	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0451		mg/Kg	☼	12/18/24 10:08	12/18/24 16:12	1

Client Sample ID: MW-103 (11-13) DUP
Date Collected: 12/11/24 08:55
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-2
Matrix: Solid
Percent Solids: 84.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Acetone	ND		37.0		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Acrylonitrile	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Benzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Bromobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Bromochloromethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Bromodichloromethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Bromoform	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Bromomethane	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
2-Butanone (MEK)	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
n-Butylbenzene	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
sec-Butylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
tert-Butylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Carbon disulfide	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Carbon tetrachloride	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Chlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Chloroethane	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Chloroform	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Chloromethane	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
2-Chlorotoluene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
4-Chlorotoluene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2-Dibromo-3-Chloropropane	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Dibromochloromethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2-Dibromoethane (EDB)	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Dibromomethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2-Dichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,3-Dichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,4-Dichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Dichlorodifluoromethane (Freon 12)	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1-Dichloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2-Dichloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1-Dichloroethene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
cis-1,2-Dichloroethene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
trans-1,2-Dichloroethene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2-Dichloropropane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,3-Dichloropropane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
2,2-Dichloropropane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1-Dichloropropene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
cis-1,3-Dichloropropene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
trans-1,3-Dichloropropene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Ethylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Hexachlorobutadiene	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
2-Hexanone (MBK)	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Isopropylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
4-Isopropyltoluene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Methyl tert-butyl ether	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
4-Methyl-2-pentanone (MIBK)	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Methylene Chloride	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Naphthalene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1

Client Sample ID: MW-103 (11-13) DUP

Date Collected: 12/11/24 08:55
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-2

Matrix: Solid
Percent Solids: 84.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Styrene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1,1,2-Tetrachloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1,2,2-Tetrachloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Tetrachloroethene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Toluene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2,3-Trichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2,4-Trichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,3,5-Trichlorobenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1,1-Trichloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,1,2-Trichloroethane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Trichloroethene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Trichlorofluoromethane (Freon 11)	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2,3-Trichloropropane	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,2,4-Trimethylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,3,5-Trimethylbenzene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Vinyl chloride	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
m,p-Xylene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
o-Xylene	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Tetrahydrofuran	ND		7.41		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Ethyl ether	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Tert-amyl methyl ether	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Ethyl tert-butyl ether	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
di-Isopropyl ether	ND		3.70		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
tert-Butanol	ND		74.1		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
1,4-Dioxane	ND		74.1		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
trans-1,4-Dichloro-2-butene	ND		18.5		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1
Ethanol	ND		741		ug/Kg	☼	12/23/24 10:40	12/23/24 12:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*12/23/24 10:40*	*12/23/24 12:18*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*12/23/24 10:40*	*12/23/24 12:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*	*12/23/24 10:40*	*12/23/24 12:18*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*	*12/23/24 10:40*	*12/23/24 12:18*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
1,2,4-Trichlorobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
1,2-Dichlorobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
1,3-Dichlorobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
1,4-Dichlorobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
1-Methylnaphthalene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4,5-Trichlorophenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4,6-Trichlorophenol	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4-Dichlorophenol	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4-Dimethylphenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4-Dinitrophenol	ND		771		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,4-Dinitrotoluene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2,6-Dinitrotoluene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-103 (11-13) DUP
Lab Sample ID: 620-22964-2
Date Collected: 12/11/24 08:55
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 84.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2-Chlorophenol	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2-Methylnaphthalene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2-Methylphenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2-Nitroaniline	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
2-Nitrophenol	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
3 & 4 Methylphenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
3,3'-Dichlorobenzidine	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
3-Nitroaniline	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4,6-Dinitro-2-methylphenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Bromophenyl phenyl ether	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Chloro-3-methylphenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Chloroaniline	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Chlorophenyl phenyl ether	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Nitroaniline	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
4-Nitrophenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Acenaphthene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Acenaphthylene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Aniline	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Anthracene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Azobenzene/Diphenyldiazene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzidine	ND		771		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzo[a]anthracene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzo[a]pyrene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzo[b]fluoranthene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzo[g,h,i]perylene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzo[k]fluoranthene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzoic acid	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Benzyl alcohol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Bis(2-chloroethoxy)methane	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Bis(2-chloroethyl)ether	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
bis (2-chloroisopropyl) ether	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Bis(2-ethylhexyl) phthalate	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Butyl benzyl phthalate	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Carbazole	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Chrysene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Dibenz(a,h)anthracene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Dibenzofuran	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Diethyl phthalate	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Dimethyl phthalate	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Di-n-butyl phthalate	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Di-n-octyl phthalate	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Fluoranthene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Fluorene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Hexachlorobenzene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Hexachlorobutadiene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Hexachlorocyclopentadiene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Hexachloroethane	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Indeno[1,2,3-cd]pyrene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1

Client Sample ID: MW-103 (11-13) DUP

Date Collected: 12/11/24 08:55
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-2

Matrix: Solid
Percent Solids: 84.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Naphthalene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Nitrobenzene	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
N-Nitrosodimethylamine	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
N-Nitrosodi-n-propylamine	ND		195		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
N-Nitrosodiphenylamine	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Pentachloronitrobenzene	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Pentachlorophenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Phenanthrene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Phenol	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Pyrene	ND		77.9		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1
Pyridine	ND		385		ug/Kg	☼	12/19/24 10:22	12/20/24 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:46*	*1*
2-Fluorophenol (Surr)	*91*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:46*	*1*
Nitrobenzene-d5 (Surr)	*64*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:46*	*1*
Phenol-d5 (Surr)	*77*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:46*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*15 - 110*	*12/19/24 10:22*	*12/20/24 19:46*	*1*
Terphenyl-d14 (Surr)	*68*		*30 - 130*	*12/19/24 10:22*	*12/20/24 19:46*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.42		mg/Kg	☼	12/18/24 11:15	12/18/24 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*87*		*70 - 130*	*12/18/24 11:15*	*12/18/24 16:18*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		15.7		mg/Kg	☼	12/18/24 14:23	12/19/24 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*64*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:08*	*1*
1-Chlorooctadecane	*92*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:08*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1221	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1232	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1242	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1248	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1254	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1260	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1262	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1
PCB-1268	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:28*	*1*
Tetrachloro-m-xylene	*73*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:28*	*1*

Client Sample ID: MW-103 (11-13) DUP
Lab Sample ID: 620-22964-2

Date Collected: 12/11/24 08:55
Matrix: Solid

Date Received: 12/16/24 17:00
Percent Solids: 84.2

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*104*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:28*	*1*
DCB Decachlorobiphenyl (Surr)	*94*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:28*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		4.92		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Arsenic	ND		1.48		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Beryllium	ND		0.492		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Cadmium	ND		0.492		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Chromium	**7.43**		0.985		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Copper	**12.5**		0.985		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Lead	**2.18**		1.48		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Nickel	**4.23**		0.985		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Selenium	ND		1.48		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Silver	ND		1.48		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Thallium	ND		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1
Zinc	**13.9**		2.95		mg/Kg	☼	12/17/24 11:58	12/18/24 13:54	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0489		mg/Kg	☼	12/18/24 10:08	12/18/24 16:14	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-105 (9-11)
Date Collected: 12/11/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-3
Matrix: Solid
Percent Solids: 80.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Acetone	ND		46.0		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Acrylonitrile	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Benzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Bromobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Bromochloromethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Bromodichloromethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Bromoform	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Bromomethane	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
2-Butanone (MEK)	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
n-Butylbenzene	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
sec-Butylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
tert-Butylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Carbon disulfide	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Carbon tetrachloride	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Chlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Chloroethane	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Chloroform	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Chloromethane	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
2-Chlorotoluene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
4-Chlorotoluene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2-Dibromo-3-Chloropropane	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Dibromochloromethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2-Dibromoethane (EDB)	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Dibromomethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2-Dichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,3-Dichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,4-Dichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Dichlorodifluoromethane (Freon 12)	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1-Dichloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2-Dichloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1-Dichloroethene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
cis-1,2-Dichloroethene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
trans-1,2-Dichloroethene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2-Dichloropropane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,3-Dichloropropane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
2,2-Dichloropropane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1-Dichloropropene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
cis-1,3-Dichloropropene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
trans-1,3-Dichloropropene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Ethylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Hexachlorobutadiene	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
2-Hexanone (MBK)	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Isopropylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
4-Isopropyltoluene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Methyl tert-butyl ether	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
4-Methyl-2-pentanone (MIBK)	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Methylene Chloride	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Naphthalene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1

Client Sample ID: MW-105 (9-11)
Lab Sample ID: 620-22964-3
Date Collected: 12/11/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.5

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Styrene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1,1,2-Tetrachloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1,2,2-Tetrachloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Tetrachloroethene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Toluene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2,3-Trichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2,4-Trichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,3,5-Trichlorobenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1,1-Trichloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,1,2-Trichloroethane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Trichloroethene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Trichlorofluoromethane (Freon 11)	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2,3-Trichloropropane	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,2,4-Trimethylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,3,5-Trimethylbenzene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Vinyl chloride	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
m,p-Xylene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
o-Xylene	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Tetrahydrofuran	ND		9.20		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Ethyl ether	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Tert-amyl methyl ether	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Ethyl tert-butyl ether	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
di-Isopropyl ether	ND		4.60		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
tert-Butanol	ND		92.0		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
1,4-Dioxane	ND		92.0		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
trans-1,4-Dichloro-2-butene	ND		23.0		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1
Ethanol	ND		920		ug/Kg	☼	12/20/24 11:05	12/20/24 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:04*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:04*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:04*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
1,2,4-Trichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
1,2-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
1,3-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
1,4-Dichlorobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
1-Methylnaphthalene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4,5-Trichlorophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4,6-Trichlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4-Dichlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4-Dimethylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4-Dinitrophenol	ND		804		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,4-Dinitrotoluene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2,6-Dinitrotoluene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-105 (9-11)
Date Collected: 12/11/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-3
Matrix: Solid
Percent Solids: 80.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2-Chlorophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2-Methylnaphthalene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2-Methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2-Nitroaniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
2-Nitrophenol	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
3 & 4 Methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
3,3'-Dichlorobenzidine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
3-Nitroaniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4,6-Dinitro-2-methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Bromophenyl phenyl ether	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Chloro-3-methylphenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Chloroaniline	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Chlorophenyl phenyl ether	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Nitroaniline	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
4-Nitrophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Acenaphthene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Acenaphthylene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Aniline	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Anthracene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Azobenzene/Diphenyldiazene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzidine	ND		804		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzo[a]anthracene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzo[a]pyrene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzo[b]fluoranthene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzo[g,h,i]perylene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzo[k]fluoranthene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzoic acid	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Benzyl alcohol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Bis(2-chloroethoxy)methane	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Bis(2-chloroethyl)ether	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
bis (2-chloroisopropyl) ether	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Bis(2-ethylhexyl) phthalate	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Butyl benzyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Carbazole	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Chrysene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Dibenz(a,h)anthracene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Dibenzofuran	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Diethyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Dimethyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Di-n-butyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Di-n-octyl phthalate	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Fluoranthene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Fluorene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Hexachlorobenzene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Hexachlorobutadiene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Hexachlorocyclopentadiene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Hexachloroethane	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Indeno[1,2,3-cd]pyrene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1

Client Sample ID: MW-105 (9-11)
Date Collected: 12/11/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-3
Matrix: Solid
Percent Solids: 80.5

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Naphthalene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Nitrobenzene	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
N-Nitrosodimethylamine	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
N-Nitrosodi-n-propylamine	ND		203		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
N-Nitrosodiphenylamine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Pentachloronitrobenzene	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Pentachlorophenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Phenanthrene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Phenol	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Pyrene	ND		81.2		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1
Pyridine	ND		402		ug/Kg	☼	12/19/24 10:22	12/20/24 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*58*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:11*	*1*
2-Fluorophenol (Surr)	*76*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:11*	*1*
Nitrobenzene-d5 (Surr)	*58*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:11*	*1*
Phenol-d5 (Surr)	*65*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:11*	*1*
2,4,6-Tribromophenol (Surr)	*59*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:11*	*1*
Terphenyl-d14 (Surr)	*56*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:11*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.12		mg/Kg	☼	12/18/24 11:15	12/18/24 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*74*		*70 - 130*	*12/18/24 11:15*	*12/18/24 16:53*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		15.2		mg/Kg	☼	12/18/24 14:23	12/19/24 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*68*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:32*	*1*
1-Chlorooctadecane	*92*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:32*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1221	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1232	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1242	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1248	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1254	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1260	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1262	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1
PCB-1268	ND		24.0		ug/Kg	☼	12/17/24 16:29	12/18/24 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*75*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:46*	*1*
Tetrachloro-m-xylene	*77*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:46*	*1*

Client Sample ID: MW-105 (9-11)
Lab Sample ID: 620-22964-3

Date Collected: 12/11/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.5

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*103*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:46*	*1*
DCB Decachlorobiphenyl (Surr)	*95*		*30 - 150*	*12/17/24 16:29*	*12/18/24 22:46*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		5.76		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Arsenic	ND		1.73		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Beryllium	ND		0.576		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Cadmium	ND		0.576		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Chromium	**3.97**		1.15		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Copper	**7.08**		1.15		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Lead	**1.83**		1.73		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Nickel	**1.24**		1.15		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Selenium	ND		1.73		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Silver	ND		1.73		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Thallium	ND		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1
Zinc	**17.0**		3.46		mg/Kg	☼	12/17/24 11:58	12/18/24 13:48	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0426		mg/Kg	☼	12/18/24 10:08	12/18/24 16:16	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-106 (9-11)
Date Collected: 12/11/24 11:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-4
Matrix: Solid
Percent Solids: 76.4

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Acetone	ND		44.3		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Acrylonitrile	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Benzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Bromobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Bromochloromethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Bromodichloromethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Bromoform	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Bromomethane	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
2-Butanone (MEK)	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
n-Butylbenzene	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
sec-Butylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
tert-Butylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Carbon disulfide	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Carbon tetrachloride	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Chlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Chloroethane	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Chloroform	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Chloromethane	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
2-Chlorotoluene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
4-Chlorotoluene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2-Dibromo-3-Chloropropane	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Dibromochloromethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2-Dibromoethane (EDB)	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Dibromomethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2-Dichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,3-Dichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,4-Dichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Dichlorodifluoromethane (Freon 12)	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1-Dichloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2-Dichloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1-Dichloroethene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
cis-1,2-Dichloroethene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
trans-1,2-Dichloroethene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2-Dichloropropane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,3-Dichloropropane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
2,2-Dichloropropane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1-Dichloropropene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
cis-1,3-Dichloropropene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
trans-1,3-Dichloropropene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Ethylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Hexachlorobutadiene	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
2-Hexanone (MBK)	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Isopropylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
4-Isopropyltoluene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Methyl tert-butyl ether	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
4-Methyl-2-pentanone (MIBK)	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Methylene Chloride	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Naphthalene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1

Client Sample ID: MW-106 (9-11)
Date Collected: 12/11/24 11:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-4
Matrix: Solid
Percent Solids: 76.4

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Styrene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1,1,2-Tetrachloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1,2,2-Tetrachloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Tetrachloroethene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Toluene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2,3-Trichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2,4-Trichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,3,5-Trichlorobenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1,1-Trichloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,1,2-Trichloroethane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Trichloroethene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Trichlorofluoromethane (Freon 11)	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2,3-Trichloropropane	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,2,4-Trimethylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,3,5-Trimethylbenzene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Vinyl chloride	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
m,p-Xylene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
o-Xylene	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Tetrahydrofuran	ND		8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Ethyl ether	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Tert-amyl methyl ether	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Ethyl tert-butyl ether	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
di-Isopropyl ether	ND		4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
tert-Butanol	ND		88.6		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
1,4-Dioxane	ND		88.6		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
trans-1,4-Dichloro-2-butene	ND		22.2		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1
Ethanol	ND		886		ug/Kg	☼	12/20/24 11:05	12/20/24 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:30*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:30*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 15:30*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
1,2,4-Trichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
1,2-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
1,3-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
1,4-Dichlorobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
1-Methylnaphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4,5-Trichlorophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4,6-Trichlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4-Dichlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4-Dimethylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4-Dinitrophenol	ND		781		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,4-Dinitrotoluene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2,6-Dinitrotoluene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1

Client Sample ID: MW-106 (9-11)
Lab Sample ID: 620-22964-4
Date Collected: 12/11/24 11:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 76.4

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2-Chlorophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2-Methylnaphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2-Methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2-Nitroaniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
2-Nitrophenol	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
3 & 4 Methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
3,3'-Dichlorobenzidine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
3-Nitroaniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4,6-Dinitro-2-methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Bromophenyl phenyl ether	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Chloro-3-methylphenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Chloroaniline	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Chlorophenyl phenyl ether	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Nitroaniline	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
4-Nitrophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Acenaphthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Acenaphthylene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Aniline	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Azobenzene/Diphenyldiazene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzidine	ND	*- *1	781		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzo[a]anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzo[a]pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzo[b]fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzo[g,h,i]perylene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzo[k]fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzoic acid	ND		986		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Benzyl alcohol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Bis(2-chloroethoxy)methane	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Bis(2-chloroethyl)ether	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
bis (2-chloroisopropyl) ether	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Bis(2-ethylhexyl) phthalate	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Butyl benzyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Carbazole	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Chrysene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Dibenz(a,h)anthracene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Dibenzofuran	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Diethyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Dimethyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Di-n-butyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Di-n-octyl phthalate	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Fluoranthene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Fluorene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Hexachlorobenzene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Hexachlorobutadiene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Hexachlorocyclopentadiene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Hexachloroethane	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Indeno[1,2,3-cd]pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1

Client Sample ID: MW-106 (9-11)
Date Collected: 12/11/24 11:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-4
Matrix: Solid
Percent Solids: 76.4

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Naphthalene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Nitrobenzene	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
N-Nitrosodimethylamine	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
N-Nitrosodi-n-propylamine	ND		198		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
N-Nitrosodiphenylamine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Pentachloronitrobenzene	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Pentachlorophenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Phenanthrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Phenol	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Pyrene	ND		78.9		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1
Pyridine	ND		390		ug/Kg	☼	12/18/24 09:57	12/19/24 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:13*	*1*
2-Fluorophenol (Surr)	*105*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:13*	*1*
Nitrobenzene-d5 (Surr)	*84*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:13*	*1*
Phenol-d5 (Surr)	*94*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:13*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*15 - 110*	*12/18/24 09:57*	*12/19/24 23:13*	*1*
Terphenyl-d14 (Surr)	*75*		*30 - 130*	*12/18/24 09:57*	*12/19/24 23:13*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.88		mg/Kg	☼	12/18/24 11:15	12/18/24 17:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*129*		*70 - 130*	*12/18/24 11:15*	*12/18/24 17:28*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		17.0		mg/Kg	☼	12/18/24 14:23	12/19/24 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*69*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:55*	*1*
1-Chlorooctadecane	*101*		*40 - 140*	*12/18/24 14:23*	*12/19/24 16:55*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1221	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1232	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1242	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1248	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1254	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1260	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1262	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1
PCB-1268	ND		24.6		ug/Kg	☼	12/17/24 16:29	12/18/24 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:04*	*1*
Tetrachloro-m-xylene	*61*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:04*	*1*

Client Sample ID: MW-106 (9-11)
Lab Sample ID: 620-22964-4

Date Collected: 12/11/24 11:10
Matrix: Solid

Date Received: 12/16/24 17:00
Percent Solids: 76.4

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*84*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:04*	*1*
DCB Decachlorobiphenyl (Surr)	*76*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:04*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		5.67		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Arsenic	ND		1.70		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Beryllium	ND		0.567		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Cadmium	ND		0.567		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Chromium	**12.1**		1.13		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Copper	**14.9**		1.13		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Lead	**2.14**		1.70		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Nickel	**7.19**		1.13		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Selenium	ND		1.70		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Silver	ND		1.70		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Thallium	ND		3.40		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1
Zinc	**23.7**		3.40		mg/Kg	☼	12/17/24 11:58	12/18/24 13:42	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0568		mg/Kg	☼	12/18/24 10:08	12/18/24 16:29	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-104 (7-9)
Date Collected: 12/11/24 12:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-5
Matrix: Solid
Percent Solids: 65.7

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Acetone	ND	*3	44.3		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Acrylonitrile	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Benzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Bromobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Bromochloromethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Bromodichloromethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Bromoform	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Bromomethane	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
2-Butanone (MEK)	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
n-Butylbenzene	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
sec-Butylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
tert-Butylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Carbon disulfide	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Carbon tetrachloride	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Chlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Chloroethane	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Chloroform	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Chloromethane	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
2-Chlorotoluene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
4-Chlorotoluene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2-Dibromo-3-Chloropropane	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Dibromochloromethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2-Dibromoethane (EDB)	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Dibromomethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2-Dichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,3-Dichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,4-Dichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Dichlorodifluoromethane (Freon 12)	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1-Dichloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2-Dichloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1-Dichloroethene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
cis-1,2-Dichloroethene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
trans-1,2-Dichloroethene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2-Dichloropropane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,3-Dichloropropane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
2,2-Dichloropropane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1-Dichloropropene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
cis-1,3-Dichloropropene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
trans-1,3-Dichloropropene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Ethylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Hexachlorobutadiene	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
2-Hexanone (MBK)	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Isopropylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
4-Isopropyltoluene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Methyl tert-butyl ether	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
4-Methyl-2-pentanone (MIBK)	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Methylene Chloride	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Naphthalene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1

Client Sample ID: MW-104 (7-9)
Date Collected: 12/11/24 12:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-5
Matrix: Solid
Percent Solids: 65.7

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Styrene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1,1,2-Tetrachloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1,2,2-Tetrachloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Tetrachloroethene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Toluene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2,3-Trichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2,4-Trichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,3,5-Trichlorobenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1,1-Trichloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,1,2-Trichloroethane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Trichloroethene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Trichlorofluoromethane (Freon 11)	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2,3-Trichloropropane	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,2,4-Trimethylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,3,5-Trimethylbenzene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Vinyl chloride	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
m,p-Xylene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
o-Xylene	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Tetrahydrofuran	ND	*3	8.86		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Ethyl ether	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Tert-amyl methyl ether	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Ethyl tert-butyl ether	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
di-Isopropyl ether	ND	*3	4.43		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
tert-Butanol	ND	*3	88.6		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
1,4-Dioxane	ND	*3	88.6		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
trans-1,4-Dichloro-2-butene	ND	*3	22.1		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1
Ethanol	ND	*3	886		ug/Kg	☼	12/20/24 11:05	12/20/24 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*	**3*	*70 - 130*	*12/20/24 11:05*	*12/20/24 15:55*	*1*
Toluene-d8 (Surr)	*98*	**3*	*70 - 130*	*12/20/24 11:05*	*12/20/24 15:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*145*	**3 S1+*	*70 - 130*	*12/20/24 11:05*	*12/20/24 15:55*	*1*
Dibromofluoromethane (Surr)	*122*	**3*	*70 - 130*	*12/20/24 11:05*	*12/20/24 15:55*	*1*

Method: SW846 8260C - Volatile Organic Compounds by GC/MS - RE

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*	**3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 12:46*	*1*
Toluene-d8 (Surr)	*102*	**3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 12:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*126*	**3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 12:46*	*1*
Dibromofluoromethane (Surr)	*113*	**3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 12:46*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
1,2,4-Trichlorobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
1,2-Dichlorobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
1,3-Dichlorobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
1,4-Dichlorobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
1-Methylnaphthalene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1

Client Sample ID: MW-104 (7-9)
Date Collected: 12/11/24 12:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-5
Matrix: Solid
Percent Solids: 65.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,4,6-Trichlorophenol	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,4-Dichlorophenol	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,4-Dimethylphenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,4-Dinitrophenol	ND		874		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,4-Dinitrotoluene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2,6-Dinitrotoluene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Chloronaphthalene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Chlorophenol	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Methylnaphthalene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Methylphenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Nitroaniline	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
2-Nitrophenol	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
3 & 4 Methylphenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
3,3'-Dichlorobenzidine	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
3-Nitroaniline	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4,6-Dinitro-2-methylphenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Bromophenyl phenyl ether	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Chloro-3-methylphenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Chloroaniline	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Chlorophenyl phenyl ether	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Nitroaniline	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
4-Nitrophenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Acenaphthene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Acenaphthylene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Aniline	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Anthracene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Azobenzene/Diphenyldiazene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzidine	ND	*- *1	874		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzo[a]anthracene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzo[a]pyrene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzo[b]fluoranthene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzo[g,h,i]perylene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzo[k]fluoranthene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzoic acid	ND		1100		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Benzyl alcohol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Bis(2-chloroethoxy)methane	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Bis(2-chloroethyl)ether	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
bis (2-chloroisopropyl) ether	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Bis(2-ethylhexyl) phthalate	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Butyl benzyl phthalate	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Carbazole	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Chrysene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Dibenz(a,h)anthracene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Dibenzofuran	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Diethyl phthalate	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Dimethyl phthalate	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Di-n-butyl phthalate	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Di-n-octyl phthalate	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1

Client Sample ID: MW-104 (7-9)
Date Collected: 12/11/24 12:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-5
Matrix: Solid
Percent Solids: 65.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Fluorene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Hexachlorobenzene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Hexachlorobutadiene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Hexachlorocyclopentadiene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Hexachloroethane	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Indeno[1,2,3-cd]pyrene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Isophorone	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Naphthalene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Nitrobenzene	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
N-Nitrosodimethylamine	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
N-Nitrosodi-n-propylamine	ND		221		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
N-Nitrosodiphenylamine	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Pentachloronitrobenzene	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Pentachlorophenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Phenanthrene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Phenol	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Pyrene	ND		88.3		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1
Pyridine	ND		437		ug/Kg	☼	12/18/24 09:57	12/19/24 22:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*55*		*30 - 130*	*12/18/24 09:57*	*12/19/24 22:22*	*1*
2-Fluorophenol (Surr)	*100*		*15 - 110*	*12/18/24 09:57*	*12/19/24 22:22*	*1*
Nitrobenzene-d5 (Surr)	*75*		*30 - 130*	*12/18/24 09:57*	*12/19/24 22:22*	*1*
Phenol-d5 (Surr)	*90*		*15 - 110*	*12/18/24 09:57*	*12/19/24 22:22*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*15 - 110*	*12/18/24 09:57*	*12/19/24 22:22*	*1*
Terphenyl-d14 (Surr)	*48*		*30 - 130*	*12/18/24 09:57*	*12/19/24 22:22*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		4.57		mg/Kg	☼	12/18/24 11:15	12/18/24 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*70 - 130*	*12/18/24 11:15*	*12/18/24 18:03*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**58.7**		19.7		mg/Kg	☼	12/18/24 14:23	12/19/24 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*59*		*40 - 140*	*12/18/24 14:23*	*12/19/24 17:19*	*1*
1-Chlorooctadecane	*72*		*40 - 140*	*12/18/24 14:23*	*12/19/24 17:19*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1221	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1232	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1242	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1248	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1254	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1

Client Sample ID: MW-104 (7-9)
Lab Sample ID: 620-22964-5

Date Collected: 12/11/24 12:00
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 65.7

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1262	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1
PCB-1268	ND		29.2		ug/Kg	☼	12/17/24 16:29	12/18/24 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:22*	*1*
Tetrachloro-m-xylene	*51*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:22*	*1*
DCB Decachlorobiphenyl (Surr)	*53*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:22*	*1*
DCB Decachlorobiphenyl (Surr)	*50*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:22*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		16.1		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Arsenic	ND		4.83		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Beryllium	ND		1.61		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Cadmium	ND		1.61		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Chromium	**3.52**		3.22		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Copper	ND		3.22		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Lead	ND		4.83		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Nickel	ND		3.22		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Selenium	ND		4.83		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Silver	ND		4.83		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Thallium	ND		9.66		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2
Zinc	**23.9**		9.66		mg/Kg	☼	12/20/24 10:02	12/23/24 14:43	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0658		mg/Kg	☼	12/18/24 10:08	12/18/24 16:31	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid
Percent Solids: 89.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Acetone	ND	*3 F1 F2	52.6		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Acrylonitrile	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Benzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Bromobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Bromochloromethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Bromodichloromethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Bromoform	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Bromomethane	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
2-Butanone (MEK)	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
n-Butylbenzene	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
sec-Butylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
tert-Butylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Carbon disulfide	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Carbon tetrachloride	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Chlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Chloroethane	ND	*3	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Chloroform	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Chloromethane	ND	*3	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
2-Chlorotoluene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
4-Chlorotoluene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2-Dibromo-3-Chloropropane	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Dibromochloromethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2-Dibromoethane (EDB)	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Dibromomethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2-Dichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,3-Dichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,4-Dichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Dichlorodifluoromethane (Freon 12)	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1-Dichloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2-Dichloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1-Dichloroethene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
cis-1,2-Dichloroethene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
trans-1,2-Dichloroethene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2-Dichloropropane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,3-Dichloropropane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
2,2-Dichloropropane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1-Dichloropropene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
cis-1,3-Dichloropropene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
trans-1,3-Dichloropropene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Ethylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Hexachlorobutadiene	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
2-Hexanone (MBK)	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Isopropylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
4-Isopropyltoluene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Methyl tert-butyl ether	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
4-Methyl-2-pentanone (MIBK)	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Methylene Chloride	ND	*3 F1	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Naphthalene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid
Percent Solids: 89.2

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Styrene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1,1,2-Tetrachloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1,2,2-Tetrachloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Tetrachloroethene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Toluene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2,3-Trichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2,4-Trichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,3,5-Trichlorobenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1,1-Trichloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,1,2-Trichloroethane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Trichloroethene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Trichlorofluoromethane (Freon 11)	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2,3-Trichloropropane	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,2,4-Trimethylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,3,5-Trimethylbenzene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Vinyl chloride	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
m,p-Xylene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
o-Xylene	ND	*3 F1	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Tetrahydrofuran	ND	*3	10.5		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Ethyl ether	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Tert-amyl methyl ether	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Ethyl tert-butyl ether	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
di-Isopropyl ether	ND	*3	5.26		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
tert-Butanol	ND	*3	105		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
1,4-Dioxane	ND	*3	105		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
trans-1,4-Dichloro-2-butene	ND	*3 F1	26.3		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1
Ethanol	ND	*3 F1	1050		ug/Kg	☼	12/23/24 10:40	12/23/24 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*	*3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 13:11*	*1*
Toluene-d8 (Surr)	*101*	*3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 13:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*141*	*S1+ *3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 13:11*	*1*
Dibromofluoromethane (Surr)	*108*	*3*	*70 - 130*	*12/23/24 10:40*	*12/23/24 13:11*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
1,2,4-Trichlorobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
1,2-Dichlorobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
1,3-Dichlorobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
1,4-Dichlorobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
1-Methylnaphthalene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4,5-Trichlorophenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4,6-Trichlorophenol	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4-Dichlorophenol	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4-Dimethylphenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4-Dinitrophenol	ND	F2 F1	3410		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,4-Dinitrotoluene	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2,6-Dinitrotoluene	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid
Percent Solids: 89.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2-Chlorophenol	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2-Methylnaphthalene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2-Methylphenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2-Nitroaniline	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
2-Nitrophenol	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
3 & 4 Methylphenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
3,3'-Dichlorobenzidine	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
3-Nitroaniline	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4,6-Dinitro-2-methylphenol	ND	F2	1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Bromophenyl phenyl ether	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Chloro-3-methylphenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Chloroaniline	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Chlorophenyl phenyl ether	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Nitroaniline	ND	F2	864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
4-Nitrophenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Acenaphthene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Acenaphthylene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Aniline	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Anthracene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Azobenzene/Diphenyldiazene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzidine	ND	*- F1 *1	3410		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzo[a]anthracene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzo[a]pyrene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzo[b]fluoranthene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzo[g,h,i]perylene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzo[k]fluoranthene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzoic acid	ND		4310		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Benzyl alcohol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Bis(2-chloroethoxy)methane	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Bis(2-chloroethyl)ether	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
bis (2-chloroisopropyl) ether	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Bis(2-ethylhexyl) phthalate	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Butyl benzyl phthalate	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Carbazole	ND	F2	864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Chrysene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Dibenz(a,h)anthracene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Dibenzofuran	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Diethyl phthalate	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Dimethyl phthalate	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Di-n-butyl phthalate	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Di-n-octyl phthalate	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Fluoranthene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Fluorene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Hexachlorobenzene	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Hexachlorobutadiene	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Hexachlorocyclopentadiene	ND	F2	864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Hexachloroethane	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Indeno[1,2,3-cd]pyrene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid
Percent Solids: 89.2

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Naphthalene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Nitrobenzene	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
N-Nitrosodimethylamine	ND	F2	864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
N-Nitrosodi-n-propylamine	ND		864		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
N-Nitrosodiphenylamine	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Pentachloronitrobenzene	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Pentachlorophenol	ND		1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Phenanthrene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Phenol	ND	F2	1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Pyrene	ND		345		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1
Pyridine	ND	F2 F1	1710		ug/Kg	☼	12/18/24 09:57	12/20/24 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*30 - 130*	*12/18/24 09:57*	*12/20/24 21:53*	*1*
2-Fluorophenol (Surr)	*82*		*15 - 110*	*12/18/24 09:57*	*12/20/24 21:53*	*1*
Nitrobenzene-d5 (Surr)	*71*		*30 - 130*	*12/18/24 09:57*	*12/20/24 21:53*	*1*
Phenol-d5 (Surr)	*74*		*15 - 110*	*12/18/24 09:57*	*12/20/24 21:53*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*15 - 110*	*12/18/24 09:57*	*12/20/24 21:53*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/18/24 09:57*	*12/20/24 21:53*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		3.12		mg/Kg	☼	12/18/24 11:15	12/18/24 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*75*		*70 - 130*	*12/18/24 11:15*	*12/18/24 18:38*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		14.6		mg/Kg	☼	12/18/24 14:23	12/19/24 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*40 - 140*	*12/18/24 14:23*	*12/19/24 17:43*	*1*
1-Chlorooctadecane	*88*		*40 - 140*	*12/18/24 14:23*	*12/19/24 17:43*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1221	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1232	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1242	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1248	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1254	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1260	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1262	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1
PCB-1268	ND		21.8		ug/Kg	☼	12/17/24 16:29	12/18/24 23:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*75*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:40*	*1*
Tetrachloro-m-xylene	*77*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:40*	*1*

Client Sample ID: SB-3 (7-9)
Lab Sample ID: 620-22964-6
Date Collected: 12/12/24 08:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 89.2

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*102*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:40*	*1*
DCB Decachlorobiphenyl (Surr)	*91*		*30 - 150*	*12/17/24 16:29*	*12/18/24 23:40*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		5.34		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Arsenic	ND		1.60		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Beryllium	ND		0.534		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Cadmium	ND		0.534		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Chromium	ND		1.07		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Copper	**3.07**		1.07		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Lead	ND		1.60		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Nickel	ND		1.07		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Selenium	ND		1.60		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Silver	ND		1.60		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Thallium	ND		3.20		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1
Zinc	**11.7**		3.20		mg/Kg	☼	12/17/24 11:58	12/18/24 13:24	1

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0436		mg/Kg	☼	12/18/24 10:08	12/18/24 16:34	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-4 (13-15)
Date Collected: 12/12/24 09:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-7
Matrix: Solid
Percent Solids: 82.7

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Acetone	ND		67.9		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Acrylonitrile	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Benzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Bromobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Bromochloromethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Bromodichloromethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Bromoform	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Bromomethane	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
2-Butanone (MEK)	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
n-Butylbenzene	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
sec-Butylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
tert-Butylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Carbon disulfide	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Carbon tetrachloride	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Chlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Chloroethane	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Chloroform	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Chloromethane	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
2-Chlorotoluene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
4-Chlorotoluene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2-Dibromo-3-Chloropropane	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Dibromochloromethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2-Dibromoethane (EDB)	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Dibromomethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2-Dichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,3-Dichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,4-Dichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Dichlorodifluoromethane (Freon 12)	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1-Dichloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2-Dichloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1-Dichloroethene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
cis-1,2-Dichloroethene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
trans-1,2-Dichloroethene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2-Dichloropropane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,3-Dichloropropane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
2,2-Dichloropropane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1-Dichloropropene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
cis-1,3-Dichloropropene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
trans-1,3-Dichloropropene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Ethylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Hexachlorobutadiene	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
2-Hexanone (MBK)	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Isopropylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
4-Isopropyltoluene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Methyl tert-butyl ether	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
4-Methyl-2-pentanone (MIBK)	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Methylene Chloride	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Naphthalene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1

Client Sample ID: SB-4 (13-15)
Date Collected: 12/12/24 09:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-7
Matrix: Solid
Percent Solids: 82.7

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Styrene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1,1,2-Tetrachloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1,2,2-Tetrachloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Tetrachloroethene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Toluene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2,3-Trichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2,4-Trichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,3,5-Trichlorobenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1,1-Trichloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,1,2-Trichloroethane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Trichloroethene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Trichlorofluoromethane (Freon 11)	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2,3-Trichloropropane	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,2,4-Trimethylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,3,5-Trimethylbenzene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Vinyl chloride	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
m,p-Xylene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
o-Xylene	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Tetrahydrofuran	ND		13.6		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Ethyl ether	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Tert-amyl methyl ether	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Ethyl tert-butyl ether	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
di-Isopropyl ether	ND		6.79		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
tert-Butanol	ND		136		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
1,4-Dioxane	ND		136		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
trans-1,4-Dichloro-2-butene	ND		34.0		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1
Ethanol	ND		1360		ug/Kg	☼	12/20/24 11:05	12/20/24 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*12/20/24 11:05*	*12/20/24 16:45*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*12/20/24 11:05*	*12/20/24 16:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*	*12/20/24 11:05*	*12/20/24 16:45*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*	*12/20/24 11:05*	*12/20/24 16:45*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
1,2,4-Trichlorobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
1,2-Dichlorobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
1,3-Dichlorobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
1,4-Dichlorobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
1-Methylnaphthalene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4,5-Trichlorophenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4,6-Trichlorophenol	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4-Dichlorophenol	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4-Dimethylphenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4-Dinitrophenol	ND		778		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,4-Dinitrotoluene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2,6-Dinitrotoluene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-4 (13-15)
Lab Sample ID: 620-22964-7
Date Collected: 12/12/24 09:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 82.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2-Chlorophenol	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2-Methylnaphthalene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2-Methylphenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2-Nitroaniline	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
2-Nitrophenol	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
3 & 4 Methylphenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
3,3'-Dichlorobenzidine	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
3-Nitroaniline	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4,6-Dinitro-2-methylphenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Bromophenyl phenyl ether	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Chloro-3-methylphenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Chloroaniline	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Chlorophenyl phenyl ether	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Nitroaniline	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
4-Nitrophenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Acenaphthene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Acenaphthylene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Aniline	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Anthracene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Azobenzene/Diphenyldiazene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzidine	ND	*- *1	778		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzo[a]anthracene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzo[a]pyrene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzo[b]fluoranthene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzo[g,h,i]perylene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzo[k]fluoranthene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzoic acid	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Benzyl alcohol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Bis(2-chloroethoxy)methane	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Bis(2-chloroethyl)ether	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
bis (2-chloroisopropyl) ether	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Bis(2-ethylhexyl) phthalate	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Butyl benzyl phthalate	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Carbazole	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Chrysene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Dibenz(a,h)anthracene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Dibenzofuran	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Diethyl phthalate	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Dimethyl phthalate	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Di-n-butyl phthalate	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Di-n-octyl phthalate	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Fluoranthene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Fluorene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Hexachlorobenzene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Hexachlorobutadiene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Hexachlorocyclopentadiene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Hexachloroethane	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Indeno[1,2,3-cd]pyrene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1

Client Sample ID: SB-4 (13-15)
Date Collected: 12/12/24 09:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-7
Matrix: Solid
Percent Solids: 82.7

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Naphthalene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Nitrobenzene	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
N-Nitrosodimethylamine	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
N-Nitrosodi-n-propylamine	ND		197		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
N-Nitrosodiphenylamine	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Pentachloronitrobenzene	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Pentachlorophenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Phenanthrene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Phenol	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Pyrene	ND		78.6		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1
Pyridine	ND		389		ug/Kg	☼	12/18/24 09:57	12/26/24 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*	*12/18/24 09:57*	*12/26/24 15:20*	*1*
2-Fluorophenol (Surr)	*77*		*15 - 110*	*12/18/24 09:57*	*12/26/24 15:20*	*1*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*	*12/18/24 09:57*	*12/26/24 15:20*	*1*
Phenol-d5 (Surr)	*79*		*15 - 110*	*12/18/24 09:57*	*12/26/24 15:20*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*15 - 110*	*12/18/24 09:57*	*12/26/24 15:20*	*1*
Terphenyl-d14 (Surr)	*79*		*30 - 130*	*12/18/24 09:57*	*12/26/24 15:20*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND	F1	4.88		mg/Kg	☼	12/18/24 11:15	12/18/24 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*73*		*70 - 130*	*12/18/24 11:15*	*12/18/24 20:22*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		14.4		mg/Kg	☼	12/18/24 14:23	12/19/24 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*59*		*40 - 140*	*12/18/24 14:23*	*12/19/24 20:27*	*1*
1-Chlorooctadecane	*82*		*40 - 140*	*12/18/24 14:23*	*12/19/24 20:27*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1221	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1232	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1242	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1248	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1254	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1260	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1262	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1
PCB-1268	ND		23.0		ug/Kg	☼	12/17/24 16:29	12/19/24 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 150*	*12/17/24 16:29*	*12/19/24 00:33*	*1*
Tetrachloro-m-xylene	*83*		*30 - 150*	*12/17/24 16:29*	*12/19/24 00:33*	*1*

Client Sample ID: SB-4 (13-15)
Lab Sample ID: 620-22964-7
Date Collected: 12/12/24 09:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 82.7

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*106*		*30 - 150*	*12/17/24 16:29*	*12/19/24 00:33*	*1*
DCB Decachlorobiphenyl (Surr)	*97*		*30 - 150*	*12/17/24 16:29*	*12/19/24 00:33*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		11.7		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Arsenic	ND		3.50		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Beryllium	ND		1.17		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Cadmium	ND		1.17		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Chromium	**3.55**		2.34		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Copper	ND		2.34		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Lead	ND		3.50		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Nickel	**3.63**		2.34		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Selenium	ND		3.50		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Silver	ND		3.50		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Thallium	ND		7.01		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2
Zinc	**19.0**		7.01		mg/Kg	☼	12/20/24 10:02	12/23/24 14:07	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0531		mg/Kg	☼	12/18/24 10:08	12/18/24 16:43	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-2 (9-11)
Date Collected: 12/12/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-8
Matrix: Solid
Percent Solids: 85.1

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Acetone	ND		27.9		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Acrylonitrile	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Benzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Bromobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Bromochloromethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Bromodichloromethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Bromoform	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Bromomethane	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
2-Butanone (MEK)	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
n-Butylbenzene	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
sec-Butylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
tert-Butylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Carbon disulfide	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Carbon tetrachloride	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Chlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Chloroethane	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Chloroform	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Chloromethane	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
2-Chlorotoluene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
4-Chlorotoluene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2-Dibromo-3-Chloropropane	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Dibromochloromethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2-Dibromoethane (EDB)	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Dibromomethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2-Dichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,3-Dichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,4-Dichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Dichlorodifluoromethane (Freon 12)	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1-Dichloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2-Dichloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1-Dichloroethene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
cis-1,2-Dichloroethene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
trans-1,2-Dichloroethene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2-Dichloropropane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,3-Dichloropropane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
2,2-Dichloropropane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1-Dichloropropene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
cis-1,3-Dichloropropene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
trans-1,3-Dichloropropene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Ethylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Hexachlorobutadiene	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
2-Hexanone (MBK)	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Isopropylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
4-Isopropyltoluene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Methyl tert-butyl ether	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
4-Methyl-2-pentanone (MIBK)	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Methylene Chloride	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Naphthalene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1

Client Sample ID: SB-2 (9-11)
Date Collected: 12/12/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-8
Matrix: Solid
Percent Solids: 85.1

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Styrene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1,1,2-Tetrachloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1,2,2-Tetrachloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Tetrachloroethene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Toluene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2,3-Trichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2,4-Trichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,3,5-Trichlorobenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1,1-Trichloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,1,2-Trichloroethane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Trichloroethene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Trichlorofluoromethane (Freon 11)	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2,3-Trichloropropane	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,2,4-Trimethylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,3,5-Trimethylbenzene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Vinyl chloride	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
m,p-Xylene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
o-Xylene	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Tetrahydrofuran	ND		5.58		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Ethyl ether	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Tert-amyl methyl ether	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Ethyl tert-butyl ether	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
di-Isopropyl ether	ND		2.79		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
tert-Butanol	ND		55.8		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
1,4-Dioxane	ND		55.8		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
trans-1,4-Dichloro-2-butene	ND		14.0		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1
Ethanol	ND		558		ug/Kg	☼	12/20/24 11:05	12/20/24 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*12/20/24 11:05*	*12/20/24 17:11*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*12/20/24 11:05*	*12/20/24 17:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*	*12/20/24 11:05*	*12/20/24 17:11*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/20/24 11:05*	*12/20/24 17:11*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
1,2,4-Trichlorobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
1,2-Dichlorobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
1,3-Dichlorobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
1,4-Dichlorobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
1-Methylnaphthalene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4,5-Trichlorophenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4,6-Trichlorophenol	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4-Dichlorophenol	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4-Dimethylphenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4-Dinitrophenol	ND		746		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,4-Dinitrotoluene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2,6-Dinitrotoluene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: SB-2 (9-11)
Date Collected: 12/12/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-8
Matrix: Solid
Percent Solids: 85.1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2-Chlorophenol	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2-Methylnaphthalene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2-Methylphenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2-Nitroaniline	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
2-Nitrophenol	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
3 & 4 Methylphenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
3,3'-Dichlorobenzidine	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
3-Nitroaniline	ND	F1	373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4,6-Dinitro-2-methylphenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Bromophenyl phenyl ether	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Chloro-3-methylphenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Chloroaniline	ND	F1	189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Chlorophenyl phenyl ether	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Nitroaniline	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
4-Nitrophenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Acenaphthene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Acenaphthylene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Aniline	ND	F1	373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Anthracene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Azobenzene/Diphenyldiazene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzidine	ND	F1	746		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzo[a]anthracene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzo[a]pyrene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzo[b]fluoranthene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzo[g,h,i]perylene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzo[k]fluoranthene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzoic acid	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Benzyl alcohol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Bis(2-chloroethoxy)methane	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Bis(2-chloroethyl)ether	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
bis (2-chloroisopropyl) ether	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Bis(2-ethylhexyl) phthalate	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Butyl benzyl phthalate	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Carbazole	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Chrysene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Dibenz(a,h)anthracene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Dibenzofuran	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Diethyl phthalate	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Dimethyl phthalate	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Di-n-butyl phthalate	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Di-n-octyl phthalate	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Fluoranthene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Fluorene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Hexachlorobenzene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Hexachlorobutadiene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Hexachlorocyclopentadiene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Hexachloroethane	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Indeno[1,2,3-cd]pyrene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1

Client Sample ID: SB-2 (9-11)
Date Collected: 12/12/24 10:15
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-8
Matrix: Solid
Percent Solids: 85.1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Naphthalene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Nitrobenzene	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
N-Nitrosodimethylamine	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
N-Nitrosodi-n-propylamine	ND		189		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
N-Nitrosodiphenylamine	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Pentachloronitrobenzene	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Pentachlorophenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Phenanthrene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Phenol	ND		373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Pyrene	ND		75.4		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1
Pyridine	ND	F1	373		ug/Kg	☼	12/19/24 10:22	12/20/24 20:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:36*	*1*
2-Fluorophenol (Surr)	*93*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:36*	*1*
Nitrobenzene-d5 (Surr)	*57*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:36*	*1*
Phenol-d5 (Surr)	*78*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:36*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*15 - 110*	*12/19/24 10:22*	*12/20/24 20:36*	*1*
Terphenyl-d14 (Surr)	*73*		*30 - 130*	*12/19/24 10:22*	*12/20/24 20:36*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND	F1 F2	4.06		mg/Kg	☼	12/18/24 11:15	12/18/24 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*80*		*70 - 130*	*12/18/24 11:15*	*12/18/24 22:07*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		15.0		mg/Kg	☼	12/18/24 14:23	12/23/24 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*61*		*40 - 140*	*12/18/24 14:23*	*12/23/24 14:35*	*1*
1-Chlorooctadecane	*86*		*40 - 140*	*12/18/24 14:23*	*12/23/24 14:35*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1221	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1232	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1242	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1248	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1254	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1260	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1262	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1
PCB-1268	ND		23.2		ug/Kg	☼	12/17/24 16:29	12/19/24 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 150*	*12/17/24 16:29*	*12/19/24 02:24*	*1*
Tetrachloro-m-xylene	*74*		*30 - 150*	*12/17/24 16:29*	*12/19/24 02:24*	*1*

Client Sample ID: SB-2 (9-11)
Lab Sample ID: 620-22964-8
Date Collected: 12/12/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 85.1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*100*		*30 - 150*	*12/17/24 16:29*	*12/19/24 02:24*	*1*
DCB Decachlorobiphenyl (Surr)	*93*		*30 - 150*	*12/17/24 16:29*	*12/19/24 02:24*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		11.5		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Arsenic	ND		3.46		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Beryllium	ND		1.15		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Cadmium	ND		1.15		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Chromium	ND		2.31		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Copper	ND		2.31		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Lead	ND		3.46		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Nickel	ND		2.31		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Selenium	ND		3.46		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Silver	ND		3.46		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Thallium	ND		6.93		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2
Zinc	ND		6.93		mg/Kg	☼	12/20/24 10:02	12/23/24 15:19	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0467		mg/Kg	☼	12/18/24 10:08	12/18/24 16:49	1

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: Trip Blank

Date Collected: 12/11/24 08:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-9

Matrix: Solid

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Acetone	ND		50.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Acrylonitrile	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Benzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Bromobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Bromochloromethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Bromodichloromethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Bromoform	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Bromomethane	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
n-Butylbenzene	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Carbon disulfide	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Chlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Chloroethane	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Chloroform	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Chloromethane	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Dibromochloromethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Dibromomethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Ethylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Isopropylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Methylene Chloride	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Naphthalene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1

Client Sample ID: Trip Blank
Lab Sample ID: 620-22964-9

Date Collected: 12/11/24 08:00
Matrix: Solid

Date Received: 12/16/24 17:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Styrene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Tetrachloroethene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Toluene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Trichloroethene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Vinyl chloride	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
m,p-Xylene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
o-Xylene	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Ethyl ether	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
tert-Butanol	ND		100		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
1,4-Dioxane	ND		100		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/20/24 11:05	12/20/24 12:05	1
Ethanol	ND		1000		ug/Kg		12/20/24 11:05	12/20/24 12:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*12/20/24 11:05*	*12/20/24 12:05*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*12/20/24 11:05*	*12/20/24 12:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*	*12/20/24 11:05*	*12/20/24 12:05*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*12/20/24 11:05*	*12/20/24 12:05*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DCA	DBFM
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
620-22964-1	MW-103 (11-13)	99	101	106	106
620-22964-2	MW-103 (11-13) DUP	101	100	107	106
620-22964-3	MW-105 (9-11)	98	99	107	106
620-22964-4	MW-106 (9-11)	97	101	106	106
620-22964-5	MW-104 (7-9)	84 *3	98 *3	145 *3 S1+	122 *3
620-22964-5 - RE	MW-104 (7-9)	98 *3	102 *3	126 *3	113 *3
620-22964-6	SB-3 (7-9)	91 *3	101 *3	141 S1+ *3	108 *3
620-22964-6 MS	SB-3 (7-9)	102	102	107	107
620-22964-6 MSD	SB-3 (7-9)	101	103	107	106
620-22964-7	SB-4 (13-15)	96	100	107	106
620-22964-7 MS	SB-4 (13-15)	102	103	106	106
620-22964-7 MSD	SB-4 (13-15)	102	103	105	107
620-22964-8	SB-2 (9-11)	100	100	108	107
620-22964-8 MS	SB-2 (9-11)	102	103	108	107
620-22964-8 MSD	SB-2 (9-11)	99	101	95	102
620-22964-9	Trip Blank	98	99	103	103
LCS 620-42770/1-A	Lab Control Sample	101	103	105	106
LCS 620-42825/1-A	Lab Control Sample	102	104	111	109
LCSD 620-42770/2-A	Lab Control Sample Dup	100	103	108	105
LCSD 620-42825/2-A	Lab Control Sample Dup	102	103	105	107
MB 620-42770/3-A	Method Blank	101	100	106	105
MB 620-42770/3-A	Method Blank	102	101	108	107

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TBP	TPHL
Lab Sample ID	Client Sample ID	(30-130)	(15-110)	(30-130)	(15-110)	(15-110)	(30-130)
620-22964-1	MW-103 (11-13)	63	89	62	76	60	58
620-22964-2	MW-103 (11-13) DUP	69	91	64	77	68	68
620-22964-3	MW-105 (9-11)	58	76	58	65	59	56
620-22964-4	MW-106 (9-11)	77	105	84	94	84	75
620-22964-5	MW-104 (7-9)	55	100	75	90	70	48
620-22964-6	SB-3 (7-9)	71	82	71	74	69	73
620-22964-6 MS	SB-3 (7-9)	81	93	72	83	86	83
620-22964-6 MSD	SB-3 (7-9)	65	73	61	72	78	77
620-22964-7	SB-4 (13-15)	72	77	72	79	64	79
620-22964-7 MS	SB-4 (13-15)	77	83	76	80	59	78
620-22964-7 MSD	SB-4 (13-15)	83	88	80	84	63	85
620-22964-8	SB-2 (9-11)	70	93	57	78	71	73
620-22964-8 MS	SB-2 (9-11)	64	74	59	65	68	62
620-22964-8 MSD	SB-2 (9-11)	60	71	56	63	65	58

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

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

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TBP	TPHL
Lab Sample ID	Client Sample ID	(30-130)	(15-110)	(30-130)	(15-110)	(15-110)	(30-130)
LCS 620-42656/2-A	Lab Control Sample	72	86	71	82	78	70
LCS 620-42706/2-A	Lab Control Sample	49	56	48	51	52	50
LCSD 620-42656/3-A	Lab Control Sample Dup	72	84	72	83	78	73
LCSD 620-42706/3-A	Lab Control Sample Dup	50	57	50	52	52	49
MB 620-42656/1-A	Method Blank	57	75	60	70	48	57
MB 620-42706/1-A	Method Blank	53	64	52	57	44	57

Surrogate Legend

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

Method: 8015D - Gasoline Range Organics (GRO) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)
		25DBTf1
Lab Sample ID	Client Sample ID	(70-130)
620-22964-1	MW-103 (11-13)	75
620-22964-2	MW-103 (11-13) DUP	87
620-22964-3	MW-105 (9-11)	74
620-22964-4	MW-106 (9-11)	129
620-22964-5	MW-104 (7-9)	93
620-22964-6	SB-3 (7-9)	75
620-22964-6 MS	SB-3 (7-9)	83
620-22964-6 MSD	SB-3 (7-9)	92
620-22964-7	SB-4 (13-15)	73
620-22964-7 MS	SB-4 (13-15)	79
620-22964-7 MSD	SB-4 (13-15)	103
620-22964-8	SB-2 (9-11)	80
620-22964-8 MS	SB-2 (9-11)	116
620-22964-8 MSD	SB-2 (9-11)	80
LCS 620-42660/1-A	Lab Control Sample	102
LCSD 620-42660/2-A	Lab Control Sample Dup	105
MB 620-42660/3-A	Method Blank	102

Surrogate Legend

25DBTf = 2,5-Dibromotoluene (fid)

Method: 8015D - Diesel Range Organics (DRO) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		OTPH	1COD
Lab Sample ID	Client Sample ID	(40-140)	(40-140)
620-22964-1	MW-103 (11-13)	65	90
620-22964-2	MW-103 (11-13) DUP	64	92
620-22964-3	MW-105 (9-11)	68	92
620-22964-4	MW-106 (9-11)	69	101

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTPH (40-140)	1COD (40-140)
620-22964-5	MW-104 (7-9)	59	72
620-22964-6	SB-3 (7-9)	65	88
620-22964-6 MS	SB-3 (7-9)	79	78
620-22964-6 MSD	SB-3 (7-9)	70	72
620-22964-7	SB-4 (13-15)	59	82
620-22964-7 MS	SB-4 (13-15)	65	67
620-22964-7 MSD	SB-4 (13-15)	71	72
620-22964-8	SB-2 (9-11)	61	86
620-22964-8 MS	SB-2 (9-11)	69	70
620-22964-8 MSD	SB-2 (9-11)	71	75
LCS 620-42671/2-A	Lab Control Sample	77	79
LCSD 620-42671/3-A	Lab Control Sample Dup	76	78
MB 620-42671/1-A	Method Blank	58	63

Surrogate Legend

OTPH = o-Terphenyl
1COD = 1-Chlorooctadecane

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	TCX1 (30-150)	TCX2 (30-150)	DCB1 (30-150)	DCB2 (30-150)
620-22964-1	MW-103 (11-13)	74	74	80	71
620-22964-2	MW-103 (11-13) DUP	72	73	104	94
620-22964-3	MW-105 (9-11)	75	77	103	95
620-22964-4	MW-106 (9-11)	60	61	84	76
620-22964-5	MW-104 (7-9)	51	51	53	50
620-22964-6	SB-3 (7-9)	75	77	102	91
620-22964-6 MS	SB-3 (7-9)	78	81	106	96
620-22964-6 MSD	SB-3 (7-9)	78	81	102	92
620-22964-7	SB-4 (13-15)	82	83	106	97
620-22964-7 MS	SB-4 (13-15)	79	81	107	95
620-22964-7 MSD	SB-4 (13-15)	83	85	113	99
620-22964-8	SB-2 (9-11)	74	74	100	93
620-22964-8 MS	SB-2 (9-11)	75	78	112	103
620-22964-8 MSD	SB-2 (9-11)	64	66	99	92
LCS 620-42628/2-A	Lab Control Sample	76	78	118	109
LCSD 620-42628/3-A	Lab Control Sample Dup	95	97	123	110
MB 620-42628/1-A	Method Blank	95	97	143	131

Surrogate Legend

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

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

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

Lab Sample ID: MB 620-42770/3-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42770

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Acetone	ND		50.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Acrylonitrile	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Benzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Bromobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Bromochloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Bromodichloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Bromoform	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Bromomethane	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
n-Butylbenzene	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Carbon disulfide	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Chlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Chloroethane	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Chloroform	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Chloromethane	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Dibromochloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Dibromomethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Ethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Isopropylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Methylene Chloride	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1

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

Lab Sample ID: MB 620-42770/3-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42770

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
N-Propylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Styrene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Tetrachloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Toluene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Trichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Vinyl chloride	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
m,p-Xylene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
o-Xylene	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Ethyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
tert-Butanol	ND		100		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
1,4-Dioxane	ND		100		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/20/24 08:00	12/20/24 10:42	1
Ethanol	ND		1000		ug/Kg		12/20/24 08:00	12/20/24 10:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*12/20/24 08:00*	*12/20/24 10:42*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*12/20/24 08:00*	*12/20/24 10:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*	*12/20/24 08:00*	*12/20/24 10:42*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*	*12/20/24 08:00*	*12/20/24 10:42*	*1*

Lab Sample ID: MB 620-42770/3-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42770

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Acetone	ND		50.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Acrylonitrile	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Benzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Bromobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Bromochloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Bromodichloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1

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

Lab Sample ID: MB 620-42770/3-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42770

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Bromomethane	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
2-Butanone (MEK)	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
n-Butylbenzene	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
sec-Butylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
tert-Butylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Carbon disulfide	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Carbon tetrachloride	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Chlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Chloroethane	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Chloroform	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Chloromethane	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
2-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
4-Chlorotoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Dibromochloromethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2-Dibromoethane (EDB)	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Dibromomethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,3-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,4-Dichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Dichlorodifluoromethane (Freon 12)	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1-Dichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2-Dichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
cis-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
trans-1,2-Dichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,3-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
2,2-Dichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
cis-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
trans-1,3-Dichloropropene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Ethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Hexachlorobutadiene	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
2-Hexanone (MBK)	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Isopropylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
4-Isopropyltoluene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Methyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Methylene Chloride	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Naphthalene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
N-Propylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Styrene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1,1,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1,2,2-Tetrachloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Tetrachloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Toluene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2,3-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1

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

Lab Sample ID: MB 620-42770/3-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42770

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,3,5-Trichlorobenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1,1-Trichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,1,2-Trichloroethane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Trichloroethene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Trichlorofluoromethane (Freon 11)	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2,3-Trichloropropane	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,2,4-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,3,5-Trimethylbenzene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Vinyl chloride	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
m,p-Xylene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
o-Xylene	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Tetrahydrofuran	ND		10.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Ethyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Tert-amyl methyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Ethyl tert-butyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
di-Isopropyl ether	ND		5.00		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
tert-Butanol	ND		100		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
1,4-Dioxane	ND		100		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
trans-1,4-Dichloro-2-butene	ND		25.0		ug/Kg		12/20/24 08:00	12/23/24 10:52	1
Ethanol	ND		1000		ug/Kg		12/20/24 08:00	12/23/24 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*12/20/24 08:00*	*12/23/24 10:52*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*12/20/24 08:00*	*12/23/24 10:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*	*12/20/24 08:00*	*12/23/24 10:52*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*	*12/20/24 08:00*	*12/23/24 10:52*	*1*

Lab Sample ID: LCS 620-42770/1-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.0	20.45		ug/Kg		102	70 - 130
Acetone	20.0	18.43	J	ug/Kg		92	70 - 130
Acrylonitrile	20.0	19.19		ug/Kg		96	70 - 130
Benzene	20.0	20.42		ug/Kg		102	70 - 130
Bromobenzene	20.0	20.45		ug/Kg		102	70 - 130
Bromochloromethane	20.0	21.14		ug/Kg		106	70 - 130
Bromodichloromethane	20.0	21.08		ug/Kg		105	70 - 130
Bromoform	20.0	19.67		ug/Kg		98	70 - 130
Bromomethane	20.0	20.55		ug/Kg		103	70 - 130
2-Butanone (MEK)	20.0	18.54		ug/Kg		93	70 - 130
n-Butylbenzene	20.0	18.62		ug/Kg		93	70 - 130
sec-Butylbenzene	20.0	19.87		ug/Kg		99	70 - 130
tert-Butylbenzene	20.0	21.45		ug/Kg		107	70 - 130
Carbon disulfide	20.0	20.46		ug/Kg		102	70 - 130
Carbon tetrachloride	20.0	21.14		ug/Kg		106	70 - 130

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

Lab Sample ID: LCS 620-42770/1-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene	20.0	19.86		ug/Kg		99	70 - 130
Chloroethane	20.0	20.40		ug/Kg		102	70 - 130
Chloroform	20.0	20.91		ug/Kg		105	70 - 130
Chloromethane	20.0	20.91		ug/Kg		105	70 - 130
2-Chlorotoluene	20.0	20.28		ug/Kg		101	70 - 130
4-Chlorotoluene	20.0	19.91		ug/Kg		100	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	18.90		ug/Kg		94	70 - 130
Dibromochloromethane	20.0	20.83		ug/Kg		104	70 - 130
1,2-Dibromoethane (EDB)	20.0	20.67		ug/Kg		103	70 - 130
Dibromomethane	20.0	21.26		ug/Kg		106	70 - 130
1,2-Dichlorobenzene	20.0	19.89		ug/Kg		99	70 - 130
1,3-Dichlorobenzene	20.0	20.42		ug/Kg		102	70 - 130
1,4-Dichlorobenzene	20.0	19.53		ug/Kg		98	70 - 130
Dichlorodifluoromethane (Freon 12)	20.0	22.01		ug/Kg		110	70 - 130
1,1-Dichloroethane	20.0	20.55		ug/Kg		103	70 - 130
1,2-Dichloroethane	20.0	21.74		ug/Kg		109	70 - 130
1,1-Dichloroethene	20.0	20.45		ug/Kg		102	70 - 130
cis-1,2-Dichloroethene	20.0	20.29		ug/Kg		101	70 - 130
trans-1,2-Dichloroethene	20.0	20.13		ug/Kg		101	70 - 130
1,2-Dichloropropane	20.0	20.10		ug/Kg		101	70 - 130
1,3-Dichloropropane	20.0	20.77		ug/Kg		104	70 - 130
2,2-Dichloropropane	20.0	21.50		ug/Kg		108	70 - 130
1,1-Dichloropropene	20.0	20.35		ug/Kg		102	70 - 130
cis-1,3-Dichloropropene	20.0	20.26		ug/Kg		101	70 - 130
trans-1,3-Dichloropropene	20.0	20.79		ug/Kg		104	70 - 130
Ethylbenzene	20.0	19.88		ug/Kg		99	70 - 130
Hexachlorobutadiene	20.0	19.27		ug/Kg		96	70 - 130
2-Hexanone (MBK)	20.0	17.87		ug/Kg		89	70 - 130
Isopropylbenzene	20.0	20.00		ug/Kg		100	70 - 130
4-Isopropyltoluene	20.0	19.37		ug/Kg		97	70 - 130
Methyl tert-butyl ether	20.0	20.85		ug/Kg		104	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	17.50		ug/Kg		88	70 - 130
Methylene Chloride	20.0	20.57		ug/Kg		103	70 - 130
Naphthalene	20.0	19.99		ug/Kg		100	70 - 130
N-Propylbenzene	20.0	19.89		ug/Kg		99	70 - 130
Styrene	20.0	19.93		ug/Kg		100	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.23		ug/Kg		101	70 - 130
1,1,2,2-Tetrachloroethane	20.0	19.02		ug/Kg		95	70 - 130
Tetrachloroethene	20.0	20.58		ug/Kg		103	70 - 130
Toluene	20.0	20.39		ug/Kg		102	70 - 130
1,2,3-Trichlorobenzene	20.0	20.62		ug/Kg		103	70 - 130
1,2,4-Trichlorobenzene	20.0	20.75		ug/Kg		104	70 - 130
1,3,5-Trichlorobenzene	20.0	19.68		ug/Kg		98	70 - 130
1,1,1-Trichloroethane	20.0	21.99		ug/Kg		110	70 - 130
1,1,2-Trichloroethane	20.0	20.37		ug/Kg		102	70 - 130
Trichloroethene	20.0	20.62		ug/Kg		103	70 - 130
Trichlorofluoromethane (Freon 11)	20.0	21.51		ug/Kg		108	70 - 130

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

Lab Sample ID: LCS 620-42770/1-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	20.16		ug/Kg		101	70 - 130
1,2,4-Trimethylbenzene	20.0	20.32		ug/Kg		102	70 - 130
1,3,5-Trimethylbenzene	20.0	20.33		ug/Kg		102	70 - 130
Vinyl chloride	20.0	21.14		ug/Kg		106	70 - 130
m,p-Xylene	20.0	19.83		ug/Kg		99	70 - 130
o-Xylene	20.0	19.85		ug/Kg		99	70 - 130
Tetrahydrofuran	20.0	16.73		ug/Kg		84	70 - 130
Ethyl ether	20.0	20.54		ug/Kg		103	70 - 130
Tert-amyl methyl ether	20.0	20.64		ug/Kg		103	70 - 130
Ethyl tert-butyl ether	20.0	20.57		ug/Kg		103	70 - 130
di-Isopropyl ether	20.0	19.91		ug/Kg		100	70 - 130
tert-Butanol	200	179.4		ug/Kg		90	70 - 130
1,4-Dioxane	200	181.8		ug/Kg		91	70 - 130
trans-1,4-Dichloro-2-butene	20.0	19.38	J	ug/Kg		97	70 - 130
Ethanol	400	379.9	J	ug/Kg		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 620-42770/2-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.0	21.95		ug/Kg		110	70 - 130	7	30
Acetone	20.0	21.15	J	ug/Kg		106	70 - 130	14	30
Acrylonitrile	20.0	18.45		ug/Kg		92	70 - 130	4	30
Benzene	20.0	21.14		ug/Kg		106	70 - 130	3	30
Bromobenzene	20.0	20.93		ug/Kg		105	70 - 130	2	30
Bromochloromethane	20.0	21.64		ug/Kg		108	70 - 130	2	30
Bromodichloromethane	20.0	21.76		ug/Kg		109	70 - 130	3	30
Bromoform	20.0	20.39		ug/Kg		102	70 - 130	4	30
Bromomethane	20.0	20.93		ug/Kg		105	70 - 130	2	30
2-Butanone (MEK)	20.0	20.81		ug/Kg		104	70 - 130	12	30
n-Butylbenzene	20.0	21.20		ug/Kg		106	70 - 130	13	30
sec-Butylbenzene	20.0	22.09		ug/Kg		110	70 - 130	11	30
tert-Butylbenzene	20.0	23.13		ug/Kg		116	70 - 130	8	30
Carbon disulfide	20.0	21.20		ug/Kg		106	70 - 130	4	30
Carbon tetrachloride	20.0	22.07		ug/Kg		110	70 - 130	4	30
Chlorobenzene	20.0	20.88		ug/Kg		104	70 - 130	5	30
Chloroethane	20.0	20.99		ug/Kg		105	70 - 130	3	30
Chloroform	20.0	21.73		ug/Kg		109	70 - 130	4	30
Chloromethane	20.0	20.76		ug/Kg		104	70 - 130	1	30
2-Chlorotoluene	20.0	21.03		ug/Kg		105	70 - 130	4	30
4-Chlorotoluene	20.0	20.98		ug/Kg		105	70 - 130	5	30

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

Lab Sample ID: LCSD 620-42770/2-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42770

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			20.0	20.29		ug/Kg		101	70 - 130	7	30
Dibromochloromethane			20.0	21.59		ug/Kg		108	70 - 130	4	30
1,2-Dibromoethane (EDB)			20.0	21.48		ug/Kg		107	70 - 130	4	30
Dibromomethane			20.0	21.38		ug/Kg		107	70 - 130	1	30
1,2-Dichlorobenzene			20.0	21.26		ug/Kg		106	70 - 130	7	30
1,3-Dichlorobenzene			20.0	21.43		ug/Kg		107	70 - 130	5	30
1,4-Dichlorobenzene			20.0	20.63		ug/Kg		103	70 - 130	5	30
Dichlorodifluoromethane (Freon 12)			20.0	22.76		ug/Kg		114	70 - 130	3	30
1,1-Dichloroethane			20.0	21.48		ug/Kg		107	70 - 130	4	30
1,2-Dichloroethane			20.0	21.96		ug/Kg		110	70 - 130	1	30
1,1-Dichloroethene			20.0	20.85		ug/Kg		104	70 - 130	2	30
cis-1,2-Dichloroethene			20.0	20.79		ug/Kg		104	70 - 130	2	30
trans-1,2-Dichloroethene			20.0	21.01		ug/Kg		105	70 - 130	4	30
1,2-Dichloropropane			20.0	20.95		ug/Kg		105	70 - 130	4	30
1,3-Dichloropropane			20.0	21.58		ug/Kg		108	70 - 130	4	30
2,2-Dichloropropane			20.0	22.13		ug/Kg		111	70 - 130	3	30
1,1-Dichloropropene			20.0	21.35		ug/Kg		107	70 - 130	5	30
cis-1,3-Dichloropropene			20.0	21.01		ug/Kg		105	70 - 130	4	30
trans-1,3-Dichloropropene			20.0	21.22		ug/Kg		106	70 - 130	2	30
Ethylbenzene			20.0	21.02		ug/Kg		105	70 - 130	6	30
Hexachlorobutadiene			20.0	22.71		ug/Kg		114	70 - 130	16	30
2-Hexanone (MBK)			20.0	19.60		ug/Kg		98	70 - 130	9	30
Isopropylbenzene			20.0	21.41		ug/Kg		107	70 - 130	7	30
4-Isopropyltoluene			20.0	21.41		ug/Kg		107	70 - 130	10	30
Methyl tert-butyl ether			20.0	21.85		ug/Kg		109	70 - 130	5	30
4-Methyl-2-pentanone (MIBK)			20.0	18.57		ug/Kg		93	70 - 130	6	30
Methylene Chloride			20.0	21.38		ug/Kg		107	70 - 130	4	30
Naphthalene			20.0	22.06		ug/Kg		110	70 - 130	10	30
N-Propylbenzene			20.0	21.20		ug/Kg		106	70 - 130	6	30
Styrene			20.0	20.57		ug/Kg		103	70 - 130	3	30
1,1,1,2-Tetrachloroethane			20.0	21.26		ug/Kg		106	70 - 130	5	30
1,1,2,2-Tetrachloroethane			20.0	19.83		ug/Kg		99	70 - 130	4	30
Tetrachloroethene			20.0	21.75		ug/Kg		109	70 - 130	5	30
Toluene			20.0	20.99		ug/Kg		105	70 - 130	3	30
1,2,3-Trichlorobenzene			20.0	22.94		ug/Kg		115	70 - 130	11	30
1,2,4-Trichlorobenzene			20.0	22.92		ug/Kg		115	70 - 130	10	30
1,3,5-Trichlorobenzene			20.0	22.13		ug/Kg		111	70 - 130	12	30
1,1,1-Trichloroethane			20.0	22.71		ug/Kg		114	70 - 130	3	30
1,1,2-Trichloroethane			20.0	21.28		ug/Kg		106	70 - 130	4	30
Trichloroethene			20.0	21.80		ug/Kg		109	70 - 130	6	30
Trichlorofluoromethane (Freon 11)			20.0	22.64		ug/Kg		113	70 - 130	5	30
1,2,3-Trichloropropane			20.0	20.83		ug/Kg		104	70 - 130	3	30
1,2,4-Trimethylbenzene			20.0	21.52		ug/Kg		108	70 - 130	6	30
1,3,5-Trimethylbenzene			20.0	21.65		ug/Kg		108	70 - 130	6	30
Vinyl chloride			20.0	21.68		ug/Kg		108	70 - 130	3	30
m,p-Xylene			20.0	21.00		ug/Kg		105	70 - 130	6	30
o-Xylene			20.0	20.94		ug/Kg		105	70 - 130	5	30

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

Lab Sample ID: LCSD 620-42770/2-A
Matrix: Solid
Analysis Batch: 42692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42770

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetrahydrofuran			20.0	19.34		ug/Kg		97	70 - 130	14	30
Ethyl ether			20.0	20.77		ug/Kg		104	70 - 130	1	30
Tert-amyl methyl ether			20.0	21.44		ug/Kg		107	70 - 130	4	30
Ethyl tert-butyl ether			20.0	21.53		ug/Kg		108	70 - 130	5	30
di-Isopropyl ether			20.0	20.82		ug/Kg		104	70 - 130	4	30
tert-Butanol			200	180.2		ug/Kg		90	70 - 130	0	30
1,4-Dioxane			200	193.0		ug/Kg		96	70 - 130	6	30
trans-1,4-Dichloro-2-butene			20.0	19.34	J	ug/Kg		97	70 - 130	0	30
Ethanol			400	384.4	J	ug/Kg		96	70 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND	*3	10.8	9.572		ug/Kg	☼	89	70 - 130
Acetone	ND	*3 F1 F2	10.8	ND	F1	ug/Kg	☼	-100	70 - 130
Acrylonitrile	ND	*3 F1	10.8	6.560	F1	ug/Kg	☼	61	70 - 130
Benzene	ND	*3 F1	10.8	4.513	F1	ug/Kg	☼	42	70 - 130
Bromobenzene	ND	*3 F1	10.8	2.981	F1	ug/Kg	☼	28	70 - 130
Bromochloromethane	ND	*3 F1	10.8	7.235	F1	ug/Kg	☼	67	70 - 130
Bromodichloromethane	ND	*3 F1	10.8	5.647	F1	ug/Kg	☼	52	70 - 130
Bromoform	ND	*3 F1	10.8	5.831	F1	ug/Kg	☼	54	70 - 130
Bromomethane	ND	*3 F1	10.8	9.638	F1	ug/Kg	☼	6	70 - 130
2-Butanone (MEK)	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	44	70 - 130
n-Butylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
sec-Butylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
tert-Butylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
Carbon disulfide	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	40	70 - 130
Carbon tetrachloride	ND	*3 F1	10.8	3.730	F1	ug/Kg	☼	35	70 - 130
Chlorobenzene	ND	*3 F1	10.8	2.861	F1	ug/Kg	☼	27	70 - 130
Chloroethane	ND	*3	10.8	9.970		ug/Kg	☼	93	70 - 130
Chloroform	ND	*3 F1	10.8	6.280	F1	ug/Kg	☼	58	70 - 130
Chloromethane	ND	*3	10.8	10.32		ug/Kg	☼	96	70 - 130
2-Chlorotoluene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
4-Chlorotoluene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
1,2-Dibromo-3-Chloropropane	ND	*3 F1	10.8	6.178	F1	ug/Kg	☼	57	70 - 130
Dibromochloromethane	ND	*3 F1	10.8	5.551	F1	ug/Kg	☼	52	70 - 130
1,2-Dibromoethane (EDB)	ND	*3 F1	10.8	5.986	F1	ug/Kg	☼	56	70 - 130
Dibromomethane	ND	*3 F1	10.8	6.641	F1	ug/Kg	☼	62	70 - 130
1,2-Dichlorobenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	24	70 - 130
1,3-Dichlorobenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	21	70 - 130

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

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
Dichlorodifluoromethane (Freon 12)	ND	*3 F1	10.8	14.82	F1	ug/Kg	☼	138	70 - 130
1,1-Dichloroethane	ND	*3 F1	10.8	6.909	F1	ug/Kg	☼	64	70 - 130
1,2-Dichloroethane	ND	*3 F1	10.8	7.658		ug/Kg	☼	71	70 - 130
1,1-Dichloroethene	ND	*3 F1	10.8	6.589	F1	ug/Kg	☼	61	70 - 130
cis-1,2-Dichloroethene	ND	*3 F1	10.8	5.562	F1	ug/Kg	☼	52	70 - 130
trans-1,2-Dichloroethene	ND	*3 F1	10.8	4.442	F1	ug/Kg	☼	41	70 - 130
1,2-Dichloropropane	ND	*3 F1	10.8	5.596	F1	ug/Kg	☼	52	70 - 130
1,3-Dichloropropane	ND	*3 F1	10.8	6.095	F1	ug/Kg	☼	57	70 - 130
2,2-Dichloropropane	ND	*3 F1	10.8	5.779	F1	ug/Kg	☼	54	70 - 130
1,1-Dichloropropene	ND	*3 F1	10.8	2.724	F1	ug/Kg	☼	25	70 - 130
cis-1,3-Dichloropropene	ND	*3 F1	10.8	4.541	F1	ug/Kg	☼	42	70 - 130
trans-1,3-Dichloropropene	ND	*3 F1	10.8	5.158	F1	ug/Kg	☼	48	70 - 130
Ethylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	19	70 - 130
Hexachlorobutadiene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
2-Hexanone (MBK)	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	33	70 - 130
Isopropylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
4-Isopropyltoluene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
Methyl tert-butyl ether	ND	*3	10.8	10.55		ug/Kg	☼	98	70 - 130
4-Methyl-2-pentanone (MIBK)	ND	*3 F1	10.8	6.272	F1	ug/Kg	☼	58	70 - 130
Methylene Chloride	ND	*3 F1	10.8	7.535		ug/Kg	☼	70	70 - 130
Naphthalene	ND	*3 F1	10.8	4.147	F1	ug/Kg	☼	38	70 - 130
N-Propylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
Styrene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	21	70 - 130
1,1,1,2-Tetrachloroethane	ND	*3 F1	10.8	4.215	F1	ug/Kg	☼	39	70 - 130
1,1,2,2-Tetrachloroethane	ND	*3 F1	10.8	6.312	F1	ug/Kg	☼	59	70 - 130
Tetrachloroethene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	18	70 - 130
Toluene	ND	*3 F1	10.8	3.134	F1	ug/Kg	☼	29	70 - 130
1,2,3-Trichlorobenzene	ND	*3 F1	10.8	3.492	F1	ug/Kg	☼	32	70 - 130
1,2,4-Trichlorobenzene	ND	*3 F1	10.8	3.160	F1	ug/Kg	☼	29	70 - 130
1,3,5-Trichlorobenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
1,1,1-Trichloroethane	ND	*3 F1	10.8	5.521	F1	ug/Kg	☼	51	70 - 130
1,1,2-Trichloroethane	ND	*3 F1	10.8	6.573	F1	ug/Kg	☼	61	70 - 130
Trichloroethene	ND	*3 F1	10.8	3.037	F1	ug/Kg	☼	28	70 - 130
Trichlorofluoromethane (Freon 11)	ND	*3	10.8	11.10		ug/Kg	☼	103	70 - 130
1,2,3-Trichloropropane	ND	*3 F1	10.8	6.787	F1	ug/Kg	☼	63	70 - 130
1,2,4-Trimethylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
1,3,5-Trimethylbenzene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
Vinyl chloride	ND	*3	10.8	9.942		ug/Kg	☼	92	70 - 130
m,p-Xylene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	0	70 - 130
o-Xylene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	20	70 - 130
Tetrahydrofuran	ND	*3	10.8	8.759		ug/Kg	☼	81	70 - 130
Ethyl ether	ND	*3	10.8	9.842		ug/Kg	☼	91	70 - 130
Tert-amyl methyl ether	ND	*3	10.8	9.017		ug/Kg	☼	84	70 - 130
Ethyl tert-butyl ether	ND	*3	10.8	9.364		ug/Kg	☼	87	70 - 130
di-Isopropyl ether	ND	*3	10.8	8.954		ug/Kg	☼	83	70 - 130
tert-Butanol	ND	*3	108	89.45		ug/Kg	☼	83	70 - 130

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

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	ND	*3	108	85.56		ug/Kg	☼	79	70 - 130
trans-1,4-Dichloro-2-butene	ND	*3 F1	10.8	ND	F1	ug/Kg	☼	46	70 - 130
Ethanol	ND	*3 F1	216	ND		ug/Kg	☼	76	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND	*3	12.4	11.24		ug/Kg	☼	90	70 - 130	16	30
Acetone	ND	*3 F1 F2	12.4	ND	F1 F2	ug/Kg	☼	39	70 - 130	79	30
Acrylonitrile	ND	*3 F1	12.4	8.682		ug/Kg	☼	70	70 - 130	28	30
Benzene	ND	*3 F1	12.4	4.235	F1	ug/Kg	☼	34	70 - 130	6	30
Bromobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	20	70 - 130	18	30
Bromochloromethane	ND	*3 F1	12.4	6.448	F1	ug/Kg	☼	52	70 - 130	11	30
Bromodichloromethane	ND	*3 F1	12.4	4.611	F1	ug/Kg	☼	37	70 - 130	20	30
Bromoform	ND	*3 F1	12.4	4.852	F1	ug/Kg	☼	39	70 - 130	18	30
Bromomethane	ND	*3 F1	12.4	10.93	F1	ug/Kg	☼	16	70 - 130	13	30
2-Butanone (MEK)	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	49	70 - 130	26	30
n-Butylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
sec-Butylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
tert-Butylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Carbon disulfide	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	37	70 - 130	8	30
Carbon tetrachloride	ND	*3 F1	12.4	4.109	F1	ug/Kg	☼	33	70 - 130	10	30
Chlorobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Chloroethane	ND	*3	12.4	9.999		ug/Kg	☼	80	70 - 130	0	30
Chloroform	ND	*3 F1	12.4	5.903	F1	ug/Kg	☼	47	70 - 130	6	30
Chloromethane	ND	*3	12.4	12.08		ug/Kg	☼	97	70 - 130	16	30
2-Chlorotoluene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
4-Chlorotoluene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,2-Dibromo-3-Chloropropane	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	48	70 - 130	4	30
Dibromochloromethane	ND	*3 F1	12.4	4.271	F1	ug/Kg	☼	34	70 - 130	26	30
1,2-Dibromoethane (EDB)	ND	*3 F1	12.4	4.509	F1	ug/Kg	☼	36	70 - 130	28	30
Dibromomethane	ND	*3 F1	12.4	5.281	F1	ug/Kg	☼	42	70 - 130	23	30
1,2-Dichlorobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,3-Dichlorobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,4-Dichlorobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Dichlorodifluoromethane (Freon 12)	ND	*3 F1	12.4	17.10	F1	ug/Kg	☼	137	70 - 130	14	30
1,1-Dichloroethane	ND	*3 F1	12.4	7.210	F1	ug/Kg	☼	58	70 - 130	4	30
1,2-Dichloroethane	ND	*3 F1	12.4	6.766	F1	ug/Kg	☼	54	70 - 130	12	30
1,1-Dichloroethene	ND	*3 F1	12.4	7.772	F1	ug/Kg	☼	62	70 - 130	16	30

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

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	ND	*3 F1	12.4	5.208	F1	ug/Kg	☼	42	70 - 130	7	30
trans-1,2-Dichloroethene	ND	*3 F1	12.4	4.417	F1	ug/Kg	☼	35	70 - 130	1	30
1,2-Dichloropropane	ND	*3 F1	12.4	4.862	F1	ug/Kg	☼	39	70 - 130	14	30
1,3-Dichloropropane	ND	*3 F1	12.4	4.658	F1	ug/Kg	☼	37	70 - 130	27	30
2,2-Dichloropropane	ND	*3 F1	12.4	6.522	F1	ug/Kg	☼	52	70 - 130	12	30
1,1-Dichloropropene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	24	70 - 130	8	30
cis-1,3-Dichloropropene	ND	*3 F1	12.4	3.763	F1	ug/Kg	☼	30	70 - 130	19	30
trans-1,3-Dichloropropene	ND	*3 F1	12.4	4.048	F1	ug/Kg	☼	33	70 - 130	24	30
Ethylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Hexachlorobutadiene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
2-Hexanone (MBK)	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	30	70 - 130	4	30
Isopropylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
4-Isopropyltoluene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Methyl tert-butyl ether	ND	*3	12.4	11.12		ug/Kg	☼	89	70 - 130	5	30
4-Methyl-2-pentanone (MIBK)	ND	*3 F1	12.4	6.426	F1	ug/Kg	☼	52	70 - 130	2	30
Methylene Chloride	ND	*3 F1	12.4	7.461	F1	ug/Kg	☼	60	70 - 130	1	30
Naphthalene	ND	*3 F1	12.4	4.402	F1	ug/Kg	☼	35	70 - 130	6	30
N-Propylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Styrene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,1,1,2-Tetrachloroethane	ND	*3 F1	12.4	3.254	F1	ug/Kg	☼	26	70 - 130	26	30
1,1,2,2-Tetrachloroethane	ND	*3 F1	12.4	5.374	F1	ug/Kg	☼	43	70 - 130	16	30
Tetrachloroethene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Toluene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	19	70 - 130	26	30
1,2,3-Trichlorobenzene	ND	*3 F1	12.4	3.811	F1	ug/Kg	☼	31	70 - 130	9	30
1,2,4-Trichlorobenzene	ND	*3 F1	12.4	3.308	F1	ug/Kg	☼	27	70 - 130	5	30
1,3,5-Trichlorobenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,1,1-Trichloroethane	ND	*3 F1	12.4	5.925	F1	ug/Kg	☼	48	70 - 130	7	30
1,1,2-Trichloroethane	ND	*3 F1	12.4	5.336	F1	ug/Kg	☼	43	70 - 130	21	30
Trichloroethene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	22	70 - 130	9	30
Trichlorofluoromethane (Freon 11)	ND	*3	12.4	12.82		ug/Kg	☼	103	70 - 130	14	30
1,2,3-Trichloropropane	ND	*3 F1	12.4	5.497	F1	ug/Kg	☼	44	70 - 130	21	30
1,2,4-Trimethylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,3,5-Trimethylbenzene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Vinyl chloride	ND	*3	12.4	11.91		ug/Kg	☼	96	70 - 130	18	30
m,p-Xylene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
o-Xylene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Tetrahydrofuran	ND	*3	12.4	10.65		ug/Kg	☼	86	70 - 130	19	30
Ethyl ether	ND	*3	12.4	10.01		ug/Kg	☼	80	70 - 130	2	30
Tert-amyl methyl ether	ND	*3	12.4	8.976		ug/Kg	☼	72	70 - 130	0	30
Ethyl tert-butyl ether	ND	*3	12.4	9.819		ug/Kg	☼	79	70 - 130	5	30
di-Isopropyl ether	ND	*3	12.4	9.122		ug/Kg	☼	73	70 - 130	2	30
tert-Butanol	ND	*3	124	97.44		ug/Kg	☼	78	70 - 130	9	30
1,4-Dioxane	ND	*3	124	98.37		ug/Kg	☼	79	70 - 130	14	30
trans-1,4-Dichloro-2-butene	ND	*3 F1	12.4	ND	F1	ug/Kg	☼	33	70 - 130	21	30
Ethanol	ND	*3 F1	249	ND	F1	ug/Kg	☼	54	70 - 130	19	30

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

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42770

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*
Dibromofluoromethane (Surr)	*106*		*70 - 130*

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		20.4	18.38		ug/Kg	☼	90	70 - 130
Acetone	ND		20.4	ND	F1	ug/Kg	☼	57	70 - 130
Acrylonitrile	ND		20.4	16.25		ug/Kg	☼	80	70 - 130
Benzene	ND		20.4	6.307	F1	ug/Kg	☼	31	70 - 130
Bromobenzene	ND		20.4	ND	F1	ug/Kg	☼	17	70 - 130
Bromochloromethane	ND		20.4	10.63	F1	ug/Kg	☼	52	70 - 130
Bromodichloromethane	ND		20.4	7.604	F1	ug/Kg	☼	37	70 - 130
Bromoform	ND		20.4	8.020	F1	ug/Kg	☼	39	70 - 130
Bromomethane	ND		20.4	19.04		ug/Kg	☼	93	70 - 130
2-Butanone (MEK)	ND		20.4	ND	F1	ug/Kg	☼	48	70 - 130
n-Butylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
sec-Butylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
tert-Butylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Carbon disulfide	ND		20.4	ND	F1	ug/Kg	☼	33	70 - 130
Carbon tetrachloride	ND		20.4	5.855	F1	ug/Kg	☼	29	70 - 130
Chlorobenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Chloroethane	ND		20.4	12.42	F1	ug/Kg	☼	61	70 - 130
Chloroform	ND		20.4	9.537	F1	ug/Kg	☼	47	70 - 130
Chloromethane	ND		20.4	20.99		ug/Kg	☼	103	70 - 130
2-Chlorotoluene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
4-Chlorotoluene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,2-Dibromo-3-Chloropropane	ND		20.4	10.94	F1	ug/Kg	☼	54	70 - 130
Dibromochloromethane	ND		20.4	7.033	F1	ug/Kg	☼	34	70 - 130
1,2-Dibromoethane (EDB)	ND		20.4	7.414	F1	ug/Kg	☼	36	70 - 130
Dibromomethane	ND		20.4	8.882	F1	ug/Kg	☼	44	70 - 130
1,2-Dichlorobenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,3-Dichlorobenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,4-Dichlorobenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Dichlorodifluoromethane (Freon 12)	ND		20.4	30.36	F1	ug/Kg	☼	149	70 - 130
1,1-Dichloroethane	ND		20.4	11.84	F1	ug/Kg	☼	58	70 - 130
1,2-Dichloroethane	ND		20.4	11.50	F1	ug/Kg	☼	56	70 - 130
1,1-Dichloroethene	ND		20.4	12.25	F1	ug/Kg	☼	60	70 - 130
cis-1,2-Dichloroethene	ND		20.4	8.468	F1	ug/Kg	☼	42	70 - 130
trans-1,2-Dichloroethene	ND		20.4	6.683	F1	ug/Kg	☼	33	70 - 130
1,2-Dichloropropane	ND		20.4	7.790	F1	ug/Kg	☼	38	70 - 130
1,3-Dichloropropane	ND		20.4	7.882	F1	ug/Kg	☼	39	70 - 130
2,2-Dichloropropane	ND		20.4	10.74	F1	ug/Kg	☼	53	70 - 130

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

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloropropene	ND		20.4	ND	F1	ug/Kg	☼	19	70 - 130
cis-1,3-Dichloropropene	ND		20.4	6.141	F1	ug/Kg	☼	30	70 - 130
trans-1,3-Dichloropropene	ND		20.4	6.664	F1	ug/Kg	☼	33	70 - 130
Ethylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Hexachlorobutadiene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
2-Hexanone (MBK)	ND		20.4	ND	F1	ug/Kg	☼	34	70 - 130
Isopropylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
4-Isopropyltoluene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Methyl tert-butyl ether	ND		20.4	20.74		ug/Kg	☼	102	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		20.4	11.64	F1	ug/Kg	☼	57	70 - 130
Methylene Chloride	ND		20.4	12.57	F1	ug/Kg	☼	10	70 - 130
Naphthalene	ND		20.4	7.397	F1	ug/Kg	☼	36	70 - 130
N-Propylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Styrene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,1,1,2-Tetrachloroethane	ND		20.4	ND	F1	ug/Kg	☼	23	70 - 130
1,1,2,2-Tetrachloroethane	ND		20.4	9.761	F1	ug/Kg	☼	48	70 - 130
Tetrachloroethene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Toluene	ND		20.4	ND	F1	ug/Kg	☼	18	70 - 130
1,2,3-Trichlorobenzene	ND		20.4	6.016	F1	ug/Kg	☼	29	70 - 130
1,2,4-Trichlorobenzene	ND		20.4	5.333	F1	ug/Kg	☼	26	70 - 130
1,3,5-Trichlorobenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,1,1-Trichloroethane	ND		20.4	8.864	F1	ug/Kg	☼	43	70 - 130
1,1,2-Trichloroethane	ND		20.4	8.844	F1	ug/Kg	☼	43	70 - 130
Trichloroethene	ND		20.4	ND	F1	ug/Kg	☼	19	70 - 130
Trichlorofluoromethane (Freon 11)	ND		20.4	20.80		ug/Kg	☼	102	70 - 130
1,2,3-Trichloropropane	ND		20.4	9.793	F1	ug/Kg	☼	48	70 - 130
1,2,4-Trimethylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
1,3,5-Trimethylbenzene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Vinyl chloride	ND		20.4	20.31		ug/Kg	☼	100	70 - 130
m,p-Xylene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
o-Xylene	ND		20.4	ND	F1	ug/Kg	☼	0	70 - 130
Tetrahydrofuran	ND		20.4	19.25		ug/Kg	☼	94	70 - 130
Ethyl ether	ND		20.4	18.87		ug/Kg	☼	93	70 - 130
Tert-amyl methyl ether	ND		20.4	16.67		ug/Kg	☼	82	70 - 130
Ethyl tert-butyl ether	ND		20.4	18.00		ug/Kg	☼	88	70 - 130
di-Isopropyl ether	ND		20.4	16.81		ug/Kg	☼	82	70 - 130
tert-Butanol	ND		204	172.6		ug/Kg	☼	85	70 - 130
1,4-Dioxane	ND		204	179.8		ug/Kg	☼	88	70 - 130
trans-1,4-Dichloro-2-butene	ND		20.4	ND	F1	ug/Kg	☼	33	70 - 130
Ethanol	ND		408	ND		ug/Kg	☼	80	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*
Dibromofluoromethane (Surr)	*106*		*70 - 130*

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

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		16.9	15.00		ug/Kg	☼	89	70 - 130	20	30
Acetone	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Acrylonitrile	ND		16.9	12.99		ug/Kg	☼	77	70 - 130	22	30
Benzene	ND		16.9	6.310	F1	ug/Kg	☼	37	70 - 130	0	30
Bromobenzene	ND		16.9	ND	F1	ug/Kg	☼	24	70 - 130	15	30
Bromochloromethane	ND		16.9	10.49	F1	ug/Kg	☼	62	70 - 130	1	30
Bromodichloromethane	ND		16.9	8.010	F1	ug/Kg	☼	47	70 - 130	5	30
Bromoform	ND		16.9	8.126	F1	ug/Kg	☼	48	70 - 130	1	30
Bromomethane	ND		16.9	15.35		ug/Kg	☼	91	70 - 130	21	30
2-Butanone (MEK)	ND		16.9	ND	F1 F2	ug/Kg	☼	42	70 - 130	32	30
n-Butylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
sec-Butylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
tert-Butylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Carbon disulfide	ND		16.9	ND	F1	ug/Kg	☼	38	70 - 130	5	30
Carbon tetrachloride	ND		16.9	5.270	F1	ug/Kg	☼	31	70 - 130	11	30
Chlorobenzene	ND		16.9	ND	F1	ug/Kg	☼	22	70 - 130	NC	30
Chloroethane	ND		16.9	15.60		ug/Kg	☼	92	70 - 130	23	30
Chloroform	ND		16.9	9.076	F1	ug/Kg	☼	54	70 - 130	5	30
Chloromethane	ND		16.9	16.26		ug/Kg	☼	96	70 - 130	25	30
2-Chlorotoluene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
4-Chlorotoluene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,2-Dibromo-3-Chloropropane	ND		16.9	9.795	F1	ug/Kg	☼	58	70 - 130	11	30
Dibromochloromethane	ND		16.9	7.780	F1	ug/Kg	☼	46	70 - 130	10	30
1,2-Dibromoethane (EDB)	ND		16.9	8.495	F1	ug/Kg	☼	50	70 - 130	14	30
Dibromomethane	ND		16.9	9.210	F1	ug/Kg	☼	54	70 - 130	4	30
1,2-Dichlorobenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,3-Dichlorobenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,4-Dichlorobenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Dichlorodifluoromethane (Freon 12)	ND		16.9	23.18	F1	ug/Kg	☼	137	70 - 130	27	30
1,1-Dichloroethane	ND		16.9	10.80	F1	ug/Kg	☼	64	70 - 130	9	30
1,2-Dichloroethane	ND		16.9	10.90	F1	ug/Kg	☼	64	70 - 130	5	30
1,1-Dichloroethene	ND		16.9	10.26	F1	ug/Kg	☼	61	70 - 130	18	30
cis-1,2-Dichloroethene	ND		16.9	8.259	F1	ug/Kg	☼	49	70 - 130	3	30
trans-1,2-Dichloroethene	ND		16.9	6.170	F1	ug/Kg	☼	36	70 - 130	8	30
1,2-Dichloropropane	ND		16.9	7.944	F1	ug/Kg	☼	47	70 - 130	2	30
1,3-Dichloropropane	ND		16.9	8.575	F1	ug/Kg	☼	51	70 - 130	8	30
2,2-Dichloropropane	ND		16.9	9.143	F1	ug/Kg	☼	54	70 - 130	16	30
1,1-Dichloropropene	ND		16.9	ND	F1	ug/Kg	☼	23	70 - 130	3	30
cis-1,3-Dichloropropene	ND		16.9	6.540	F1	ug/Kg	☼	39	70 - 130	6	30
trans-1,3-Dichloropropene	ND		16.9	7.281	F1	ug/Kg	☼	43	70 - 130	9	30
Ethylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Hexachlorobutadiene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
2-Hexanone (MBK)	ND		16.9	ND	F1 F2	ug/Kg	☼	30	70 - 130	32	30
Isopropylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
4-Isopropyltoluene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Methyl tert-butyl ether	ND		16.9	16.81		ug/Kg	☼	99	70 - 130	21	30
4-Methyl-2-pentanone (MIBK)	ND		16.9	9.510	F1	ug/Kg	☼	56	70 - 130	20	30

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

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methylene Chloride	ND		16.9	11.60	F1	ug/Kg	☼	6	70 - 130	8	30
Naphthalene	ND		16.9	6.610	F1	ug/Kg	☼	39	70 - 130	11	30
N-Propylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Styrene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,1,1,2-Tetrachloroethane	ND		16.9	5.764	F1	ug/Kg	☼	34	70 - 130	20	30
1,1,2,2-Tetrachloroethane	ND		16.9	9.368	F1	ug/Kg	☼	55	70 - 130	4	30
Tetrachloroethene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Toluene	ND		16.9	ND	F1	ug/Kg	☼	25	70 - 130	12	30
1,2,3-Trichlorobenzene	ND		16.9	5.275	F1	ug/Kg	☼	31	70 - 130	13	30
1,2,4-Trichlorobenzene	ND		16.9	4.427	F1	ug/Kg	☼	26	70 - 130	19	30
1,3,5-Trichlorobenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,1,1-Trichloroethane	ND		16.9	7.990	F1	ug/Kg	☼	47	70 - 130	10	30
1,1,2-Trichloroethane	ND		16.9	9.193	F1	ug/Kg	☼	54	70 - 130	4	30
Trichloroethene	ND		16.9	4.316	F1	ug/Kg	☼	25	70 - 130	12	30
Trichlorofluoromethane (Freon 11)	ND		16.9	16.60		ug/Kg	☼	98	70 - 130	22	30
1,2,3-Trichloropropane	ND		16.9	8.916	F1	ug/Kg	☼	53	70 - 130	9	30
1,2,4-Trimethylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
1,3,5-Trimethylbenzene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Vinyl chloride	ND		16.9	15.68		ug/Kg	☼	93	70 - 130	26	30
m,p-Xylene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
o-Xylene	ND		16.9	ND	F1	ug/Kg	☼	0	70 - 130	NC	30
Tetrahydrofuran	ND		16.9	14.61		ug/Kg	☼	86	70 - 130	27	30
Ethyl ether	ND		16.9	15.58		ug/Kg	☼	92	70 - 130	19	30
Tert-amyl methyl ether	ND		16.9	13.79		ug/Kg	☼	81	70 - 130	19	30
Ethyl tert-butyl ether	ND		16.9	14.81		ug/Kg	☼	87	70 - 130	19	30
di-Isopropyl ether	ND		16.9	13.70		ug/Kg	☼	81	70 - 130	20	30
tert-Butanol	ND		169	154.0		ug/Kg	☼	91	70 - 130	11	30
1,4-Dioxane	ND		169	152.9		ug/Kg	☼	90	70 - 130	16	30
trans-1,4-Dichloro-2-butene	ND		16.9	ND	F1	ug/Kg	☼	42	70 - 130	4	30
Ethanol	ND		339	ND		ug/Kg	☼	91	70 - 130	7	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		13.7	15.88		ug/Kg	☼	116	70 - 130
Acetone	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
Acrylonitrile	ND		13.7	11.15		ug/Kg	☼	81	70 - 130
Benzene	ND		13.7	8.172	F1	ug/Kg	☼	60	70 - 130
Bromobenzene	ND		13.7	4.113	F1	ug/Kg	☼	30	70 - 130

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

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromochloromethane	ND		13.7	10.25		ug/Kg	☼	75	70 - 130
Bromodichloromethane	ND		13.7	8.180	F1	ug/Kg	☼	60	70 - 130
Bromoform	ND		13.7	6.572	F1	ug/Kg	☼	48	70 - 130
Bromomethane	ND		13.7	15.34		ug/Kg	☼	112	70 - 130
2-Butanone (MEK)	ND		13.7	ND	F1	ug/Kg	☼	41	70 - 130
n-Butylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
sec-Butylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
tert-Butylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
Carbon disulfide	ND		13.7	10.04		ug/Kg	☼	73	70 - 130
Carbon tetrachloride	ND		13.7	8.974	F1	ug/Kg	☼	66	70 - 130
Chlorobenzene	ND		13.7	3.998	F1	ug/Kg	☼	29	70 - 130
Chloroethane	ND		13.7	15.25		ug/Kg	☼	111	70 - 130
Chloroform	ND		13.7	10.31		ug/Kg	☼	75	70 - 130
Chloromethane	ND		13.7	15.35		ug/Kg	☼	112	70 - 130
2-Chlorotoluene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
4-Chlorotoluene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
1,2-Dibromo-3-Chloropropane	ND		13.7	7.579	F1	ug/Kg	☼	55	70 - 130
Dibromochloromethane	ND		13.7	6.753	F1	ug/Kg	☼	49	70 - 130
1,2-Dibromoethane (EDB)	ND		13.7	6.794	F1	ug/Kg	☼	50	70 - 130
Dibromomethane	ND		13.7	8.097	F1	ug/Kg	☼	59	70 - 130
1,2-Dichlorobenzene	ND		13.7	3.737	F1	ug/Kg	☼	27	70 - 130
1,3-Dichlorobenzene	ND		13.7	ND	F1	ug/Kg	☼	25	70 - 130
1,4-Dichlorobenzene	ND		13.7	ND	F1	ug/Kg	☼	24	70 - 130
Dichlorodifluoromethane (Freon 12)	ND		13.7	20.04	F1	ug/Kg	☼	146	70 - 130
1,1-Dichloroethane	ND		13.7	12.01		ug/Kg	☼	88	70 - 130
1,2-Dichloroethane	ND		13.7	10.47		ug/Kg	☼	77	70 - 130
1,1-Dichloroethene	ND		13.7	12.99		ug/Kg	☼	95	70 - 130
cis-1,2-Dichloroethene	ND		13.7	9.665		ug/Kg	☼	71	70 - 130
trans-1,2-Dichloroethene	ND		13.7	8.709	F1	ug/Kg	☼	64	70 - 130
1,2-Dichloropropane	ND		13.7	8.489	F1	ug/Kg	☼	62	70 - 130
1,3-Dichloropropane	ND		13.7	7.371	F1	ug/Kg	☼	54	70 - 130
2,2-Dichloropropane	ND		13.7	11.91		ug/Kg	☼	87	70 - 130
1,1-Dichloropropene	ND		13.7	6.368	F1	ug/Kg	☼	47	70 - 130
cis-1,3-Dichloropropene	ND		13.7	6.164	F1	ug/Kg	☼	45	70 - 130
trans-1,3-Dichloropropene	ND		13.7	6.329	F1	ug/Kg	☼	46	70 - 130
Ethylbenzene	ND		13.7	ND	F1	ug/Kg	☼	22	70 - 130
Hexachlorobutadiene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
2-Hexanone (MBK)	ND		13.7	ND	F1	ug/Kg	☼	27	70 - 130
Isopropylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
4-Isopropyltoluene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
Methyl tert-butyl ether	ND		13.7	13.79		ug/Kg	☼	101	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		13.7	7.507	F1	ug/Kg	☼	55	70 - 130
Methylene Chloride	ND		13.7	11.60		ug/Kg	☼	85	70 - 130
Naphthalene	ND		13.7	5.976	F1	ug/Kg	☼	44	70 - 130
N-Propylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
Styrene	ND		13.7	ND	F1	ug/Kg	☼	24	70 - 130
1,1,1,2-Tetrachloroethane	ND		13.7	5.479	F1	ug/Kg	☼	40	70 - 130
1,1,2,2-Tetrachloroethane	ND		13.7	7.040	F1	ug/Kg	☼	51	70 - 130

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

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrachloroethene	ND		13.7	ND	F1	ug/Kg	☼	21	70 - 130
Toluene	ND		13.7	4.799	F1	ug/Kg	☼	35	70 - 130
1,2,3-Trichlorobenzene	ND		13.7	5.440	F1	ug/Kg	☼	40	70 - 130
1,2,4-Trichlorobenzene	ND		13.7	4.604	F1	ug/Kg	☼	34	70 - 130
1,3,5-Trichlorobenzene	ND		13.7	3.629	F1	ug/Kg	☼	27	70 - 130
1,1,1-Trichloroethane	ND		13.7	10.99		ug/Kg	☼	80	70 - 130
1,1,2-Trichloroethane	ND		13.7	7.905	F1	ug/Kg	☼	58	70 - 130
Trichloroethene	ND		13.7	5.668	F1	ug/Kg	☼	41	70 - 130
Trichlorofluoromethane (Freon 11)	ND		13.7	17.80		ug/Kg	☼	130	70 - 130
1,2,3-Trichloropropane	ND		13.7	7.374	F1	ug/Kg	☼	54	70 - 130
1,2,4-Trimethylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
1,3,5-Trimethylbenzene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
Vinyl chloride	ND		13.7	15.76		ug/Kg	☼	115	70 - 130
m,p-Xylene	ND		13.7	ND	F1	ug/Kg	☼	0	70 - 130
o-Xylene	ND		13.7	ND	F1	ug/Kg	☼	22	70 - 130
Tetrahydrofuran	ND		13.7	11.16		ug/Kg	☼	82	70 - 130
Ethyl ether	ND		13.7	13.34		ug/Kg	☼	98	70 - 130
Tert-amyl methyl ether	ND		13.7	12.03		ug/Kg	☼	88	70 - 130
Ethyl tert-butyl ether	ND		13.7	12.96		ug/Kg	☼	95	70 - 130
di-Isopropyl ether	ND		13.7	12.45		ug/Kg	☼	91	70 - 130
tert-Butanol	ND		137	113.5		ug/Kg	☼	83	70 - 130
1,4-Dioxane	ND		137	111.8		ug/Kg	☼	82	70 - 130
trans-1,4-Dichloro-2-butene	ND		13.7	ND	F1	ug/Kg	☼	39	70 - 130
Ethanol	ND		274	ND		ug/Kg	☼	99	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		23.0	31.66	F1 F2	ug/Kg	☼	138	70 - 130	66	30
Acetone	ND		23.0	ND		ug/Kg	☼	130	70 - 130	NC	30
Acrylonitrile	ND		23.0	28.09	F2	ug/Kg	☼	122	70 - 130	86	30
Benzene	ND		23.0	29.93	F2	ug/Kg	☼	130	70 - 130	114	30
Bromobenzene	ND		23.0	28.08	F2	ug/Kg	☼	122	70 - 130	149	30
Bromochloromethane	ND		23.0	30.55	F1 F2	ug/Kg	☼	133	70 - 130	100	30
Bromodichloromethane	ND		23.0	28.59	F2	ug/Kg	☼	124	70 - 130	111	30
Bromoform	ND		23.0	25.43	F2	ug/Kg	☼	111	70 - 130	118	30
Bromomethane	ND		23.0	32.13	F1 F2	ug/Kg	☼	140	70 - 130	71	30
2-Butanone (MEK)	ND		23.0	28.19	F2	ug/Kg	☼	123	70 - 130	133	30
n-Butylbenzene	ND		23.0	30.36	F1	ug/Kg	☼	132	70 - 130	NC	30

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

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
sec-Butylbenzene	ND		23.0	29.51		ug/Kg	☼	128	70 - 130	NC	30
tert-Butylbenzene	ND		23.0	29.99		ug/Kg	☼	130	70 - 130	NC	30
Carbon disulfide	ND		23.0	32.02	F1 F2	ug/Kg	☼	139	70 - 130	105	30
Carbon tetrachloride	ND		23.0	29.54	F2	ug/Kg	☼	128	70 - 130	107	30
Chlorobenzene	ND		23.0	28.44	F2	ug/Kg	☼	124	70 - 130	151	30
Chloroethane	ND		23.0	30.56	F1 F2	ug/Kg	☼	133	70 - 130	67	30
Chloroform	ND		23.0	28.70	F2	ug/Kg	☼	125	70 - 130	94	30
Chloromethane	ND		23.0	31.73	F1 F2	ug/Kg	☼	138	70 - 130	70	30
2-Chlorotoluene	ND		23.0	28.21		ug/Kg	☼	123	70 - 130	NC	30
4-Chlorotoluene	ND		23.0	28.47		ug/Kg	☼	124	70 - 130	NC	30
1,2-Dibromo-3-Chloropropane	ND		23.0	24.10	F2	ug/Kg	☼	105	70 - 130	104	30
Dibromochloromethane	ND		23.0	27.77	F2	ug/Kg	☼	121	70 - 130	122	30
1,2-Dibromoethane (EDB)	ND		23.0	27.97	F2	ug/Kg	☼	122	70 - 130	122	30
Dibromomethane	ND		23.0	28.53	F2	ug/Kg	☼	124	70 - 130	112	30
1,2-Dichlorobenzene	ND		23.0	27.92	F2	ug/Kg	☼	121	70 - 130	153	30
1,3-Dichlorobenzene	ND		23.0	28.11	F2	ug/Kg	☼	122	70 - 130	157	30
1,4-Dichlorobenzene	ND		23.0	28.46	F2	ug/Kg	☼	124	70 - 130	158	30
Dichlorodifluoromethane (Freon 12)	ND		23.0	30.01	F2	ug/Kg	☼	130	70 - 130	40	30
1,1-Dichloroethane	ND		23.0	30.41	F1 F2	ug/Kg	☼	132	70 - 130	87	30
1,2-Dichloroethane	ND		23.0	28.49	F2	ug/Kg	☼	124	70 - 130	93	30
1,1-Dichloroethene	ND		23.0	31.57	F1 F2	ug/Kg	☼	137	70 - 130	83	30
cis-1,2-Dichloroethene	ND		23.0	30.45	F1 F2	ug/Kg	☼	132	70 - 130	104	30
trans-1,2-Dichloroethene	ND		23.0	30.39	F1 F2	ug/Kg	☼	132	70 - 130	111	30
1,2-Dichloropropane	ND		23.0	29.25	F2	ug/Kg	☼	127	70 - 130	110	30
1,3-Dichloropropane	ND		23.0	28.96	F2	ug/Kg	☼	126	70 - 130	119	30
2,2-Dichloropropane	ND		23.0	30.30	F1 F2	ug/Kg	☼	132	70 - 130	87	30
1,1-Dichloropropene	ND		23.0	30.06	F1 F2	ug/Kg	☼	131	70 - 130	130	30
cis-1,3-Dichloropropene	ND		23.0	28.63	F2	ug/Kg	☼	124	70 - 130	129	30
trans-1,3-Dichloropropene	ND		23.0	28.49	F2	ug/Kg	☼	124	70 - 130	127	30
Ethylbenzene	ND		23.0	28.47	F2	ug/Kg	☼	124	70 - 130	162	30
Hexachlorobutadiene	ND		23.0	31.57	F1	ug/Kg	☼	137	70 - 130	NC	30
2-Hexanone (MBK)	ND		23.0	25.23	F2	ug/Kg	☼	110	70 - 130	149	30
Isopropylbenzene	ND		23.0	29.19		ug/Kg	☼	127	70 - 130	NC	30
4-Isopropyltoluene	ND		23.0	30.28	F1	ug/Kg	☼	132	70 - 130	NC	30
Methyl tert-butyl ether	ND		23.0	30.33	F1 F2	ug/Kg	☼	132	70 - 130	75	30
4-Methyl-2-pentanone (MIBK)	ND		23.0	25.34	F2	ug/Kg	☼	110	70 - 130	109	30
Methylene Chloride	ND		23.0	30.15	F1 F2	ug/Kg	☼	131	70 - 130	89	30
Naphthalene	ND		23.0	25.35	F2	ug/Kg	☼	110	70 - 130	124	30
N-Propylbenzene	ND		23.0	29.29		ug/Kg	☼	127	70 - 130	NC	30
Styrene	ND		23.0	29.17	F2	ug/Kg	☼	127	70 - 130	160	30
1,1,1,2-Tetrachloroethane	ND		23.0	27.92	F2	ug/Kg	☼	121	70 - 130	134	30
1,1,2,2-Tetrachloroethane	ND		23.0	26.45	F2	ug/Kg	☼	115	70 - 130	116	30
Tetrachloroethene	ND		23.0	30.19	F1 F2	ug/Kg	☼	131	70 - 130	165	30
Toluene	ND		23.0	29.37	F2	ug/Kg	☼	128	70 - 130	144	30
1,2,3-Trichlorobenzene	ND		23.0	25.98	F2	ug/Kg	☼	113	70 - 130	131	30
1,2,4-Trichlorobenzene	ND		23.0	28.29	F2	ug/Kg	☼	123	70 - 130	144	30
1,3,5-Trichlorobenzene	ND		23.0	29.62	F2	ug/Kg	☼	129	70 - 130	156	30
1,1,1-Trichloroethane	ND		23.0	29.50	F2	ug/Kg	☼	128	70 - 130	91	30

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

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42770

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichloroethane	ND		23.0	27.95	F2	ug/Kg	☼	122	70 - 130	112	30
Trichloroethene	ND		23.0	29.95	F2	ug/Kg	☼	130	70 - 130	136	30
Trichlorofluoromethane (Freon 11)	ND		23.0	31.36	F1 F2	ug/Kg	☼	136	70 - 130	55	30
1,2,3-Trichloropropane	ND		23.0	25.52	F2	ug/Kg	☼	111	70 - 130	110	30
1,2,4-Trimethylbenzene	ND		23.0	29.21		ug/Kg	☼	127	70 - 130	NC	30
1,3,5-Trimethylbenzene	ND		23.0	29.19		ug/Kg	☼	127	70 - 130	NC	30
Vinyl chloride	ND		23.0	32.62	F1 F2	ug/Kg	☼	142	70 - 130	70	30
m,p-Xylene	ND		23.0	28.86		ug/Kg	☼	125	70 - 130	NC	30
o-Xylene	ND		23.0	28.67	F2	ug/Kg	☼	125	70 - 130	162	30
Tetrahydrofuran	ND		23.0	27.85	F2	ug/Kg	☼	121	70 - 130	86	30
Ethyl ether	ND		23.0	31.21	F1 F2	ug/Kg	☼	136	70 - 130	80	30
Tert-amyl methyl ether	ND		23.0	29.73	F2	ug/Kg	☼	129	70 - 130	85	30
Ethyl tert-butyl ether	ND		23.0	30.10	F1 F2	ug/Kg	☼	131	70 - 130	80	30
di-Isopropyl ether	ND		23.0	30.10	F1 F2	ug/Kg	☼	131	70 - 130	83	30
tert-Butanol	ND		230	254.1	F2	ug/Kg	☼	110	70 - 130	77	30
1,4-Dioxane	ND		230	230.5	F2	ug/Kg	☼	100	70 - 130	69	30
trans-1,4-Dichloro-2-butene	ND		23.0	ND	F2	ug/Kg	☼	105	70 - 130	128	30
Ethanol	ND		460	ND	F2	ug/Kg	☼	114	70 - 130	64	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*

Lab Sample ID: LCS 620-42825/1-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42825

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	20.91		ug/Kg		105	70 - 130		
Acetone			20.0	23.16	J	ug/Kg		116	70 - 130		
Acrylonitrile			20.0	21.44		ug/Kg		107	70 - 130		
Benzene			20.0	20.95		ug/Kg		105	70 - 130		
Bromobenzene			20.0	21.44		ug/Kg		107	70 - 130		
Bromochloromethane			20.0	22.68		ug/Kg		113	70 - 130		
Bromodichloromethane			20.0	22.80		ug/Kg		114	70 - 130		
Bromoform			20.0	22.05		ug/Kg		110	70 - 130		
Bromomethane			20.0	21.98		ug/Kg		110	70 - 130		
2-Butanone (MEK)			20.0	23.14		ug/Kg		116	70 - 130		
n-Butylbenzene			20.0	19.10		ug/Kg		96	70 - 130		
sec-Butylbenzene			20.0	20.92		ug/Kg		105	70 - 130		
tert-Butylbenzene			20.0	23.09		ug/Kg		115	70 - 130		
Carbon disulfide			20.0	21.35		ug/Kg		107	70 - 130		
Carbon tetrachloride			20.0	22.67		ug/Kg		113	70 - 130		
Chlorobenzene			20.0	20.58		ug/Kg		103	70 - 130		
Chloroethane			20.0	21.60		ug/Kg		108	70 - 130		

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

Lab Sample ID: LCS 620-42825/1-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroform	20.0	22.40		ug/Kg		112	70 - 130
Chloromethane	20.0	21.07		ug/Kg		105	70 - 130
2-Chlorotoluene	20.0	20.72		ug/Kg		104	70 - 130
4-Chlorotoluene	20.0	20.81		ug/Kg		104	70 - 130
1,2-Dibromo-3-Chloropropane	20.0	20.69		ug/Kg		103	70 - 130
Dibromochloromethane	20.0	23.11		ug/Kg		116	70 - 130
1,2-Dibromoethane (EDB)	20.0	22.91		ug/Kg		115	70 - 130
Dibromomethane	20.0	22.88		ug/Kg		114	70 - 130
1,2-Dichlorobenzene	20.0	20.72		ug/Kg		104	70 - 130
1,3-Dichlorobenzene	20.0	21.33		ug/Kg		107	70 - 130
1,4-Dichlorobenzene	20.0	20.22		ug/Kg		101	70 - 130
Dichlorodifluoromethane (Freon 12)	20.0	21.42		ug/Kg		107	70 - 130
1,1-Dichloroethane	20.0	21.62		ug/Kg		108	70 - 130
1,2-Dichloroethane	20.0	23.19		ug/Kg		116	70 - 130
1,1-Dichloroethene	20.0	21.14		ug/Kg		106	70 - 130
cis-1,2-Dichloroethene	20.0	20.72		ug/Kg		104	70 - 130
trans-1,2-Dichloroethene	20.0	20.56		ug/Kg		103	70 - 130
1,2-Dichloropropane	20.0	20.98		ug/Kg		105	70 - 130
1,3-Dichloropropane	20.0	22.67		ug/Kg		113	70 - 130
2,2-Dichloropropane	20.0	22.32		ug/Kg		112	70 - 130
1,1-Dichloropropene	20.0	21.06		ug/Kg		105	70 - 130
cis-1,3-Dichloropropene	20.0	21.21		ug/Kg		106	70 - 130
trans-1,3-Dichloropropene	20.0	22.58		ug/Kg		113	70 - 130
Ethylbenzene	20.0	20.26		ug/Kg		101	70 - 130
Hexachlorobutadiene	20.0	22.01		ug/Kg		110	70 - 130
2-Hexanone (MBK)	20.0	20.95		ug/Kg		105	70 - 130
Isopropylbenzene	20.0	20.61		ug/Kg		103	70 - 130
4-Isopropyltoluene	20.0	19.72		ug/Kg		99	70 - 130
Methyl tert-butyl ether	20.0	22.63		ug/Kg		113	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	20.98		ug/Kg		105	70 - 130
Methylene Chloride	20.0	23.57		ug/Kg		118	70 - 130
Naphthalene	20.0	21.31		ug/Kg		107	70 - 130
N-Propylbenzene	20.0	20.51		ug/Kg		103	70 - 130
Styrene	20.0	20.62		ug/Kg		103	70 - 130
1,1,1,2-Tetrachloroethane	20.0	21.37		ug/Kg		107	70 - 130
1,1,2,2-Tetrachloroethane	20.0	20.97		ug/Kg		105	70 - 130
Tetrachloroethene	20.0	21.31		ug/Kg		107	70 - 130
Toluene	20.0	21.08		ug/Kg		105	70 - 130
1,2,3-Trichlorobenzene	20.0	22.63		ug/Kg		113	70 - 130
1,2,4-Trichlorobenzene	20.0	21.81		ug/Kg		109	70 - 130
1,3,5-Trichlorobenzene	20.0	20.70		ug/Kg		103	70 - 130
1,1,1-Trichloroethane	20.0	23.18		ug/Kg		116	70 - 130
1,1,2-Trichloroethane	20.0	22.18		ug/Kg		111	70 - 130
Trichloroethene	20.0	22.21		ug/Kg		111	70 - 130
Trichlorofluoromethane (Freon 11)	20.0	22.39		ug/Kg		112	70 - 130
1,2,3-Trichloropropane	20.0	22.65		ug/Kg		113	70 - 130
1,2,4-Trimethylbenzene	20.0	21.31		ug/Kg		107	70 - 130

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

Lab Sample ID: LCS 620-42825/1-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42825

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,3,5-Trimethylbenzene			20.0	21.20		ug/Kg		106	70 - 130		
Vinyl chloride			20.0	21.39		ug/Kg		107	70 - 130		
m,p-Xylene			20.0	20.24		ug/Kg		101	70 - 130		
o-Xylene			20.0	20.30		ug/Kg		102	70 - 130		
Tetrahydrofuran			20.0	22.05		ug/Kg		110	70 - 130		
Ethyl ether			20.0	21.05		ug/Kg		105	70 - 130		
Tert-amyl methyl ether			20.0	21.83		ug/Kg		109	70 - 130		
Ethyl tert-butyl ether			20.0	21.40		ug/Kg		107	70 - 130		
di-Isopropyl ether			20.0	20.31		ug/Kg		102	70 - 130		
tert-Butanol			200	213.6		ug/Kg		107	70 - 130		
1,4-Dioxane			200	188.2		ug/Kg		94	70 - 130		
trans-1,4-Dichloro-2-butene			20.0	22.53	J	ug/Kg		113	70 - 130		
Ethanol			400	411.2	J	ug/Kg		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 130*
Dibromofluoromethane (Surr)	*109*		*70 - 130*

Lab Sample ID: LCSD 620-42825/2-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42825

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	21.52		ug/Kg		108	70 - 130	3	30
Acetone			20.0	21.71	J	ug/Kg		109	70 - 130	6	30
Acrylonitrile			20.0	20.88		ug/Kg		104	70 - 130	3	30
Benzene			20.0	20.63		ug/Kg		103	70 - 130	2	30
Bromobenzene			20.0	21.80		ug/Kg		109	70 - 130	2	30
Bromochloromethane			20.0	22.59		ug/Kg		113	70 - 130	0	30
Bromodichloromethane			20.0	22.30		ug/Kg		111	70 - 130	2	30
Bromoform			20.0	21.17		ug/Kg		106	70 - 130	4	30
Bromomethane			20.0	21.66		ug/Kg		108	70 - 130	1	30
2-Butanone (MEK)			20.0	22.09		ug/Kg		110	70 - 130	5	30
n-Butylbenzene			20.0	20.59		ug/Kg		103	70 - 130	7	30
sec-Butylbenzene			20.0	22.31		ug/Kg		112	70 - 130	6	30
tert-Butylbenzene			20.0	23.79		ug/Kg		119	70 - 130	3	30
Carbon disulfide			20.0	21.08		ug/Kg		105	70 - 130	1	30
Carbon tetrachloride			20.0	22.05		ug/Kg		110	70 - 130	3	30
Chlorobenzene			20.0	20.70		ug/Kg		104	70 - 130	1	30
Chloroethane			20.0	21.03		ug/Kg		105	70 - 130	3	30
Chloroform			20.0	22.74		ug/Kg		114	70 - 130	1	30
Chloromethane			20.0	20.36		ug/Kg		102	70 - 130	3	30
2-Chlorotoluene			20.0	21.35		ug/Kg		107	70 - 130	3	30
4-Chlorotoluene			20.0	21.25		ug/Kg		106	70 - 130	2	30
1,2-Dibromo-3-Chloropropane			20.0	20.32		ug/Kg		102	70 - 130	2	30
Dibromochloromethane			20.0	22.44		ug/Kg		112	70 - 130	3	30

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

Lab Sample ID: LCSD 620-42825/2-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42825

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)			20.0	22.39		ug/Kg		112	70 - 130	2	30
Dibromomethane			20.0	21.82		ug/Kg		109	70 - 130	5	30
1,2-Dichlorobenzene			20.0	21.06		ug/Kg		105	70 - 130	2	30
1,3-Dichlorobenzene			20.0	22.14		ug/Kg		111	70 - 130	4	30
1,4-Dichlorobenzene			20.0	20.88		ug/Kg		104	70 - 130	3	30
Dichlorodifluoromethane (Freon 12)			20.0	21.62		ug/Kg		108	70 - 130	1	30
1,1-Dichloroethane			20.0	21.36		ug/Kg		107	70 - 130	1	30
1,2-Dichloroethane			20.0	22.55		ug/Kg		113	70 - 130	3	30
1,1-Dichloroethene			20.0	21.04		ug/Kg		105	70 - 130	0	30
cis-1,2-Dichloroethene			20.0	21.66		ug/Kg		108	70 - 130	4	30
trans-1,2-Dichloroethene			20.0	20.62		ug/Kg		103	70 - 130	0	30
1,2-Dichloropropane			20.0	21.13		ug/Kg		106	70 - 130	1	30
1,3-Dichloropropane			20.0	22.28		ug/Kg		111	70 - 130	2	30
2,2-Dichloropropane			20.0	22.09		ug/Kg		110	70 - 130	1	30
1,1-Dichloropropene			20.0	20.65		ug/Kg		103	70 - 130	2	30
cis-1,3-Dichloropropene			20.0	21.09		ug/Kg		105	70 - 130	1	30
trans-1,3-Dichloropropene			20.0	22.17		ug/Kg		111	70 - 130	2	30
Ethylbenzene			20.0	20.86		ug/Kg		104	70 - 130	3	30
Hexachlorobutadiene			20.0	22.55		ug/Kg		113	70 - 130	2	30
2-Hexanone (MBK)			20.0	18.56		ug/Kg		93	70 - 130	12	30
Isopropylbenzene			20.0	21.49		ug/Kg		107	70 - 130	4	30
4-Isopropyltoluene			20.0	21.12		ug/Kg		106	70 - 130	7	30
Methyl tert-butyl ether			20.0	22.26		ug/Kg		111	70 - 130	2	30
4-Methyl-2-pentanone (MIBK)			20.0	19.03		ug/Kg		95	70 - 130	10	30
Methylene Chloride			20.0	22.13		ug/Kg		111	70 - 130	6	30
Naphthalene			20.0	22.18		ug/Kg		111	70 - 130	4	30
N-Propylbenzene			20.0	21.41		ug/Kg		107	70 - 130	4	30
Styrene			20.0	21.22		ug/Kg		106	70 - 130	3	30
1,1,1,2-Tetrachloroethane			20.0	20.97		ug/Kg		105	70 - 130	2	30
1,1,2,2-Tetrachloroethane			20.0	20.83		ug/Kg		104	70 - 130	1	30
Tetrachloroethene			20.0	21.71		ug/Kg		109	70 - 130	2	30
Toluene			20.0	21.20		ug/Kg		106	70 - 130	1	30
1,2,3-Trichlorobenzene			20.0	23.95		ug/Kg		120	70 - 130	6	30
1,2,4-Trichlorobenzene			20.0	23.15		ug/Kg		116	70 - 130	6	30
1,3,5-Trichlorobenzene			20.0	21.99		ug/Kg		110	70 - 130	6	30
1,1,1-Trichloroethane			20.0	22.49		ug/Kg		112	70 - 130	3	30
1,1,2-Trichloroethane			20.0	22.30		ug/Kg		111	70 - 130	1	30
Trichloroethene			20.0	21.63		ug/Kg		108	70 - 130	3	30
Trichlorofluoromethane (Freon 11)			20.0	22.29		ug/Kg		111	70 - 130	0	30
1,2,3-Trichloropropane			20.0	21.96		ug/Kg		110	70 - 130	3	30
1,2,4-Trimethylbenzene			20.0	21.95		ug/Kg		110	70 - 130	3	30
1,3,5-Trimethylbenzene			20.0	22.09		ug/Kg		110	70 - 130	4	30
Vinyl chloride			20.0	20.83		ug/Kg		104	70 - 130	3	30
m,p-Xylene			20.0	20.70		ug/Kg		104	70 - 130	2	30
o-Xylene			20.0	20.65		ug/Kg		103	70 - 130	2	30
Tetrahydrofuran			20.0	21.52		ug/Kg		108	70 - 130	2	30
Ethyl ether			20.0	21.01		ug/Kg		105	70 - 130	0	30

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

Lab Sample ID: LCSD 620-42825/2-A
Matrix: Solid
Analysis Batch: 42803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42825

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tert-amyl methyl ether			20.0	21.75		ug/Kg		109	70 - 130	0	30
Ethyl tert-butyl ether			20.0	21.34		ug/Kg		107	70 - 130	0	30
di-Isopropyl ether			20.0	20.32		ug/Kg		102	70 - 130	0	30
tert-Butanol			200	200.8		ug/Kg		100	70 - 130	6	30
1,4-Dioxane			200	201.2		ug/Kg		101	70 - 130	7	30
trans-1,4-Dichloro-2-butene			20.0	21.22	J	ug/Kg		106	70 - 130	6	30
Ethanol			400	366.6	J	ug/Kg		92	70 - 130	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chloronaphthalene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Chlorophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
2-Nitrophenol	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
3-Nitroaniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chloroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
4-Nitroaniline	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Acenaphthylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Aniline	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzidine	ND		660		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzoic acid	ND		833		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Benzyl alcohol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Carbazole	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Chrysene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dibenzofuran	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Diethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Dimethyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluoranthene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Fluorene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorobutadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Hexachloroethane	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Isophorone	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Naphthalene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Nitrobenzene	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pentachlorophenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenanthrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Phenol	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyrene	ND		66.7		ug/Kg		12/18/24 09:57	12/19/24 15:29	1
Pyridine	ND		330		ug/Kg		12/18/24 09:57	12/19/24 15:29	1

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

Lab Sample ID: MB 620-42656/1-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42656

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	57		30 - 130	12/18/24 09:57	12/19/24 15:29	1
2-Fluorophenol (Surr)	75		15 - 110	12/18/24 09:57	12/19/24 15:29	1
Nitrobenzene-d5 (Surr)	60		30 - 130	12/18/24 09:57	12/19/24 15:29	1
Phenol-d5 (Surr)	70		15 - 110	12/18/24 09:57	12/19/24 15:29	1
2,4,6-Tribromophenol (Surr)	48		15 - 110	12/18/24 09:57	12/19/24 15:29	1
Terphenyl-d14 (Surr)	57		30 - 130	12/18/24 09:57	12/19/24 15:29	1

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	1670	1017		ug/Kg		61	22 - 93
1,2,4-Trichlorobenzene	1670	1068		ug/Kg		64	18 - 112
1,2-Dichlorobenzene	1670	1096		ug/Kg		66	21 - 107
1,3-Dichlorobenzene	1670	1132		ug/Kg		68	21 - 105
1,4-Dichlorobenzene	1670	1104		ug/Kg		66	20 - 107
1-Methylnaphthalene	1670	1233		ug/Kg		74	30 - 109
2,4,5-Trichlorophenol	1670	1189		ug/Kg		71	41 - 98
2,4,6-Trichlorophenol	1670	1099		ug/Kg		66	37 - 103
2,4-Dichlorophenol	1670	1160		ug/Kg		70	36 - 94
2,4-Dimethylphenol	1670	1062		ug/Kg		64	33 - 86
2,4-Dinitrophenol	1670	879.8		ug/Kg		53	10 - 117
2,4-Dinitrotoluene	1670	1289		ug/Kg		77	22 - 129
2,6-Dinitrotoluene	1670	1186		ug/Kg		71	19 - 132
2-Chloronaphthalene	1670	1174		ug/Kg		70	20 - 117
2-Chlorophenol	1670	1247		ug/Kg		75	42 - 92
2-Methylnaphthalene	1670	1163		ug/Kg		70	10 - 153
2-Methylphenol	1670	1311		ug/Kg		79	39 - 96
2-Nitroaniline	1670	1335		ug/Kg		80	34 - 110
2-Nitrophenol	1670	1143		ug/Kg		69	32 - 100
3 & 4 Methylphenol	1670	1203		ug/Kg		72	30 - 100
3,3'-Dichlorobenzidine	1670	1199		ug/Kg		72	43 - 140
3-Nitroaniline	1670	1083		ug/Kg		65	10 - 104
4,6-Dinitro-2-methylphenol	1670	904.0		ug/Kg		54	13 - 120
4-Bromophenyl phenyl ether	1670	1150		ug/Kg		69	10 - 138
4-Chloro-3-methylphenol	1670	1166		ug/Kg		70	10 - 138
4-Chloroaniline	1670	688.5		ug/Kg		41	10 - 100
4-Chlorophenyl phenyl ether	1670	1069		ug/Kg		64	10 - 132
4-Nitroaniline	1670	1262		ug/Kg		76	10 - 150
4-Nitrophenol	1670	884.4		ug/Kg		53	10 - 123
Acenaphthene	1670	1155		ug/Kg		69	35 - 93
Acenaphthylene	1670	1148		ug/Kg		69	36 - 94
Aniline	1670	776.6		ug/Kg		47	13 - 78
Anthracene	1670	1207		ug/Kg		72	34 - 120
Azobenzene/Diphenyldiazene	1670	1214		ug/Kg		73	35 - 92
Benzidine	1670	ND	*-	ug/Kg		-1	10 - 95
Benzo[a]anthracene	1670	1194		ug/Kg		72	39 - 113

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

Lab Sample ID: LCS 620-42656/2-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	1670	1196		ug/Kg		72	38 - 109
Benzo[b]fluoranthene	1670	1227		ug/Kg		74	29 - 113
Benzo[g,h,i]perylene	1670	1289		ug/Kg		77	35 - 108
Benzo[k]fluoranthene	1670	1137		ug/Kg		68	28 - 112
Benzoic acid	1670	879.4		ug/Kg		53	10 - 82
Benzyl alcohol	1670	1078		ug/Kg		65	14 - 105
Bis(2-chloroethoxy)methane	1670	1122		ug/Kg		67	10 - 119
Bis(2-chloroethyl)ether	1670	1307		ug/Kg		78	10 - 111
bis (2-chloroisopropyl) ether	1670	1051		ug/Kg		63	10 - 122
Bis(2-ethylhexyl) phthalate	1670	1204		ug/Kg		72	10 - 150
Butyl benzyl phthalate	1670	1227		ug/Kg		74	10 - 150
Carbazole	1670	1159		ug/Kg		70	38 - 106
Chrysene	1670	1214		ug/Kg		73	38 - 109
Dibenz(a,h)anthracene	1670	1174		ug/Kg		70	34 - 103
Dibenzofuran	1670	1151		ug/Kg		69	17 - 121
Diethyl phthalate	1670	1130		ug/Kg		68	10 - 139
Dimethyl phthalate	1670	1179		ug/Kg		71	11 - 135
Di-n-butyl phthalate	1670	1156		ug/Kg		69	10 - 150
Di-n-octyl phthalate	1670	1083		ug/Kg		65	10 - 150
Fluoranthene	1670	1124		ug/Kg		67	36 - 111
Fluorene	1670	1198		ug/Kg		72	35 - 98
Hexachlorobenzene	1670	1185		ug/Kg		71	20 - 125
Hexachlorobutadiene	1670	835.7		ug/Kg		50	12 - 108
Hexachlorocyclopentadiene	1670	872.4		ug/Kg		52	18 - 128
Hexachloroethane	1670	1141		ug/Kg		68	21 - 105
Indeno[1,2,3-cd]pyrene	1670	1207		ug/Kg		72	32 - 103
Isophorone	1670	1050		ug/Kg		63	10 - 96
Naphthalene	1670	1209		ug/Kg		73	31 - 94
Nitrobenzene	1670	1170		ug/Kg		70	13 - 117
N-Nitrosodimethylamine	1670	1013		ug/Kg		61	10 - 100
N-Nitrosodi-n-propylamine	1670	1283		ug/Kg		77	10 - 134
N-Nitrosodiphenylamine	1670	1230		ug/Kg		74	14 - 139
Pentachloronitrobenzene	1670	1001		ug/Kg		60	19 - 108
Pentachlorophenol	1670	578.2		ug/Kg		35	20 - 93
Phenanthrene	1670	1135		ug/Kg		68	35 - 101
Phenol	1670	1293		ug/Kg		78	34 - 94
Pyrene	1670	1238		ug/Kg		74	31 - 116
Pyridine	1670	794.3		ug/Kg		48	10 - 94

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*
2-Fluorophenol (Surr)	*86*		*15 - 110*
Nitrobenzene-d5 (Surr)	*71*		*30 - 130*
Phenol-d5 (Surr)	*82*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*70*		*30 - 130*

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

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			1670	1040		ug/Kg		62	22 - 93	2	30
1,2,4-Trichlorobenzene			1670	1096		ug/Kg		66	18 - 112	3	30
1,2-Dichlorobenzene			1670	1118		ug/Kg		67	21 - 107	2	30
1,3-Dichlorobenzene			1670	1161		ug/Kg		70	21 - 105	3	30
1,4-Dichlorobenzene			1670	1126		ug/Kg		68	20 - 107	2	30
1-Methylnaphthalene			1670	1261		ug/Kg		76	30 - 109	2	30
2,4,5-Trichlorophenol			1670	1196		ug/Kg		72	41 - 98	1	30
2,4,6-Trichlorophenol			1670	1138		ug/Kg		68	37 - 103	3	30
2,4-Dichlorophenol			1670	1150		ug/Kg		69	36 - 94	1	30
2,4-Dimethylphenol			1670	1091		ug/Kg		65	33 - 86	3	30
2,4-Dinitrophenol			1670	711.8		ug/Kg		43	10 - 117	21	30
2,4-Dinitrotoluene			1670	1342		ug/Kg		81	22 - 129	4	30
2,6-Dinitrotoluene			1670	1231		ug/Kg		74	19 - 132	4	30
2-Chloronaphthalene			1670	1204		ug/Kg		72	20 - 117	3	30
2-Chlorophenol			1670	1273		ug/Kg		76	42 - 92	2	30
2-Methylnaphthalene			1670	1197		ug/Kg		72	10 - 153	3	30
2-Methylphenol			1670	1356		ug/Kg		81	39 - 96	3	30
2-Nitroaniline			1670	1367		ug/Kg		82	34 - 110	2	30
2-Nitrophenol			1670	1166		ug/Kg		70	32 - 100	2	30
3 & 4 Methylphenol			1670	1227		ug/Kg		74	30 - 100	2	30
3,3'-Dichlorobenzidine			1670	1350		ug/Kg		81	43 - 140	12	30
3-Nitroaniline			1670	1145		ug/Kg		69	10 - 104	6	30
4,6-Dinitro-2-methylphenol			1670	932.3		ug/Kg		56	13 - 120	3	30
4-Bromophenyl phenyl ether			1670	1172		ug/Kg		70	10 - 138	2	30
4-Chloro-3-methylphenol			1670	1200		ug/Kg		72	10 - 138	3	30
4-Chloroaniline			1670	759.4		ug/Kg		46	10 - 100	10	30
4-Chlorophenyl phenyl ether			1670	1090		ug/Kg		65	10 - 132	2	30
4-Nitroaniline			1670	1316		ug/Kg		79	10 - 150	4	30
4-Nitrophenol			1670	889.9		ug/Kg		53	10 - 123	1	30
Acenaphthene			1670	1179		ug/Kg		71	35 - 93	2	30
Acenaphthylene			1670	1182		ug/Kg		71	36 - 94	3	30
Aniline			1670	828.8		ug/Kg		50	13 - 78	7	30
Anthracene			1670	1249		ug/Kg		75	34 - 120	3	30
Azobenzene/Diphenyldiazene			1670	1235		ug/Kg		74	35 - 92	2	30
Benzidine			1670	ND	*- *1	ug/Kg		-2	10 - 95	42	30
Benzo[a]anthracene			1670	1288		ug/Kg		77	39 - 113	8	30
Benzo[a]pyrene			1670	1305		ug/Kg		78	38 - 109	9	30
Benzo[b]fluoranthene			1670	1164		ug/Kg		70	29 - 113	5	30
Benzo[g,h,i]perylene			1670	1384		ug/Kg		83	35 - 108	7	30
Benzo[k]fluoranthene			1670	1429		ug/Kg		86	28 - 112	23	30
Benzoic acid			1670	843.0		ug/Kg		51	10 - 82	4	30
Benzyl alcohol			1670	1091		ug/Kg		65	14 - 105	1	30
Bis(2-chloroethoxy)methane			1670	1148		ug/Kg		69	10 - 119	2	30
Bis(2-chloroethyl)ether			1670	1335		ug/Kg		80	10 - 111	2	30
bis (2-chloroisopropyl) ether			1670	1077		ug/Kg		65	10 - 122	2	30
Bis(2-ethylhexyl) phthalate			1670	1279		ug/Kg		77	10 - 150	6	30
Butyl benzyl phthalate			1670	1331		ug/Kg		80	10 - 150	8	30
Carbazole			1670	1208		ug/Kg		73	38 - 106	4	30

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

Lab Sample ID: LCSD 620-42656/3-A
Matrix: Solid
Analysis Batch: 42700

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42656

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chrysene			1670	1316		ug/Kg		79	38 - 109	8	30
Dibenz(a,h)anthracene			1670	1264		ug/Kg		76	34 - 103	7	30
Dibenzofuran			1670	1178		ug/Kg		71	17 - 121	2	30
Diethyl phthalate			1670	1175		ug/Kg		71	10 - 139	4	30
Dimethyl phthalate			1670	1215		ug/Kg		73	11 - 135	3	30
Di-n-butyl phthalate			1670	1197		ug/Kg		72	10 - 150	4	30
Di-n-octyl phthalate			1670	1165		ug/Kg		70	10 - 150	7	30
Fluoranthene			1670	1179		ug/Kg		71	36 - 111	5	30
Fluorene			1670	1232		ug/Kg		74	35 - 98	3	30
Hexachlorobenzene			1670	1227		ug/Kg		74	20 - 125	4	30
Hexachlorobutadiene			1670	856.5		ug/Kg		51	12 - 108	2	30
Hexachlorocyclopentadiene			1670	901.3		ug/Kg		54	18 - 128	3	30
Hexachloroethane			1670	1175		ug/Kg		71	21 - 105	3	30
Indeno[1,2,3-cd]pyrene			1670	1297		ug/Kg		78	32 - 103	7	30
Isophorone			1670	1073		ug/Kg		64	10 - 96	2	30
Naphthalene			1670	1243		ug/Kg		75	31 - 94	3	30
Nitrobenzene			1670	1205		ug/Kg		72	13 - 117	3	30
N-Nitrosodimethylamine			1670	1035		ug/Kg		62	10 - 100	2	30
N-Nitrosodi-n-propylamine			1670	1310		ug/Kg		79	10 - 134	2	30
N-Nitrosodiphenylamine			1670	1261		ug/Kg		76	14 - 139	2	30
Pentachloronitrobenzene			1670	1040		ug/Kg		62	19 - 108	4	30
Pentachlorophenol			1670	683.1		ug/Kg		41	20 - 93	17	30
Phenanthrene			1670	1166		ug/Kg		70	35 - 101	3	30
Phenol			1670	1321		ug/Kg		79	34 - 94	2	30
Pyrene			1670	1309		ug/Kg		79	31 - 116	6	30
Pyridine			1670	802.8		ug/Kg		48	10 - 94	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*30 - 130*
2-Fluorophenol (Surr)	*84*		*15 - 110*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*
Phenol-d5 (Surr)	*83*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*73*		*30 - 130*

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	ND		1800	1333		ug/Kg	☼	74	40 - 140
1,2,4-Trichlorobenzene	ND		1800	1329		ug/Kg	☼	74	40 - 140
1,2-Dichlorobenzene	ND		1800	1279		ug/Kg	☼	71	40 - 140
1,3-Dichlorobenzene	ND		1800	1318		ug/Kg	☼	73	40 - 140
1,4-Dichlorobenzene	ND		1800	1303		ug/Kg	☼	73	40 - 140
1-Methylnaphthalene	ND		1800	1394		ug/Kg	☼	78	40 - 140
2,4,5-Trichlorophenol	ND		1800	1501		ug/Kg	☼	84	30 - 130
2,4,6-Trichlorophenol	ND		1800	1536		ug/Kg	☼	86	30 - 130

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

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	ND		1800	1420		ug/Kg	☼	79	30 - 130
2,4-Dimethylphenol	ND		1800	1310		ug/Kg	☼	73	30 - 130
2,4-Dinitrophenol	ND	F2 F1	1800	916.7		ug/Kg	☼	51	30 - 130
2,4-Dinitrotoluene	ND		1800	1366		ug/Kg	☼	76	40 - 140
2,6-Dinitrotoluene	ND		1800	1361		ug/Kg	☼	76	40 - 140
2-Chloronaphthalene	ND		1800	1439		ug/Kg	☼	80	40 - 140
2-Chlorophenol	ND		1800	1402		ug/Kg	☼	78	30 - 130
2-Methylnaphthalene	ND		1800	1440		ug/Kg	☼	80	40 - 140
2-Methylphenol	ND		1800	1409		ug/Kg	☼	78	30 - 130
2-Nitroaniline	ND		1800	1441		ug/Kg	☼	80	40 - 140
2-Nitrophenol	ND		1800	1208		ug/Kg	☼	67	30 - 130
3 & 4 Methylphenol	ND		1800	1404		ug/Kg	☼	78	30 - 130
3,3'-Dichlorobenzidine	ND		1800	1544		ug/Kg	☼	86	40 - 140
3-Nitroaniline	ND		1800	931.6		ug/Kg	☼	52	40 - 140
4,6-Dinitro-2-methylphenol	ND	F2	1800	1161		ug/Kg	☼	65	30 - 130
4-Bromophenyl phenyl ether	ND		1800	1407		ug/Kg	☼	78	40 - 140
4-Chloro-3-methylphenol	ND		1800	1436		ug/Kg	☼	80	30 - 130
4-Chloroaniline	ND		1800	752.5		ug/Kg	☼	42	40 - 140
4-Chlorophenyl phenyl ether	ND		1800	1445		ug/Kg	☼	81	40 - 140
4-Nitroaniline	ND	F2	1800	1388		ug/Kg	☼	77	40 - 140
4-Nitrophenol	ND		1800	1497		ug/Kg	☼	83	30 - 130
Acenaphthene	ND		1800	1338		ug/Kg	☼	74	40 - 140
Acenaphthylene	ND		1800	1324		ug/Kg	☼	74	40 - 140
Aniline	ND		1800	816.4		ug/Kg	☼	45	40 - 140
Anthracene	ND		1800	1550		ug/Kg	☼	86	40 - 140
Azobenzene/Diphenyldiazene	ND		1800	1289		ug/Kg	☼	72	40 - 140
Benzidine	ND	*- F1 *1	1800	ND	F1	ug/Kg	☼	22	40 - 140
Benzo[a]anthracene	ND		1800	1547		ug/Kg	☼	86	40 - 140
Benzo[a]pyrene	ND		1800	1511		ug/Kg	☼	84	40 - 140
Benzo[b]fluoranthene	ND		1800	1432		ug/Kg	☼	80	40 - 140
Benzo[g,h,i]perylene	ND		1800	1506		ug/Kg	☼	84	40 - 140
Benzo[k]fluoranthene	ND		1800	1544		ug/Kg	☼	86	40 - 140
Benzoic acid	ND		1800	1709		ug/Kg	☼	95	30 - 130
Benzyl alcohol	ND		1800	1211		ug/Kg	☼	67	40 - 140
Bis(2-chloroethoxy)methane	ND		1800	1253		ug/Kg	☼	70	40 - 140
Bis(2-chloroethyl)ether	ND		1800	1328		ug/Kg	☼	74	40 - 140
bis (2-chloroisopropyl) ether	ND		1800	1116		ug/Kg	☼	62	40 - 140
Bis(2-ethylhexyl) phthalate	ND		1800	1511		ug/Kg	☼	84	40 - 140
Butyl benzyl phthalate	ND		1800	1491		ug/Kg	☼	83	40 - 140
Carbazole	ND	F2	1800	1450		ug/Kg	☼	81	40 - 140
Chrysene	ND		1800	1527		ug/Kg	☼	85	40 - 140
Dibenz(a,h)anthracene	ND		1800	1517		ug/Kg	☼	84	40 - 140
Dibenzofuran	ND		1800	1425		ug/Kg	☼	79	40 - 140
Diethyl phthalate	ND		1800	1389		ug/Kg	☼	77	40 - 140
Dimethyl phthalate	ND		1800	1390		ug/Kg	☼	77	40 - 140
Di-n-butyl phthalate	ND		1800	1467		ug/Kg	☼	82	40 - 140
Di-n-octyl phthalate	ND		1800	1514		ug/Kg	☼	84	40 - 140
Fluoranthene	ND		1800	1506		ug/Kg	☼	84	40 - 140
Fluorene	ND		1800	1467		ug/Kg	☼	82	40 - 140

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

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	ND		1800	1389		ug/Kg	☼	77	40 - 140
Hexachlorobutadiene	ND		1800	1208		ug/Kg	☼	67	40 - 140
Hexachlorocyclopentadiene	ND	F2	1800	1309		ug/Kg	☼	73	40 - 140
Hexachloroethane	ND		1800	1274		ug/Kg	☼	71	40 - 140
Indeno[1,2,3-cd]pyrene	ND		1800	1497		ug/Kg	☼	83	40 - 140
Isophorone	ND		1800	1174		ug/Kg	☼	65	40 - 140
Naphthalene	ND		1800	1431		ug/Kg	☼	80	40 - 140
Nitrobenzene	ND		1800	1288		ug/Kg	☼	72	40 - 140
N-Nitrosodimethylamine	ND	F2	1800	1389		ug/Kg	☼	77	40 - 140
N-Nitrosodi-n-propylamine	ND		1800	1336		ug/Kg	☼	74	40 - 140
N-Nitrosodiphenylamine	ND		1800	1456		ug/Kg	☼	81	40 - 140
Pentachloronitrobenzene	ND		1800	1417		ug/Kg	☼	79	40 - 140
Pentachlorophenol	ND		1800	1472		ug/Kg	☼	82	30 - 130
Phenanthrene	ND		1800	1458		ug/Kg	☼	81	40 - 140
Phenol	ND	F2	1800	1516		ug/Kg	☼	84	30 - 130
Pyrene	ND		1800	1526		ug/Kg	☼	85	40 - 140
Pyridine	ND	F2 F1	1800	884.0		ug/Kg	☼	49	40 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*81*		*30 - 130*
2-Fluorophenol (Surr)	*93*		*15 - 110*
Nitrobenzene-d5 (Surr)	*72*		*30 - 130*
Phenol-d5 (Surr)	*83*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*86*		*15 - 110*
Terphenyl-d14 (Surr)	*83*		*30 - 130*

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42855

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	ND		1720	1114		ug/Kg	☼	65	40 - 140	18	30
1,2,4-Trichlorobenzene	ND		1720	1085		ug/Kg	☼	63	40 - 140	20	30
1,2-Dichlorobenzene	ND		1720	1029		ug/Kg	☼	60	40 - 140	22	30
1,3-Dichlorobenzene	ND		1720	986.0		ug/Kg	☼	57	40 - 140	29	30
1,4-Dichlorobenzene	ND		1720	980.0		ug/Kg	☼	57	40 - 140	28	30
1-Methylnaphthalene	ND		1720	1122		ug/Kg	☼	65	40 - 140	22	30
2,4,5-Trichlorophenol	ND		1720	1286		ug/Kg	☼	75	30 - 130	15	30
2,4,6-Trichlorophenol	ND		1720	1291		ug/Kg	☼	75	30 - 130	17	30
2,4-Dichlorophenol	ND		1720	1213		ug/Kg	☼	70	30 - 130	16	30
2,4-Dimethylphenol	ND		1720	1068		ug/Kg	☼	62	30 - 130	20	30
2,4-Dinitrophenol	ND	F2 F1	1720	ND		ug/Kg	☼	26	30 - 130	70	30
2,4-Dinitrotoluene	ND		1720	1183		ug/Kg	☼	69	40 - 140	14	30
2,6-Dinitrotoluene	ND		1720	1150		ug/Kg	☼	67	40 - 140	17	30
2-Chloronaphthalene	ND		1720	1138		ug/Kg	☼	66	40 - 140	23	30
2-Chlorophenol	ND		1720	1128		ug/Kg	☼	65	30 - 130	22	30
2-Methylnaphthalene	ND		1720	1131		ug/Kg	☼	66	40 - 140	24	30
2-Methylphenol	ND		1720	1107		ug/Kg	☼	64	30 - 130	24	30

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

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42855

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Nitroaniline	ND		1720	1227		ug/Kg	☼	71	40 - 140	16	30
2-Nitrophenol	ND		1720	999.8		ug/Kg	☼	58	30 - 130	19	30
3 & 4 Methylphenol	ND		1720	1103		ug/Kg	☼	64	30 - 130	24	30
3,3'-Dichlorobenzidine	ND		1720	1724		ug/Kg	☼	100	40 - 140	11	30
3-Nitroaniline	ND		1720	1195		ug/Kg	☼	69	40 - 140	25	30
4,6-Dinitro-2-methylphenol	ND	F2	1720	715.4		ug/Kg	☼	42	30 - 130	48	30
4-Bromophenyl phenyl ether	ND		1720	1280		ug/Kg	☼	74	40 - 140	9	30
4-Chloro-3-methylphenol	ND		1720	1266		ug/Kg	☼	73	30 - 130	13	30
4-Chloroaniline	ND		1720	904.3		ug/Kg	☼	52	40 - 140	18	30
4-Chlorophenyl phenyl ether	ND		1720	1147		ug/Kg	☼	67	40 - 140	23	30
4-Nitroaniline	ND	F2	1720	2143		ug/Kg	☼	124	40 - 140	43	30
4-Nitrophenol	ND		1720	1263		ug/Kg	☼	73	30 - 130	17	30
Acenaphthene	ND		1720	1111		ug/Kg	☼	64	40 - 140	18	30
Acenaphthylene	ND		1720	1090		ug/Kg	☼	63	40 - 140	19	30
Aniline	ND		1720	772.9		ug/Kg	☼	45	40 - 140	5	30
Anthracene	ND		1720	1316		ug/Kg	☼	76	40 - 140	16	30
Azobenzene/Diphenyldiazene	ND		1720	1070		ug/Kg	☼	62	40 - 140	19	30
Benzidine	ND	*- F1 *1	1720	ND		ug/Kg	☼	18	40 - 140	24	30
Benzo[a]anthracene	ND		1720	1313		ug/Kg	☼	76	40 - 140	16	30
Benzo[a]pyrene	ND		1720	1416		ug/Kg	☼	82	40 - 140	6	30
Benzo[b]fluoranthene	ND		1720	1339		ug/Kg	☼	78	40 - 140	7	30
Benzo[g,h,i]perylene	ND		1720	1429		ug/Kg	☼	83	40 - 140	5	30
Benzo[k]fluoranthene	ND		1720	1370		ug/Kg	☼	80	40 - 140	12	30
Benzoic acid	ND		1720	1377		ug/Kg	☼	80	30 - 130	21	30
Benzyl alcohol	ND		1720	959.8		ug/Kg	☼	56	40 - 140	23	30
Bis(2-chloroethoxy)methane	ND		1720	1062		ug/Kg	☼	62	40 - 140	17	30
Bis(2-chloroethyl)ether	ND		1720	999.3		ug/Kg	☼	58	40 - 140	28	30
bis (2-chloroisopropyl) ether	ND		1720	887.4		ug/Kg	☼	52	40 - 140	23	30
Bis(2-ethylhexyl) phthalate	ND		1720	1348		ug/Kg	☼	78	40 - 140	11	30
Butyl benzyl phthalate	ND		1720	1376		ug/Kg	☼	80	40 - 140	8	30
Carbazole	ND	F2	1720	2140		ug/Kg	☼	124	40 - 140	38	30
Chrysene	ND		1720	1308		ug/Kg	☼	76	40 - 140	15	30
Dibenz(a,h)anthracene	ND		1720	1442		ug/Kg	☼	84	40 - 140	5	30
Dibenzofuran	ND		1720	1130		ug/Kg	☼	66	40 - 140	23	30
Diethyl phthalate	ND		1720	1187		ug/Kg	☼	69	40 - 140	16	30
Dimethyl phthalate	ND		1720	1119		ug/Kg	☼	65	40 - 140	22	30
Di-n-butyl phthalate	ND		1720	1240		ug/Kg	☼	72	40 - 140	17	30
Di-n-octyl phthalate	ND		1720	1280		ug/Kg	☼	74	40 - 140	17	30
Fluoranthene	ND		1720	1298		ug/Kg	☼	75	40 - 140	15	30
Fluorene	ND		1720	1174		ug/Kg	☼	68	40 - 140	22	30
Hexachlorobenzene	ND		1720	1251		ug/Kg	☼	73	40 - 140	10	30
Hexachlorobutadiene	ND		1720	1008		ug/Kg	☼	58	40 - 140	18	30
Hexachlorocyclopentadiene	ND	F2	1720	769.3		ug/Kg	☼	45	40 - 140	52	30
Hexachloroethane	ND		1720	999.5		ug/Kg	☼	58	40 - 140	24	30
Indeno[1,2,3-cd]pyrene	ND		1720	1427		ug/Kg	☼	83	40 - 140	5	30
Isophorone	ND		1720	954.7		ug/Kg	☼	55	40 - 140	21	30
Naphthalene	ND		1720	1099		ug/Kg	☼	64	40 - 140	26	30
Nitrobenzene	ND		1720	984.2		ug/Kg	☼	57	40 - 140	27	30
N-Nitrosodimethylamine	ND	F2	1720	969.2		ug/Kg	☼	56	40 - 140	36	30

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

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42855

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine	ND		1720	1076		ug/Kg	☼	62	40 - 140	22	30
N-Nitrosodiphenylamine	ND		1720	1299		ug/Kg	☼	75	40 - 140	11	30
Pentachloronitrobenzene	ND		1720	1243		ug/Kg	☼	72	40 - 140	13	30
Pentachlorophenol	ND		1720	1209		ug/Kg	☼	70	30 - 130	20	30
Phenanthrene	ND		1720	1262		ug/Kg	☼	73	40 - 140	14	30
Phenol	ND	F2	1720	1091		ug/Kg	☼	63	30 - 130	33	30
Pyrene	ND		1720	1299		ug/Kg	☼	75	40 - 140	16	30
Pyridine	ND	F2 F1	1720	619.6		ug/Kg	☼	36	40 - 140	35	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*65*		*30 - 130*
2-Fluorophenol (Surr)	*73*		*15 - 110*
Nitrobenzene-d5 (Surr)	*61*		*30 - 130*
Phenol-d5 (Surr)	*72*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*78*		*15 - 110*
Terphenyl-d14 (Surr)	*77*		*30 - 130*

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42943

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	ND		1960	1391		ug/Kg	☼	71	40 - 140
1,2,4-Trichlorobenzene	ND		1960	1438		ug/Kg	☼	73	40 - 140
1,2-Dichlorobenzene	ND		1960	1374		ug/Kg	☼	70	40 - 140
1,3-Dichlorobenzene	ND		1960	1390		ug/Kg	☼	71	40 - 140
1,4-Dichlorobenzene	ND		1960	1399		ug/Kg	☼	71	40 - 140
1-Methylnaphthalene	ND		1960	1479		ug/Kg	☼	76	40 - 140
2,4,5-Trichlorophenol	ND		1960	1550		ug/Kg	☼	79	30 - 130
2,4,6-Trichlorophenol	ND		1960	1412		ug/Kg	☼	72	30 - 130
2,4-Dichlorophenol	ND		1960	1511		ug/Kg	☼	77	30 - 130
2,4-Dimethylphenol	ND		1960	439.5	F1	ug/Kg	☼	22	30 - 130
2,4-Dinitrophenol	ND		1960	1404		ug/Kg	☼	72	30 - 130
2,4-Dinitrotoluene	ND		1960	1622		ug/Kg	☼	83	40 - 140
2,6-Dinitrotoluene	ND		1960	1579		ug/Kg	☼	81	40 - 140
2-Chloronaphthalene	ND		1960	1518		ug/Kg	☼	78	40 - 140
2-Chlorophenol	ND		1960	1474		ug/Kg	☼	75	30 - 130
2-Methylnaphthalene	ND		1960	1558		ug/Kg	☼	80	40 - 140
2-Methylphenol	ND		1960	1241		ug/Kg	☼	63	30 - 130
2-Nitroaniline	ND		1960	1629		ug/Kg	☼	83	40 - 140
2-Nitrophenol	ND		1960	1515		ug/Kg	☼	77	30 - 130
3 & 4 Methylphenol	ND		1960	1268		ug/Kg	☼	65	30 - 130
3,3'-Dichlorobenzidine	ND		1960	ND	F1	ug/Kg	☼	0	40 - 140
3-Nitroaniline	ND		1960	1311		ug/Kg	☼	67	40 - 140
4,6-Dinitro-2-methylphenol	ND		1960	1285		ug/Kg	☼	66	30 - 130
4-Bromophenyl phenyl ether	ND		1960	1545		ug/Kg	☼	79	40 - 140
4-Chloro-3-methylphenol	ND		1960	1528		ug/Kg	☼	78	30 - 130
4-Chloroaniline	ND		1960	672.7	F1	ug/Kg	☼	34	40 - 140

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

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42943

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Chlorophenyl phenyl ether	ND		1960	1534		ug/Kg	☼	78	40 - 140
4-Nitroaniline	ND		1960	1297		ug/Kg	☼	66	40 - 140
4-Nitrophenol	ND		1960	1570		ug/Kg	☼	80	30 - 130
Acenaphthene	ND		1960	1444		ug/Kg	☼	74	40 - 140
Acenaphthylene	ND		1960	1384		ug/Kg	☼	71	40 - 140
Aniline	ND		1960	ND	F1	ug/Kg	☼	12	40 - 140
Anthracene	ND		1960	1617		ug/Kg	☼	83	40 - 140
Azobenzene/Diphenyldiazene	ND		1960	1369		ug/Kg	☼	70	40 - 140
Benzidine	ND	*- *1	1960	ND	F1	ug/Kg	☼	0	40 - 140
Benzo[a]anthracene	ND		1960	1510		ug/Kg	☼	77	40 - 140
Benzo[a]pyrene	ND		1960	1545		ug/Kg	☼	79	40 - 140
Benzo[b]fluoranthene	ND		1960	1671		ug/Kg	☼	85	40 - 140
Benzo[g,h,i]perylene	ND		1960	1648		ug/Kg	☼	84	40 - 140
Benzo[k]fluoranthene	ND		1960	1377		ug/Kg	☼	70	40 - 140
Benzoic acid	ND		1960	1729		ug/Kg	☼	88	30 - 130
Benzyl alcohol	ND		1960	1322		ug/Kg	☼	68	40 - 140
Bis(2-chloroethoxy)methane	ND		1960	1416		ug/Kg	☼	72	40 - 140
Bis(2-chloroethyl)ether	ND		1960	1429		ug/Kg	☼	73	40 - 140
bis (2-chloroisopropyl) ether	ND		1960	1224		ug/Kg	☼	63	40 - 140
Bis(2-ethylhexyl) phthalate	ND		1960	1612		ug/Kg	☼	82	40 - 140
Butyl benzyl phthalate	ND		1960	1597		ug/Kg	☼	82	40 - 140
Carbazole	ND		1960	1376		ug/Kg	☼	70	40 - 140
Chrysene	ND		1960	1542		ug/Kg	☼	79	40 - 140
Dibenz(a,h)anthracene	ND		1960	1618		ug/Kg	☼	83	40 - 140
Dibenzofuran	ND		1960	1498		ug/Kg	☼	77	40 - 140
Diethyl phthalate	ND		1960	1514		ug/Kg	☼	77	40 - 140
Dimethyl phthalate	ND		1960	1513		ug/Kg	☼	77	40 - 140
Di-n-butyl phthalate	ND		1960	1549		ug/Kg	☼	79	40 - 140
Di-n-octyl phthalate	ND		1960	1591		ug/Kg	☼	81	40 - 140
Fluoranthene	ND		1960	1564		ug/Kg	☼	80	40 - 140
Fluorene	ND		1960	1552		ug/Kg	☼	79	40 - 140
Hexachlorobenzene	ND		1960	1517		ug/Kg	☼	77	40 - 140
Hexachlorobutadiene	ND		1960	1301		ug/Kg	☼	66	40 - 140
Hexachlorocyclopentadiene	ND		1960	951.2		ug/Kg	☼	49	40 - 140
Hexachloroethane	ND		1960	1275		ug/Kg	☼	65	40 - 140
Indeno[1,2,3-cd]pyrene	ND		1960	1596		ug/Kg	☼	82	40 - 140
Isophorone	ND		1960	1285		ug/Kg	☼	66	40 - 140
Naphthalene	ND		1960	1554		ug/Kg	☼	79	40 - 140
Nitrobenzene	ND		1960	1477		ug/Kg	☼	75	40 - 140
N-Nitrosodimethylamine	ND		1960	1293		ug/Kg	☼	66	40 - 140
N-Nitrosodi-n-propylamine	ND		1960	1464		ug/Kg	☼	75	40 - 140
N-Nitrosodiphenylamine	ND		1960	736.6	F1	ug/Kg	☼	38	40 - 140
Pentachloronitrobenzene	ND		1960	1536		ug/Kg	☼	78	40 - 140
Pentachlorophenol	ND		1960	1496		ug/Kg	☼	76	30 - 130
Phenanthrene	ND		1960	1513		ug/Kg	☼	77	40 - 140
Phenol	ND		1960	1636		ug/Kg	☼	84	30 - 130
Pyrene	ND		1960	1546		ug/Kg	☼	79	40 - 140
Pyridine	ND		1960	762.7	F1	ug/Kg	☼	39	40 - 140

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

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42943

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42656

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*77*		*30 - 130*
2-Fluorophenol (Surr)	*83*		*15 - 110*
Nitrobenzene-d5 (Surr)	*76*		*30 - 130*
Phenol-d5 (Surr)	*80*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*59*		*15 - 110*
Terphenyl-d14 (Surr)	*78*		*30 - 130*

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42943

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	ND		1940	1484		ug/Kg	☼	77	40 - 140	6	30
1,2,4-Trichlorobenzene	ND		1940	1509		ug/Kg	☼	78	40 - 140	5	30
1,2-Dichlorobenzene	ND		1940	1436		ug/Kg	☼	74	40 - 140	4	30
1,3-Dichlorobenzene	ND		1940	1469		ug/Kg	☼	76	40 - 140	5	30
1,4-Dichlorobenzene	ND		1940	1474		ug/Kg	☼	76	40 - 140	5	30
1-Methylnaphthalene	ND		1940	1574		ug/Kg	☼	81	40 - 140	6	30
2,4,5-Trichlorophenol	ND		1940	1662		ug/Kg	☼	86	30 - 130	7	30
2,4,6-Trichlorophenol	ND		1940	1521		ug/Kg	☼	79	30 - 130	7	30
2,4-Dichlorophenol	ND		1940	1570		ug/Kg	☼	81	30 - 130	4	30
2,4-Dimethylphenol	ND		1940	526.4	F1	ug/Kg	☼	27	30 - 130	18	30
2,4-Dinitrophenol	ND		1940	1556		ug/Kg	☼	80	30 - 130	10	30
2,4-Dinitrotoluene	ND		1940	1754		ug/Kg	☼	91	40 - 140	8	30
2,6-Dinitrotoluene	ND		1940	1681		ug/Kg	☼	87	40 - 140	6	30
2-Chloronaphthalene	ND		1940	1617		ug/Kg	☼	84	40 - 140	6	30
2-Chlorophenol	ND		1940	1551		ug/Kg	☼	80	30 - 130	5	30
2-Methylnaphthalene	ND		1940	1632		ug/Kg	☼	84	40 - 140	5	30
2-Methylphenol	ND		1940	1337		ug/Kg	☼	69	30 - 130	7	30
2-Nitroaniline	ND		1940	1735		ug/Kg	☼	90	40 - 140	6	30
2-Nitrophenol	ND		1940	1592		ug/Kg	☼	82	30 - 130	5	30
3 & 4 Methylphenol	ND		1940	1366		ug/Kg	☼	71	30 - 130	7	30
3,3'-Dichlorobenzidine	ND		1940	ND	F1	ug/Kg	☼	4	40 - 140	NC	30
3-Nitroaniline	ND		1940	1357		ug/Kg	☼	70	40 - 140	3	30
4,6-Dinitro-2-methylphenol	ND		1940	1511		ug/Kg	☼	78	30 - 130	16	30
4-Bromophenyl phenyl ether	ND		1940	1634		ug/Kg	☼	84	40 - 140	6	30
4-Chloro-3-methylphenol	ND		1940	1612		ug/Kg	☼	83	30 - 130	5	30
4-Chloroaniline	ND		1940	687.4	F1	ug/Kg	☼	36	40 - 140	2	30
4-Chlorophenyl phenyl ether	ND		1940	1626		ug/Kg	☼	84	40 - 140	6	30
4-Nitroaniline	ND		1940	1361		ug/Kg	☼	70	40 - 140	5	30
4-Nitrophenol	ND		1940	1564		ug/Kg	☼	81	30 - 130	0	30
Acenaphthene	ND		1940	1534		ug/Kg	☼	79	40 - 140	6	30
Acenaphthylene	ND		1940	1458		ug/Kg	☼	75	40 - 140	5	30
Aniline	ND		1940	ND	F1	ug/Kg	☼	13	40 - 140	2	30
Anthracene	ND		1940	1726		ug/Kg	☼	89	40 - 140	7	30
Azobenzene/Diphenyldiazene	ND		1940	1450		ug/Kg	☼	75	40 - 140	6	30
Benzidine	ND	*- *1	1940	ND	F1	ug/Kg	☼	0	40 - 140	NC	30
Benzo[a]anthracene	ND		1940	1631		ug/Kg	☼	84	40 - 140	8	30

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

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42943

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene	ND		1940	1675		ug/Kg	☼	87	40 - 140	8	30
Benzo[b]fluoranthene	ND		1940	1739		ug/Kg	☼	90	40 - 140	4	30
Benzo[g,h,i]perylene	ND		1940	1778		ug/Kg	☼	92	40 - 140	8	30
Benzo[k]fluoranthene	ND		1940	1553		ug/Kg	☼	80	40 - 140	12	30
Benzoic acid	ND		1940	1879		ug/Kg	☼	97	30 - 130	8	30
Benzyl alcohol	ND		1940	1319		ug/Kg	☼	68	40 - 140	0	30
Bis(2-chloroethoxy)methane	ND		1940	1486		ug/Kg	☼	77	40 - 140	5	30
Bis(2-chloroethyl)ether	ND		1940	1512		ug/Kg	☼	78	40 - 140	6	30
bis (2-chloroisopropyl) ether	ND		1940	1278		ug/Kg	☼	66	40 - 140	4	30
Bis(2-ethylhexyl) phthalate	ND		1940	1724		ug/Kg	☼	89	40 - 140	7	30
Butyl benzyl phthalate	ND		1940	1729		ug/Kg	☼	89	40 - 140	8	30
Carbazole	ND		1940	1474		ug/Kg	☼	76	40 - 140	7	30
Chrysene	ND		1940	1641		ug/Kg	☼	85	40 - 140	6	30
Dibenz(a,h)anthracene	ND		1940	1746		ug/Kg	☼	90	40 - 140	8	30
Dibenzofuran	ND		1940	1592		ug/Kg	☼	82	40 - 140	6	30
Diethyl phthalate	ND		1940	1611		ug/Kg	☼	83	40 - 140	6	30
Dimethyl phthalate	ND		1940	1611		ug/Kg	☼	83	40 - 140	6	30
Di-n-butyl phthalate	ND		1940	1665		ug/Kg	☼	86	40 - 140	7	30
Di-n-octyl phthalate	ND		1940	1729		ug/Kg	☼	89	40 - 140	8	30
Fluoranthene	ND		1940	1660		ug/Kg	☼	86	40 - 140	6	30
Fluorene	ND		1940	1643		ug/Kg	☼	85	40 - 140	6	30
Hexachlorobenzene	ND		1940	1604		ug/Kg	☼	83	40 - 140	6	30
Hexachlorobutadiene	ND		1940	1360		ug/Kg	☼	70	40 - 140	4	30
Hexachlorocyclopentadiene	ND		1940	1114		ug/Kg	☼	58	40 - 140	16	30
Hexachloroethane	ND		1940	1370		ug/Kg	☼	71	40 - 140	7	30
Indeno[1,2,3-cd]pyrene	ND		1940	1722		ug/Kg	☼	89	40 - 140	8	30
Isophorone	ND		1940	1341		ug/Kg	☼	69	40 - 140	4	30
Naphthalene	ND		1940	1637		ug/Kg	☼	85	40 - 140	5	30
Nitrobenzene	ND		1940	1541		ug/Kg	☼	80	40 - 140	4	30
N-Nitrosodimethylamine	ND		1940	1475		ug/Kg	☼	76	40 - 140	13	30
N-Nitrosodi-n-propylamine	ND		1940	1543		ug/Kg	☼	80	40 - 140	5	30
N-Nitrosodiphenylamine	ND		1940	834.2		ug/Kg	☼	43	40 - 140	12	30
Pentachloronitrobenzene	ND		1940	1606		ug/Kg	☼	83	40 - 140	4	30
Pentachlorophenol	ND		1940	1607		ug/Kg	☼	83	30 - 130	7	30
Phenanthrene	ND		1940	1618		ug/Kg	☼	84	40 - 140	7	30
Phenol	ND		1940	1691		ug/Kg	☼	87	30 - 130	3	30
Pyrene	ND		1940	1663		ug/Kg	☼	86	40 - 140	7	30
Pyridine	ND		1940	801.0		ug/Kg	☼	41	40 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*83*		*30 - 130*
2-Fluorophenol (Surr)	*88*		*15 - 110*
Nitrobenzene-d5 (Surr)	*80*		*30 - 130*
Phenol-d5 (Surr)	*84*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*63*		*15 - 110*
Terphenyl-d14 (Surr)	*85*		*30 - 130*

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

Lab Sample ID: MB 620-42706/1-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42706

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
1,2,4-Trichlorobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
1,2-Dichlorobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
1,3-Dichlorobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
1,4-Dichlorobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
1-Methylnaphthalene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4,5-Trichlorophenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4,6-Trichlorophenol	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4-Dichlorophenol	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4-Dimethylphenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4-Dinitrophenol	ND		660		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,4-Dinitrotoluene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2,6-Dinitrotoluene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Chloronaphthalene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Chlorophenol	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Methylnaphthalene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Methylphenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Nitroaniline	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
2-Nitrophenol	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
3 & 4 Methylphenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
3,3'-Dichlorobenzidine	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
3-Nitroaniline	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4,6-Dinitro-2-methylphenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Bromophenyl phenyl ether	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Chloro-3-methylphenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Chloroaniline	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Chlorophenyl phenyl ether	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Nitroaniline	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
4-Nitrophenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Acenaphthene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Acenaphthylene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Aniline	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Anthracene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Azobenzene/Diphenyldiazene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzidine	ND		660		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzo[a]anthracene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzo[a]pyrene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzo[b]fluoranthene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzo[g,h,i]perylene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzo[k]fluoranthene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzoic acid	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Benzyl alcohol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Bis(2-chloroethoxy)methane	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Bis(2-chloroethyl)ether	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
bis (2-chloroisopropyl) ether	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Bis(2-ethylhexyl) phthalate	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Butyl benzyl phthalate	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Carbazole	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1

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

Lab Sample ID: MB 620-42706/1-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42706

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Dibenz(a,h)anthracene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Dibenzofuran	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Diethyl phthalate	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Dimethyl phthalate	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Di-n-butyl phthalate	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Di-n-octyl phthalate	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Fluoranthene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Fluorene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Hexachlorobenzene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Hexachlorobutadiene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Hexachlorocyclopentadiene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Hexachloroethane	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Indeno[1,2,3-cd]pyrene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Isophorone	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Naphthalene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Nitrobenzene	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
N-Nitrosodimethylamine	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
N-Nitrosodi-n-propylamine	ND		167		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
N-Nitrosodiphenylamine	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Pentachloronitrobenzene	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Pentachlorophenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Phenanthrene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Phenol	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Pyrene	ND		66.7		ug/Kg		12/19/24 10:22	12/20/24 18:04	1
Pyridine	ND		330		ug/Kg		12/19/24 10:22	12/20/24 18:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*53*		*30 - 130*	*12/19/24 10:22*	*12/20/24 18:04*	*1*
2-Fluorophenol (Surr)	*64*		*15 - 110*	*12/19/24 10:22*	*12/20/24 18:04*	*1*
Nitrobenzene-d5 (Surr)	*52*		*30 - 130*	*12/19/24 10:22*	*12/20/24 18:04*	*1*
Phenol-d5 (Surr)	*57*		*15 - 110*	*12/19/24 10:22*	*12/20/24 18:04*	*1*
2,4,6-Tribromophenol (Surr)	*44*		*15 - 110*	*12/19/24 10:22*	*12/20/24 18:04*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*12/19/24 10:22*	*12/20/24 18:04*	*1*

Lab Sample ID: LCS 620-42706/2-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	1670	756.9		ug/Kg		45	22 - 93
1,2,4-Trichlorobenzene	1670	737.7		ug/Kg		44	18 - 112
1,2-Dichlorobenzene	1670	734.6		ug/Kg		44	21 - 107
1,3-Dichlorobenzene	1670	763.6		ug/Kg		46	21 - 105
1,4-Dichlorobenzene	1670	758.6		ug/Kg		46	20 - 107
1-Methylnaphthalene	1670	783.1		ug/Kg		47	30 - 109
2,4,5-Trichlorophenol	1670	856.0		ug/Kg		51	41 - 98
2,4,6-Trichlorophenol	1670	851.3		ug/Kg		51	37 - 103

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

Lab Sample ID: LCS 620-42706/2-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	1670	811.2		ug/Kg		49	36 - 94
2,4-Dimethylphenol	1670	743.9		ug/Kg		45	33 - 86
2,4-Dinitrophenol	1670	896.6		ug/Kg		54	10 - 117
2,4-Dinitrotoluene	1670	885.4		ug/Kg		53	22 - 129
2,6-Dinitrotoluene	1670	863.8		ug/Kg		52	19 - 132
2-Chloronaphthalene	1670	827.0		ug/Kg		50	20 - 117
2-Chlorophenol	1670	809.3		ug/Kg		49	42 - 92
2-Methylnaphthalene	1670	787.0		ug/Kg		47	10 - 153
2-Methylphenol	1670	821.6		ug/Kg		49	39 - 96
2-Nitroaniline	1670	850.9		ug/Kg		51	34 - 110
2-Nitrophenol	1670	781.4		ug/Kg		47	32 - 100
3 & 4 Methylphenol	1670	800.6		ug/Kg		48	30 - 100
3,3'-Dichlorobenzidine	1670	870.1		ug/Kg		52	43 - 140
3-Nitroaniline	1670	636.5		ug/Kg		38	10 - 104
4,6-Dinitro-2-methylphenol	1670	936.2		ug/Kg		56	13 - 120
4-Bromophenyl phenyl ether	1670	792.0		ug/Kg		48	10 - 138
4-Chloro-3-methylphenol	1670	816.2		ug/Kg		49	10 - 138
4-Chloroaniline	1670	400.6		ug/Kg		24	10 - 100
4-Chlorophenyl phenyl ether	1670	838.0		ug/Kg		50	10 - 132
4-Nitroaniline	1670	825.1		ug/Kg		50	10 - 150
4-Nitrophenol	1670	847.0		ug/Kg		51	10 - 123
Acenaphthene	1670	769.8		ug/Kg		46	35 - 93
Acenaphthylene	1670	763.7		ug/Kg		46	36 - 94
Aniline	1670	437.1		ug/Kg		26	13 - 78
Anthracene	1670	897.2		ug/Kg		54	34 - 120
Azobenzene/Diphenyldiazene	1670	758.4		ug/Kg		46	35 - 92
Benzidine	1670	263.4	J	ug/Kg		16	10 - 95
Benzo[a]anthracene	1670	899.6		ug/Kg		54	39 - 113
Benzo[a]pyrene	1670	855.2		ug/Kg		51	38 - 109
Benzo[b]fluoranthene	1670	833.7		ug/Kg		50	29 - 113
Benzo[g,h,i]perylene	1670	857.6		ug/Kg		51	35 - 108
Benzo[k]fluoranthene	1670	849.8		ug/Kg		51	28 - 112
Benzoic acid	1670	577.1		ug/Kg		35	10 - 82
Benzyl alcohol	1670	704.4		ug/Kg		42	14 - 105
Bis(2-chloroethoxy)methane	1670	706.5		ug/Kg		42	10 - 119
Bis(2-chloroethyl)ether	1670	721.2		ug/Kg		43	10 - 111
bis (2-chloroisopropyl) ether	1670	668.5		ug/Kg		40	10 - 122
Bis(2-ethylhexyl) phthalate	1670	875.6		ug/Kg		53	10 - 150
Butyl benzyl phthalate	1670	874.9		ug/Kg		52	10 - 150
Carbazole	1670	831.3		ug/Kg		50	38 - 106
Chrysene	1670	888.5		ug/Kg		53	38 - 109
Dibenz(a,h)anthracene	1670	843.2		ug/Kg		51	34 - 103
Dibenzofuran	1670	806.1		ug/Kg		48	17 - 121
Diethyl phthalate	1670	817.0		ug/Kg		49	10 - 139
Dimethyl phthalate	1670	809.0		ug/Kg		49	11 - 135
Di-n-butyl phthalate	1670	883.7		ug/Kg		53	10 - 150
Di-n-octyl phthalate	1670	860.1		ug/Kg		52	10 - 150
Fluoranthene	1670	868.9		ug/Kg		52	36 - 111
Fluorene	1670	850.8		ug/Kg		51	35 - 98

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

Lab Sample ID: LCS 620-42706/2-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42706

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexachlorobenzene			1670	785.2		ug/Kg		47	20 - 125		
Hexachlorobutadiene			1670	674.6		ug/Kg		40	12 - 108		
Hexachlorocyclopentadiene			1670	787.7		ug/Kg		47	18 - 128		
Hexachloroethane			1670	747.9		ug/Kg		45	21 - 105		
Indeno[1,2,3-cd]pyrene			1670	838.3		ug/Kg		50	32 - 103		
Isophorone			1670	663.7		ug/Kg		40	10 - 96		
Naphthalene			1670	812.0		ug/Kg		49	31 - 94		
Nitrobenzene			1670	780.7		ug/Kg		47	13 - 117		
N-Nitrosodimethylamine			1670	869.2		ug/Kg		52	10 - 100		
N-Nitrosodi-n-propylamine			1670	780.5		ug/Kg		47	10 - 134		
N-Nitrosodiphenylamine			1670	870.6		ug/Kg		52	14 - 139		
Pentachloronitrobenzene			1670	856.1		ug/Kg		51	19 - 108		
Pentachlorophenol			1670	777.8		ug/Kg		47	20 - 93		
Phenanthrene			1670	844.8		ug/Kg		51	35 - 101		
Phenol			1670	852.6		ug/Kg		51	34 - 94		
Pyrene			1670	892.3		ug/Kg		54	31 - 116		
Pyridine			1670	447.0		ug/Kg		27	10 - 94		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*49*		*30 - 130*
2-Fluorophenol (Surr)	*56*		*15 - 110*
Nitrobenzene-d5 (Surr)	*48*		*30 - 130*
Phenol-d5 (Surr)	*51*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*52*		*15 - 110*
Terphenyl-d14 (Surr)	*50*		*30 - 130*

Lab Sample ID: LCSD 620-42706/3-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42706

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			1670	770.3		ug/Kg		46	22 - 93	2	30
1,2,4-Trichlorobenzene			1670	772.3		ug/Kg		46	18 - 112	5	30
1,2-Dichlorobenzene			1670	754.0		ug/Kg		45	21 - 107	3	30
1,3-Dichlorobenzene			1670	783.3		ug/Kg		47	21 - 105	3	30
1,4-Dichlorobenzene			1670	780.1		ug/Kg		47	20 - 107	3	30
1-Methylnaphthalene			1670	808.6		ug/Kg		49	30 - 109	3	30
2,4,5-Trichlorophenol			1670	843.1		ug/Kg		51	41 - 98	2	30
2,4,6-Trichlorophenol			1670	874.9		ug/Kg		52	37 - 103	3	30
2,4-Dichlorophenol			1670	841.1		ug/Kg		50	36 - 94	4	30
2,4-Dimethylphenol			1670	777.9		ug/Kg		47	33 - 86	4	30
2,4-Dinitrophenol			1670	866.3		ug/Kg		52	10 - 117	3	30
2,4-Dinitrotoluene			1670	892.3		ug/Kg		54	22 - 129	1	30
2,6-Dinitrotoluene			1670	863.2		ug/Kg		52	19 - 132	0	30
2-Chloronaphthalene			1670	843.7		ug/Kg		51	20 - 117	2	30
2-Chlorophenol			1670	825.7		ug/Kg		50	42 - 92	2	30
2-Methylnaphthalene			1670	813.6		ug/Kg		49	10 - 153	3	30
2-Methylphenol			1670	840.1		ug/Kg		50	39 - 96	2	30

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

Lab Sample ID: LCSD 620-42706/3-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Nitroaniline	1670	865.5		ug/Kg		52	34 - 110	2	30
2-Nitrophenol	1670	818.5		ug/Kg		49	32 - 100	5	30
3 & 4 Methylphenol	1670	813.7		ug/Kg		49	30 - 100	2	30
3,3'-Dichlorobenzidine	1670	829.9		ug/Kg		50	43 - 140	5	30
3-Nitroaniline	1670	633.6		ug/Kg		38	10 - 104	0	30
4,6-Dinitro-2-methylphenol	1670	904.8		ug/Kg		54	13 - 120	3	30
4-Bromophenyl phenyl ether	1670	799.0		ug/Kg		48	10 - 138	1	30
4-Chloro-3-methylphenol	1670	849.9		ug/Kg		51	10 - 138	4	30
4-Chloroaniline	1670	410.4		ug/Kg		25	10 - 100	2	30
4-Chlorophenyl phenyl ether	1670	847.9		ug/Kg		51	10 - 132	1	30
4-Nitroaniline	1670	811.4		ug/Kg		49	10 - 150	2	30
4-Nitrophenol	1670	857.6		ug/Kg		51	10 - 123	1	30
Acenaphthene	1670	780.2		ug/Kg		47	35 - 93	1	30
Acenaphthylene	1670	772.3		ug/Kg		46	36 - 94	1	30
Aniline	1670	418.1		ug/Kg		25	13 - 78	4	30
Anthracene	1670	882.0		ug/Kg		53	34 - 120	2	30
Azobenzene/Diphenyldiazene	1670	763.1		ug/Kg		46	35 - 92	1	30
Benzidine	1670	219.3	J	ug/Kg		13	10 - 95	18	30
Benzo[a]anthracene	1670	869.0		ug/Kg		52	39 - 113	3	30
Benzo[a]pyrene	1670	843.2		ug/Kg		51	38 - 109	1	30
Benzo[b]fluoranthene	1670	839.6		ug/Kg		50	29 - 113	1	30
Benzo[g,h,i]perylene	1670	831.4		ug/Kg		50	35 - 108	3	30
Benzo[k]fluoranthene	1670	815.7		ug/Kg		49	28 - 112	4	30
Benzoic acid	1670	501.5		ug/Kg		30	10 - 82	14	30
Benzyl alcohol	1670	725.0		ug/Kg		44	14 - 105	3	30
Bis(2-chloroethoxy)methane	1670	732.6		ug/Kg		44	10 - 119	4	30
Bis(2-chloroethyl)ether	1670	727.6		ug/Kg		44	10 - 111	1	30
bis (2-chloroisopropyl) ether	1670	690.7		ug/Kg		41	10 - 122	3	30
Bis(2-ethylhexyl) phthalate	1670	851.9		ug/Kg		51	10 - 150	3	30
Butyl benzyl phthalate	1670	847.8		ug/Kg		51	10 - 150	3	30
Carbazole	1670	805.6		ug/Kg		48	38 - 106	3	30
Chrysene	1670	863.0		ug/Kg		52	38 - 109	3	30
Dibenz(a,h)anthracene	1670	840.7		ug/Kg		50	34 - 103	0	30
Dibenzofuran	1670	818.8		ug/Kg		49	17 - 121	2	30
Diethyl phthalate	1670	814.9		ug/Kg		49	10 - 139	0	30
Dimethyl phthalate	1670	810.7		ug/Kg		49	11 - 135	0	30
Di-n-butyl phthalate	1670	857.1		ug/Kg		51	10 - 150	3	30
Di-n-octyl phthalate	1670	853.6		ug/Kg		51	10 - 150	1	30
Fluoranthene	1670	846.6		ug/Kg		51	36 - 111	3	30
Fluorene	1670	857.8		ug/Kg		51	35 - 98	1	30
Hexachlorobenzene	1670	792.8		ug/Kg		48	20 - 125	1	30
Hexachlorobutadiene	1670	712.6		ug/Kg		43	12 - 108	5	30
Hexachlorocyclopentadiene	1670	819.8		ug/Kg		49	18 - 128	4	30
Hexachloroethane	1670	770.5		ug/Kg		46	21 - 105	3	30
Indeno[1,2,3-cd]pyrene	1670	830.0		ug/Kg		50	32 - 103	1	30
Isophorone	1670	693.3		ug/Kg		42	10 - 96	4	30
Naphthalene	1670	844.8		ug/Kg		51	31 - 94	4	30
Nitrobenzene	1670	830.0		ug/Kg		50	13 - 117	6	30
N-Nitrosodimethylamine	1670	893.9		ug/Kg		54	10 - 100	3	30

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

Lab Sample ID: LCSD 620-42706/3-A
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42706

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine			1670	799.3		ug/Kg		48	10 - 134	2	30
N-Nitrosodiphenylamine			1670	867.0		ug/Kg		52	14 - 139	0	30
Pentachloronitrobenzene			1670	847.1		ug/Kg		51	19 - 108	1	30
Pentachlorophenol			1670	748.1		ug/Kg		45	20 - 93	4	30
Phenanthrene			1670	834.8		ug/Kg		50	35 - 101	1	30
Phenol			1670	854.7		ug/Kg		51	34 - 94	0	30
Pyrene			1670	868.2		ug/Kg		52	31 - 116	3	30
Pyridine			1670	470.6		ug/Kg		28	10 - 94	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*50*		*30 - 130*
2-Fluorophenol (Surr)	*57*		*15 - 110*
Nitrobenzene-d5 (Surr)	*50*		*30 - 130*
Phenol-d5 (Surr)	*52*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*52*		*15 - 110*
Terphenyl-d14 (Surr)	*49*		*30 - 130*

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	ND		1890	1121		ug/Kg	☼	59	40 - 140
1,2,4-Trichlorobenzene	ND		1890	1107		ug/Kg	☼	58	40 - 140
1,2-Dichlorobenzene	ND		1890	1069		ug/Kg	☼	56	40 - 140
1,3-Dichlorobenzene	ND		1890	1112		ug/Kg	☼	59	40 - 140
1,4-Dichlorobenzene	ND		1890	1104		ug/Kg	☼	58	40 - 140
1-Methylnaphthalene	ND		1890	1165		ug/Kg	☼	62	40 - 140
2,4,5-Trichlorophenol	ND		1890	1241		ug/Kg	☼	66	30 - 130
2,4,6-Trichlorophenol	ND		1890	1290		ug/Kg	☼	68	30 - 130
2,4-Dichlorophenol	ND		1890	1183		ug/Kg	☼	62	30 - 130
2,4-Dimethylphenol	ND		1890	1092		ug/Kg	☼	58	30 - 130
2,4-Dinitrophenol	ND		1890	ND		ug/Kg	☼	35	30 - 130
2,4-Dinitrotoluene	ND		1890	1161		ug/Kg	☼	61	40 - 140
2,6-Dinitrotoluene	ND		1890	1160		ug/Kg	☼	61	40 - 140
2-Chloronaphthalene	ND		1890	1193		ug/Kg	☼	63	40 - 140
2-Chlorophenol	ND		1890	1147		ug/Kg	☼	61	30 - 130
2-Methylnaphthalene	ND		1890	1176		ug/Kg	☼	62	40 - 140
2-Methylphenol	ND		1890	1166		ug/Kg	☼	62	30 - 130
2-Nitroaniline	ND		1890	1249		ug/Kg	☼	66	40 - 140
2-Nitrophenol	ND		1890	1014		ug/Kg	☼	54	30 - 130
3 & 4 Methylphenol	ND		1890	1133		ug/Kg	☼	60	30 - 130
3,3'-Dichlorobenzidine	ND		1890	1151		ug/Kg	☼	61	40 - 140
3-Nitroaniline	ND	F1	1890	723.7	F1	ug/Kg	☼	38	40 - 140
4,6-Dinitro-2-methylphenol	ND		1890	881.3		ug/Kg	☼	47	30 - 130
4-Bromophenyl phenyl ether	ND		1890	1144		ug/Kg	☼	60	40 - 140
4-Chloro-3-methylphenol	ND		1890	1196		ug/Kg	☼	63	30 - 130
4-Chloroaniline	ND	F1	1890	627.1	F1	ug/Kg	☼	33	40 - 140

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

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4-Chlorophenyl phenyl ether	ND		1890	1204		ug/Kg	☼	64	40 - 140
4-Nitroaniline	ND		1890	1180		ug/Kg	☼	62	40 - 140
4-Nitrophenol	ND		1890	1291		ug/Kg	☼	68	30 - 130
Acenaphthene	ND		1890	1124		ug/Kg	☼	59	40 - 140
Acenaphthylene	ND		1890	1106		ug/Kg	☼	58	40 - 140
Aniline	ND	F1	1890	702.0	F1	ug/Kg	☼	37	40 - 140
Anthracene	ND		1890	1271		ug/Kg	☼	67	40 - 140
Azobenzene/Diphenyldiazene	ND		1890	1069		ug/Kg	☼	56	40 - 140
Benzidine	ND	F1	1890	ND	F1	ug/Kg	☼	20	40 - 140
Benzo[a]anthracene	ND		1890	1238		ug/Kg	☼	65	40 - 140
Benzo[a]pyrene	ND		1890	1219		ug/Kg	☼	64	40 - 140
Benzo[b]fluoranthene	ND		1890	1155		ug/Kg	☼	61	40 - 140
Benzo[g,h,i]perylene	ND		1890	1218		ug/Kg	☼	64	40 - 140
Benzo[k]fluoranthene	ND		1890	1179		ug/Kg	☼	62	40 - 140
Benzoic acid	ND		1890	1085		ug/Kg	☼	57	30 - 130
Benzyl alcohol	ND		1890	981.6		ug/Kg	☼	52	40 - 140
Bis(2-chloroethoxy)methane	ND		1890	1043		ug/Kg	☼	55	40 - 140
Bis(2-chloroethyl)ether	ND		1890	1075		ug/Kg	☼	57	40 - 140
bis (2-chloroisopropyl) ether	ND		1890	923.7		ug/Kg	☼	49	40 - 140
Bis(2-ethylhexyl) phthalate	ND		1890	1203		ug/Kg	☼	64	40 - 140
Butyl benzyl phthalate	ND		1890	1218		ug/Kg	☼	64	40 - 140
Carbazole	ND		1890	1185		ug/Kg	☼	63	40 - 140
Chrysene	ND		1890	1231		ug/Kg	☼	65	40 - 140
Dibenz(a,h)anthracene	ND		1890	1203		ug/Kg	☼	64	40 - 140
Dibenzofuran	ND		1890	1178		ug/Kg	☼	62	40 - 140
Diethyl phthalate	ND		1890	1182		ug/Kg	☼	62	40 - 140
Dimethyl phthalate	ND		1890	1174		ug/Kg	☼	62	40 - 140
Di-n-butyl phthalate	ND		1890	1252		ug/Kg	☼	66	40 - 140
Di-n-octyl phthalate	ND		1890	1184		ug/Kg	☼	63	40 - 140
Fluoranthene	ND		1890	1235		ug/Kg	☼	65	40 - 140
Fluorene	ND		1890	1224		ug/Kg	☼	65	40 - 140
Hexachlorobenzene	ND		1890	1144		ug/Kg	☼	60	40 - 140
Hexachlorobutadiene	ND		1890	1021		ug/Kg	☼	54	40 - 140
Hexachlorocyclopentadiene	ND		1890	1159		ug/Kg	☼	61	40 - 140
Hexachloroethane	ND		1890	1076		ug/Kg	☼	57	40 - 140
Indeno[1,2,3-cd]pyrene	ND		1890	1200		ug/Kg	☼	63	40 - 140
Isophorone	ND		1890	979.0		ug/Kg	☼	52	40 - 140
Naphthalene	ND		1890	1180		ug/Kg	☼	62	40 - 140
Nitrobenzene	ND		1890	1081		ug/Kg	☼	57	40 - 140
N-Nitrosodimethylamine	ND		1890	1147		ug/Kg	☼	61	40 - 140
N-Nitrosodi-n-propylamine	ND		1890	1104		ug/Kg	☼	58	40 - 140
N-Nitrosodiphenylamine	ND		1890	1220		ug/Kg	☼	64	40 - 140
Pentachloronitrobenzene	ND		1890	1162		ug/Kg	☼	61	40 - 140
Pentachlorophenol	ND		1890	1203		ug/Kg	☼	64	30 - 130
Phenanthrene	ND		1890	1194		ug/Kg	☼	63	40 - 140
Phenol	ND		1890	1176		ug/Kg	☼	62	30 - 130
Pyrene	ND		1890	1228		ug/Kg	☼	65	40 - 140
Pyridine	ND	F1	1890	735.2	F1	ug/Kg	☼	39	40 - 140

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

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42706

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*64*		*30 - 130*
2-Fluorophenol (Surr)	*74*		*15 - 110*
Nitrobenzene-d5 (Surr)	*59*		*30 - 130*
Phenol-d5 (Surr)	*65*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*68*		*15 - 110*
Terphenyl-d14 (Surr)	*62*		*30 - 130*

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	ND		1850	1045		ug/Kg	☼	57	40 - 140	7	30
1,2,4-Trichlorobenzene	ND		1850	1040		ug/Kg	☼	56	40 - 140	6	30
1,2-Dichlorobenzene	ND		1850	1009		ug/Kg	☼	55	40 - 140	6	30
1,3-Dichlorobenzene	ND		1850	1065		ug/Kg	☼	58	40 - 140	4	30
1,4-Dichlorobenzene	ND		1850	1053		ug/Kg	☼	57	40 - 140	5	30
1-Methylnaphthalene	ND		1850	1098		ug/Kg	☼	59	40 - 140	6	30
2,4,5-Trichlorophenol	ND		1850	1195		ug/Kg	☼	65	30 - 130	4	30
2,4,6-Trichlorophenol	ND		1850	1245		ug/Kg	☼	67	30 - 130	4	30
2,4-Dichlorophenol	ND		1850	1132		ug/Kg	☼	61	30 - 130	4	30
2,4-Dimethylphenol	ND		1850	1057		ug/Kg	☼	57	30 - 130	3	30
2,4-Dinitrophenol	ND		1850	ND		ug/Kg	☼	38	30 - 130	5	30
2,4-Dinitrotoluene	ND		1850	1116		ug/Kg	☼	60	40 - 140	4	30
2,6-Dinitrotoluene	ND		1850	1105		ug/Kg	☼	60	40 - 140	5	30
2-Chloronaphthalene	ND		1850	1132		ug/Kg	☼	61	40 - 140	5	30
2-Chlorophenol	ND		1850	1132		ug/Kg	☼	61	30 - 130	1	30
2-Methylnaphthalene	ND		1850	1097		ug/Kg	☼	59	40 - 140	7	30
2-Methylphenol	ND		1850	1147		ug/Kg	☼	62	30 - 130	2	30
2-Nitroaniline	ND		1850	1245		ug/Kg	☼	67	40 - 140	0	30
2-Nitrophenol	ND		1850	902.8		ug/Kg	☼	49	30 - 130	12	30
3 & 4 Methylphenol	ND		1850	1123		ug/Kg	☼	61	30 - 130	1	30
3,3'-Dichlorobenzidine	ND		1850	1196		ug/Kg	☼	65	40 - 140	4	30
3-Nitroaniline	ND	F1	1850	786.8		ug/Kg	☼	43	40 - 140	8	30
4,6-Dinitro-2-methylphenol	ND		1850	874.9		ug/Kg	☼	47	30 - 130	1	30
4-Bromophenyl phenyl ether	ND		1850	1087		ug/Kg	☼	59	40 - 140	5	30
4-Chloro-3-methylphenol	ND		1850	1162		ug/Kg	☼	63	30 - 130	3	30
4-Chloroaniline	ND	F1	1850	676.8	F1	ug/Kg	☼	37	40 - 140	8	30
4-Chlorophenyl phenyl ether	ND		1850	1153		ug/Kg	☼	62	40 - 140	4	30
4-Nitroaniline	ND		1850	1186		ug/Kg	☼	64	40 - 140	0	30
4-Nitrophenol	ND		1850	1244		ug/Kg	☼	67	30 - 130	4	30
Acenaphthene	ND		1850	1072		ug/Kg	☼	58	40 - 140	5	30
Acenaphthylene	ND		1850	1066		ug/Kg	☼	58	40 - 140	4	30
Aniline	ND	F1	1850	718.1	F1	ug/Kg	☼	39	40 - 140	2	30
Anthracene	ND		1850	1212		ug/Kg	☼	66	40 - 140	5	30
Azobenzene/Diphenyldiazene	ND		1850	992.9		ug/Kg	☼	54	40 - 140	7	30
Benzidine	ND	F1	1850	ND	F1	ug/Kg	☼	16	40 - 140	24	30
Benzo[a]anthracene	ND		1850	1197		ug/Kg	☼	65	40 - 140	3	30

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

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42760

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[a]pyrene	ND		1850	1149		ug/Kg	☼	62	40 - 140	6	30
Benzo[b]fluoranthene	ND		1850	1123		ug/Kg	☼	61	40 - 140	3	30
Benzo[g,h,i]perylene	ND		1850	1146		ug/Kg	☼	62	40 - 140	6	30
Benzo[k]fluoranthene	ND		1850	1141		ug/Kg	☼	62	40 - 140	3	30
Benzoic acid	ND		1850	949.1		ug/Kg	☼	51	30 - 130	13	30
Benzyl alcohol	ND		1850	968.0		ug/Kg	☼	52	40 - 140	1	30
Bis(2-chloroethoxy)methane	ND		1850	1001		ug/Kg	☼	54	40 - 140	4	30
Bis(2-chloroethyl)ether	ND		1850	1044		ug/Kg	☼	56	40 - 140	3	30
bis (2-chloroisopropyl) ether	ND		1850	898.1		ug/Kg	☼	49	40 - 140	3	30
Bis(2-ethylhexyl) phthalate	ND		1850	1138		ug/Kg	☼	62	40 - 140	6	30
Butyl benzyl phthalate	ND		1850	1162		ug/Kg	☼	63	40 - 140	5	30
Carbazole	ND		1850	1128		ug/Kg	☼	61	40 - 140	5	30
Chrysene	ND		1850	1186		ug/Kg	☼	64	40 - 140	4	30
Dibenz(a,h)anthracene	ND		1850	1140		ug/Kg	☼	62	40 - 140	5	30
Dibenzofuran	ND		1850	1140		ug/Kg	☼	62	40 - 140	3	30
Diethyl phthalate	ND		1850	1136		ug/Kg	☼	62	40 - 140	4	30
Dimethyl phthalate	ND		1850	1143		ug/Kg	☼	62	40 - 140	3	30
Di-n-butyl phthalate	ND		1850	1168		ug/Kg	☼	63	40 - 140	7	30
Di-n-octyl phthalate	ND		1850	1124		ug/Kg	☼	61	40 - 140	5	30
Fluoranthene	ND		1850	1167		ug/Kg	☼	63	40 - 140	6	30
Fluorene	ND		1850	1174		ug/Kg	☼	64	40 - 140	4	30
Hexachlorobenzene	ND		1850	1081		ug/Kg	☼	59	40 - 140	6	30
Hexachlorobutadiene	ND		1850	939.4		ug/Kg	☼	51	40 - 140	8	30
Hexachlorocyclopentadiene	ND		1850	1057		ug/Kg	☼	57	40 - 140	9	30
Hexachloroethane	ND		1850	1030		ug/Kg	☼	56	40 - 140	4	30
Indeno[1,2,3-cd]pyrene	ND		1850	1136		ug/Kg	☼	61	40 - 140	5	30
Isophorone	ND		1850	934.3		ug/Kg	☼	51	40 - 140	5	30
Naphthalene	ND		1850	1126		ug/Kg	☼	61	40 - 140	5	30
Nitrobenzene	ND		1850	1039		ug/Kg	☼	56	40 - 140	4	30
N-Nitrosodimethylamine	ND		1850	1079		ug/Kg	☼	58	40 - 140	6	30
N-Nitrosodi-n-propylamine	ND		1850	1086		ug/Kg	☼	59	40 - 140	2	30
N-Nitrosodiphenylamine	ND		1850	1165		ug/Kg	☼	63	40 - 140	5	30
Pentachloronitrobenzene	ND		1850	1098		ug/Kg	☼	59	40 - 140	6	30
Pentachlorophenol	ND		1850	1144		ug/Kg	☼	62	30 - 130	5	30
Phenanthrene	ND		1850	1141		ug/Kg	☼	62	40 - 140	5	30
Phenol	ND		1850	1192		ug/Kg	☼	65	30 - 130	1	30
Pyrene	ND		1850	1188		ug/Kg	☼	64	40 - 140	3	30
Pyridine	ND	F1	1850	705.6	F1	ug/Kg	☼	38	40 - 140	4	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*60*		*30 - 130*
2-Fluorophenol (Surr)	*71*		*15 - 110*
Nitrobenzene-d5 (Surr)	*56*		*30 - 130*
Phenol-d5 (Surr)	*63*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*65*		*15 - 110*
Terphenyl-d14 (Surr)	*58*		*30 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 620-42660/3-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42660

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		5.00		mg/Kg		12/18/24 10:42	12/18/24 12:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*	*12/18/24 10:42*	*12/18/24 12:38*	*1*

Lab Sample ID: LCS 620-42660/1-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42660

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10			12.5	9.880		mg/Kg		79	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*

Lab Sample ID: LCSD 620-42660/2-A
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42660

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10			12.5	9.917		mg/Kg		79	70 - 130	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*105*		*70 - 130*

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10	ND		9.89	7.214		mg/Kg	☼	71	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*83*		*70 - 130*

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10	ND		11.4	9.340		mg/Kg	☼	80	70 - 130	26	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*92*		*70 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC) (Continued)

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10	ND	F1	16.7	11.49	F1	mg/Kg	☼	67	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*79*		*70 - 130*

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10	ND	F1	17.7	13.74		mg/Kg	☼	76	70 - 130	18	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*103*		*70 - 130*

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10	ND	F1 F2	16.0	11.94		mg/Kg	☼	72	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*116*		*70 - 130*

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42659

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42660

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10	ND	F1 F2	8.95	5.713	F1 F2	mg/Kg	☼	60	70 - 130	71	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*80*		*70 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 620-42671/1-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42671

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		13.3		mg/Kg		12/18/24 14:23	12/19/24 14:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*58*		*40 - 140*	*12/18/24 14:23*	*12/19/24 14:34*	*1*
1-Chlorooctadecane	*63*		*40 - 140*	*12/18/24 14:23*	*12/19/24 14:34*	*1*

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 620-42671/2-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42671

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			335	251.7		mg/Kg		75	33 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*77*		*40 - 140*
1-Chlorooctadecane	*79*		*40 - 140*

Lab Sample ID: LCSD 620-42671/3-A
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42671

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			335	239.8		mg/Kg		72	33 - 110	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*76*		*40 - 140*
1-Chlorooctadecane	*78*		*40 - 140*

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28	ND		374	299.4		mg/Kg	☼	80	40 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*79*		*40 - 140*
1-Chlorooctadecane	*78*		*40 - 140*

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	ND		343	238.3		mg/Kg	☼	70	40 - 140	23	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*70*		*40 - 140*
1-Chlorooctadecane	*72*		*40 - 140*

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28	ND		342	247.0		mg/Kg	☼	72	40 - 140		

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42671

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*65*		*40 - 140*
1-Chlorooctadecane	*67*		*40 - 140*

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42726

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	ND		401	280.1		mg/Kg	☼	70	40 - 140	13	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	*71*		*40 - 140*
1-Chlorooctadecane	*72*		*40 - 140*

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42807

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	ND		377	274.2		mg/Kg	☼	73	40 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*69*		*40 - 140*
1-Chlorooctadecane	*70*		*40 - 140*

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42807

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42671

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	ND		385	278.0		mg/Kg	☼	72	40 - 140	1	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	*71*		*40 - 140*
1-Chlorooctadecane	*75*		*40 - 140*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 620-42628/1-A
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42628

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1221	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1232	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1242	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1248	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 620-42628/1-A
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42628

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1260	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1262	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1
PCB-1268	ND		20.0		ug/Kg		12/17/24 16:29	12/18/24 18:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*95*		*30 - 150*	*12/17/24 16:29*	*12/18/24 18:32*	*1*
Tetrachloro-m-xylene	*97*		*30 - 150*	*12/17/24 16:29*	*12/18/24 18:32*	*1*
DCB Decachlorobiphenyl (Surr)	*143*		*30 - 150*	*12/17/24 16:29*	*12/18/24 18:32*	*1*
DCB Decachlorobiphenyl (Surr)	*131*		*30 - 150*	*12/17/24 16:29*	*12/18/24 18:32*	*1*

Lab Sample ID: LCS 620-42628/2-A
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42628

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			167	139.1		ug/Kg		83	59 - 130		
PCB-1016			167	140.5		ug/Kg		84	59 - 130		
PCB-1260			167	140.5		ug/Kg		84	58 - 134		
PCB-1260			167	140.8		ug/Kg		84	58 - 134		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*76*		*30 - 150*
Tetrachloro-m-xylene	*78*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*118*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*109*		*30 - 150*

Lab Sample ID: LCSD 620-42628/3-A
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42628

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			167	173.7		ug/Kg		104	59 - 130	22	30
PCB-1016			167	174.4		ug/Kg		105	59 - 130	22	30
PCB-1260			167	152.5		ug/Kg		92	58 - 134	8	30
PCB-1260			167	148.6		ug/Kg		89	58 - 134	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*95*		*30 - 150*
Tetrachloro-m-xylene	*97*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*123*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*110*		*30 - 150*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	ND		180	159.9		ug/Kg	☼	89	40 - 140
PCB-1260	ND		180	140.9		ug/Kg	☼	78	40 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*78*		*30 - 150*
Tetrachloro-m-xylene	*81*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*106*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*96*		*30 - 150*

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	ND		185	156.4		ug/Kg	☼	85	40 - 140	2	30
PCB-1260	ND		185	139.6		ug/Kg	☼	76	40 - 140	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*78*		*30 - 150*
Tetrachloro-m-xylene	*81*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*102*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*92*		*30 - 150*

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	ND		194	170.1		ug/Kg	☼	88	40 - 140
PCB-1260	ND		194	153.3		ug/Kg	☼	79	40 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*79*		*30 - 150*
Tetrachloro-m-xylene	*81*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*107*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*95*		*30 - 150*

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	ND		194	179.2		ug/Kg	☼	93	40 - 140	5	30
PCB-1260	ND		194	161.3		ug/Kg	☼	83	40 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*83*		*30 - 150*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42628

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	*85*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*113*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*99*		*30 - 150*

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	ND		192	158.1		ug/Kg	☼	82	40 - 140
PCB-1260	ND		192	153.5		ug/Kg	☼	80	40 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	*75*		*30 - 150*
Tetrachloro-m-xylene	*78*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*112*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*103*		*30 - 150*

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42640

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	ND		172	125.5		ug/Kg	☼	73	40 - 140	23	30
PCB-1260	ND		172	121.2		ug/Kg	☼	70	40 - 140	23	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	*64*		*30 - 150*
Tetrachloro-m-xylene	*66*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*99*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*92*		*30 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 620-42609/1-A
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42609

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.21	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Arsenic	ND		0.362	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Beryllium	ND		0.121	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Cadmium	ND		0.121	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Chromium	ND		0.241	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Copper	ND		0.241	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Lead	ND		0.362	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Nickel	ND		0.241	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Selenium	ND		0.362	mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 620-42609/1-A
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42609

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.362		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Thallium	ND		0.724		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2
Zinc	ND		0.724		mg/Kg		12/17/24 11:58	12/18/24 13:12	0.2

Lab Sample ID: LCSSRM 620-42609/2-A ^5
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42609

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			121	92.30		mg/Kg		76.3	0.0 - 200.8		
Arsenic			242	235.3		mg/Kg		97.3	81.8 - 118.6		
Beryllium			160	159.5		mg/Kg		99.7	82.5 - 117.5		
Cadmium			84.3	87.50		mg/Kg		103.8	82.2 - 117.8		
Chromium			239	220.3		mg/Kg		92.2	72.4 - 106.3		
Copper			217	201.2		mg/Kg		92.7	74.7 - 105.1		
Lead			194	202.3		mg/Kg		104.3	82.0 - 118.6		
Nickel			298	306.9		mg/Kg		103.0	82.2 - 117.8		
Selenium			272	264.4		mg/Kg		97.2	80.1 - 119.5		
Silver			76.7	70.01		mg/Kg		91.3	79.5 - 120.5		
Thallium			108	112.0		mg/Kg		103.7	80.0 - 119.4		
Zinc			236	238.8		mg/Kg		101.2	80.1 - 120.3		

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42609

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		79.8	72.19		mg/Kg	☼	90	75 - 125
Arsenic	ND		79.8	77.94		mg/Kg	☼	97	75 - 125
Beryllium	ND		79.8	77.20		mg/Kg	☼	97	75 - 125
Cadmium	ND		79.8	80.01		mg/Kg	☼	100	75 - 125
Chromium	ND		79.8	85.55		mg/Kg	☼	106	75 - 125
Copper	3.07		79.8	76.88		mg/Kg	☼	92	75 - 125
Lead	ND		79.8	85.60		mg/Kg	☼	106	75 - 125
Nickel	ND		79.8	82.83		mg/Kg	☼	102	75 - 125
Selenium	ND		79.8	77.30		mg/Kg	☼	97	75 - 125
Silver	ND		79.8	74.11		mg/Kg	☼	93	75 - 125
Thallium	ND		79.8	76.66		mg/Kg	☼	96	75 - 125
Zinc	11.7		79.8	97.94		mg/Kg	☼	108	75 - 125

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42676

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42609

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		84.3	78.48		mg/Kg	☼	93	75 - 125	8	20
Arsenic	ND		84.3	81.96		mg/Kg	☼	96	75 - 125	5	20
Beryllium	ND		84.3	81.91		mg/Kg	☼	97	75 - 125	6	20
Cadmium	ND		84.3	84.91		mg/Kg	☼	101	75 - 125	6	20
Chromium	ND		84.3	88.14		mg/Kg	☼	103	75 - 125	3	20
Copper	3.07		84.3	82.63		mg/Kg	☼	94	75 - 125	7	20
Lead	ND		84.3	90.61		mg/Kg	☼	106	75 - 125	6	20
Nickel	ND		84.3	86.68		mg/Kg	☼	102	75 - 125	5	20
Selenium	ND		84.3	81.90		mg/Kg	☼	97	75 - 125	6	20
Silver	ND		84.3	78.19		mg/Kg	☼	93	75 - 125	5	20
Thallium	ND		84.3	84.54		mg/Kg	☼	100	75 - 125	10	20
Zinc	11.7		84.3	99.04		mg/Kg	☼	104	75 - 125	1	20

Lab Sample ID: MB 620-42757/1-A
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42757

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		4.59		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Arsenic	ND		1.38		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Beryllium	ND		0.459		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Cadmium	ND		0.459		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Chromium	ND		0.918		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Copper	ND		0.918		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Lead	ND		1.38		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Nickel	ND		0.918		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Selenium	ND		1.38		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Silver	ND		1.38		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Thallium	ND		2.75		mg/Kg		12/20/24 10:02	12/23/24 13:55	1
Zinc	ND		2.75		mg/Kg		12/20/24 10:02	12/23/24 13:55	1

Lab Sample ID: LCSSRM 620-42757/2-A ^6
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42757

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			121	79.89		mg/Kg		66.0	0.0 - 200.8		
Arsenic			242	233.6		mg/Kg		96.5	81.8 - 118.6		
Beryllium			160	133.7		mg/Kg		83.6	82.5 - 117.5		
Cadmium			84.3	75.99		mg/Kg		90.1	82.2 - 117.8		
Chromium			239	189.1		mg/Kg		79.1	72.4 - 106.3		
Copper			217	206.6		mg/Kg		95.2	74.7 - 105.1		
Lead			194	190.6		mg/Kg		98.2	82.0 - 118.6		

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 620-42757/2-A ^6
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42757

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Nickel			298	285.4		mg/Kg		95.8	82.2 - 117.8		
Selenium			272	266.2		mg/Kg		97.9	80.1 - 119.5		
Silver			76.7	71.20		mg/Kg		92.8	79.5 - 120.5		
Thallium			108	115.6		mg/Kg		107.1	80.0 - 119.4		
Zinc			236	256.9		mg/Kg		108.9	80.1 - 120.3		

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42757

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	ND		72.2	59.74		mg/Kg	☼	83	75 - 125		
Arsenic	ND		72.2	76.50		mg/Kg	☼	105	75 - 125		
Beryllium	ND		72.2	80.81		mg/Kg	☼	111	75 - 125		
Cadmium	ND		72.2	77.47		mg/Kg	☼	107	75 - 125		
Chromium	3.55		72.2	74.78		mg/Kg	☼	99	75 - 125		
Copper	ND		72.2	82.00		mg/Kg	☼	114	75 - 125		
Lead	ND		72.2	78.03		mg/Kg	☼	106	75 - 125		
Nickel	3.63		72.2	80.69		mg/Kg	☼	107	75 - 125		
Selenium	ND		72.2	74.01		mg/Kg	☼	103	75 - 125		
Silver	ND		72.2	76.91		mg/Kg	☼	107	75 - 125		
Thallium	ND		72.2	71.19		mg/Kg	☼	99	75 - 125		
Zinc	19.0		72.2	107.4		mg/Kg	☼	122	75 - 125		

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42757

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		74.6	59.71		mg/Kg	☼	80	75 - 125	0	20
Arsenic	ND		74.6	74.05		mg/Kg	☼	98	75 - 125	3	20
Beryllium	ND		74.6	80.95		mg/Kg	☼	108	75 - 125	0	20
Cadmium	ND		74.6	78.06		mg/Kg	☼	104	75 - 125	1	20
Chromium	3.55		74.6	75.29		mg/Kg	☼	96	75 - 125	1	20
Copper	ND		74.6	82.61		mg/Kg	☼	111	75 - 125	1	20
Lead	ND		74.6	77.11		mg/Kg	☼	101	75 - 125	1	20
Nickel	3.63		74.6	81.01		mg/Kg	☼	104	75 - 125	0	20
Selenium	ND		74.6	72.07		mg/Kg	☼	97	75 - 125	3	20
Silver	ND		74.6	77.72		mg/Kg	☼	104	75 - 125	1	20
Thallium	ND		74.6	72.11		mg/Kg	☼	97	75 - 125	1	20
Zinc	19.0		74.6	95.34		mg/Kg	☼	102	75 - 125	12	20

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42757

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		72.7	57.31		mg/Kg	☼	79	75 - 125
Arsenic	ND		72.7	62.52		mg/Kg	☼	86	75 - 125
Beryllium	ND		72.7	67.69		mg/Kg	☼	93	75 - 125
Cadmium	ND		72.7	66.27		mg/Kg	☼	91	75 - 125
Chromium	ND		72.7	61.44		mg/Kg	☼	83	75 - 125
Copper	ND		72.7	69.44		mg/Kg	☼	95	75 - 125
Lead	ND		72.7	66.61		mg/Kg	☼	90	75 - 125
Nickel	ND		72.7	65.70		mg/Kg	☼	89	75 - 125
Selenium	ND		72.7	61.25		mg/Kg	☼	84	75 - 125
Silver	ND		72.7	65.65		mg/Kg	☼	90	75 - 125
Thallium	ND		72.7	58.47		mg/Kg	☼	80	75 - 125
Zinc	ND		72.7	71.34		mg/Kg	☼	92	75 - 125

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42840

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42757

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		71.0	61.48		mg/Kg	☼	87	75 - 125	7	20
Arsenic	ND		71.0	68.61		mg/Kg	☼	97	75 - 125	9	20
Beryllium	ND		71.0	73.62		mg/Kg	☼	104	75 - 125	8	20
Cadmium	ND		71.0	71.69		mg/Kg	☼	101	75 - 125	8	20
Chromium	ND		71.0	68.00		mg/Kg	☼	94	75 - 125	10	20
Copper	ND		71.0	73.10		mg/Kg	☼	102	75 - 125	5	20
Lead	ND		71.0	72.17		mg/Kg	☼	100	75 - 125	8	20
Nickel	ND		71.0	71.62		mg/Kg	☼	100	75 - 125	9	20
Selenium	ND		71.0	68.11		mg/Kg	☼	96	75 - 125	11	20
Silver	ND		71.0	70.37		mg/Kg	☼	99	75 - 125	7	20
Thallium	ND		71.0	62.83		mg/Kg	☼	89	75 - 125	7	20
Zinc	ND		71.0	76.28		mg/Kg	☼	101	75 - 125	7	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 620-42657/1-A
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42657

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0500		mg/Kg		12/18/24 10:08	12/18/24 15:44	1

Lab Sample ID: LCSSRM 620-42657/2-A ^50
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42657

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Mercury			22.8	23.42		mg/Kg		102.7	70.6 - 129.4

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: 620-22964-6 MS
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.194	0.1786		mg/Kg	☼	92	75 - 125

Lab Sample ID: 620-22964-6 MSD
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.189	0.1702		mg/Kg	☼	90	75 - 125	5	20

Lab Sample ID: 620-22964-7 MS
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.229	0.2098		mg/Kg	☼	92	75 - 125

Lab Sample ID: 620-22964-7 MSD
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-4 (13-15)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.227	0.2100		mg/Kg	☼	93	75 - 125	0	20

Lab Sample ID: 620-22964-8 MS
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.194	0.1833		mg/Kg	☼	95	75 - 125

Lab Sample ID: 620-22964-8 MSD
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-2 (9-11)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.187	0.1745		mg/Kg	☼	93	75 - 125	5	20

Lab Sample ID: 620-22964-6 DU
Matrix: Solid
Analysis Batch: 42773

Client Sample ID: SB-3 (7-9)
Prep Type: Total/NA
Prep Batch: 42657

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND		ND		mg/Kg	☼	NC	20

GC/MS VOA

Pre Prep Batch: 42571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	Frozen Preserve	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	Frozen Preserve	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	Frozen Preserve	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	Frozen Preserve	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	Frozen Preserve	
620-22964-5 - RE	MW-104 (7-9)	Total/NA	Solid	Frozen Preserve	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	Frozen Preserve	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	Frozen Preserve	
620-22964-9	Trip Blank	Total/NA	Solid	Frozen Preserve	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	Frozen Preserve	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	Frozen Preserve	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	Frozen Preserve	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	Frozen Preserve	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	Frozen Preserve	

Analysis Batch: 42692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	8260C	42770
620-22964-3	MW-105 (9-11)	Total/NA	Solid	8260C	42770
620-22964-4	MW-106 (9-11)	Total/NA	Solid	8260C	42770
620-22964-5	MW-104 (7-9)	Total/NA	Solid	8260C	42770
620-22964-7	SB-4 (13-15)	Total/NA	Solid	8260C	42770
620-22964-8	SB-2 (9-11)	Total/NA	Solid	8260C	42770
620-22964-9	Trip Blank	Total/NA	Solid	8260C	42770
MB 620-42770/3-A	Method Blank	Total/NA	Solid	8260C	42770
LCS 620-42770/1-A	Lab Control Sample	Total/NA	Solid	8260C	42770
LCSD 620-42770/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	42770

Prep Batch: 42770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	5035	42571
620-22964-3	MW-105 (9-11)	Total/NA	Solid	5035	42571
620-22964-4	MW-106 (9-11)	Total/NA	Solid	5035	42571
620-22964-5	MW-104 (7-9)	Total/NA	Solid	5035	42571
620-22964-7	SB-4 (13-15)	Total/NA	Solid	5035	42571
620-22964-8	SB-2 (9-11)	Total/NA	Solid	5035	42571
620-22964-9	Trip Blank	Total/NA	Solid	5035	42571

GC/MS VOA (Continued)

Prep Batch: 42770 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 620-42770/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42770/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42770/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	5035	42571
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	5035	42571
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	5035	42571
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	5035	42571
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	5035	42571
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	5035	42571

Analysis Batch: 42803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	8260C	42825
620-22964-5 - RE	MW-104 (7-9)	Total/NA	Solid	8260C	42825
620-22964-6	SB-3 (7-9)	Total/NA	Solid	8260C	42825
MB 620-42770/3-A	Method Blank	Total/NA	Solid	8260C	42770
LCS 620-42825/1-A	Lab Control Sample	Total/NA	Solid	8260C	42825
LCSD 620-42825/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	42825
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	8260C	42770
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	8260C	42770
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	8260C	42770
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	8260C	42770
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	8260C	42770
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	8260C	42770

Prep Batch: 42825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	5035	42571
620-22964-5 - RE	MW-104 (7-9)	Total/NA	Solid	5035	42571
620-22964-6	SB-3 (7-9)	Total/NA	Solid	5035	42571
LCS 620-42825/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42825/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 42656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-4	MW-106 (9-11)	Total/NA	Solid	3546	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	3546	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	3546	
MB 620-42656/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	3546	

GC/MS Semi VOA

Analysis Batch: 42700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-4	MW-106 (9-11)	Total/NA	Solid	8270D	42656
620-22964-5	MW-104 (7-9)	Total/NA	Solid	8270D	42656
MB 620-42656/1-A	Method Blank	Total/NA	Solid	8270D	42656
LCS 620-42656/2-A	Lab Control Sample	Total/NA	Solid	8270D	42656
LCSD 620-42656/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42656

Prep Batch: 42706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	3546	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	3546	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	3546	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	3546	
MB 620-42706/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42706/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42706/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	3546	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	3546	

Analysis Batch: 42760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	8270D	42706
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	8270D	42706
620-22964-3	MW-105 (9-11)	Total/NA	Solid	8270D	42706
620-22964-6	SB-3 (7-9)	Total/NA	Solid	8270D	42656
620-22964-8	SB-2 (9-11)	Total/NA	Solid	8270D	42706
MB 620-42706/1-A	Method Blank	Total/NA	Solid	8270D	42706
LCS 620-42706/2-A	Lab Control Sample	Total/NA	Solid	8270D	42706
LCSD 620-42706/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	42706
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	8270D	42656
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	8270D	42706
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	8270D	42706

Analysis Batch: 42855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-7	SB-4 (13-15)	Total/NA	Solid	8270D	42656
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	8270D	42656

Analysis Batch: 42943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	8270D	42656
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	8270D	42656

GC VOA

Analysis Batch: 42659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	8015D	42660
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	8015D	42660
620-22964-3	MW-105 (9-11)	Total/NA	Solid	8015D	42660
620-22964-4	MW-106 (9-11)	Total/NA	Solid	8015D	42660
620-22964-5	MW-104 (7-9)	Total/NA	Solid	8015D	42660

GC VOA (Continued)

Analysis Batch: 42659 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-6	SB-3 (7-9)	Total/NA	Solid	8015D	42660
620-22964-7	SB-4 (13-15)	Total/NA	Solid	8015D	42660
620-22964-8	SB-2 (9-11)	Total/NA	Solid	8015D	42660
MB 620-42660/3-A	Method Blank	Total/NA	Solid	8015D	42660
LCS 620-42660/1-A	Lab Control Sample	Total/NA	Solid	8015D	42660
LCSD 620-42660/2-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42660
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	8015D	42660
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	8015D	42660
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	8015D	42660
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	8015D	42660
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	8015D	42660
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	8015D	42660

Prep Batch: 42660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	5035	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	5035	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	5035	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	5035	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	5035	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	5035	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	5035	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	5035	
MB 620-42660/3-A	Method Blank	Total/NA	Solid	5035	
LCS 620-42660/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 620-42660/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	5035	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	5035	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	5035	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	5035	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	5035	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 42628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	3546	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	3546	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	3546	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	3546	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	3546	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	3546	
MB 620-42628/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42628/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42628/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 42628 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	3546	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	3546	

Analysis Batch: 42640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	8082A	42628
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	8082A	42628
620-22964-3	MW-105 (9-11)	Total/NA	Solid	8082A	42628
620-22964-4	MW-106 (9-11)	Total/NA	Solid	8082A	42628
620-22964-5	MW-104 (7-9)	Total/NA	Solid	8082A	42628
620-22964-6	SB-3 (7-9)	Total/NA	Solid	8082A	42628
620-22964-7	SB-4 (13-15)	Total/NA	Solid	8082A	42628
620-22964-8	SB-2 (9-11)	Total/NA	Solid	8082A	42628
MB 620-42628/1-A	Method Blank	Total/NA	Solid	8082A	42628
LCS 620-42628/2-A	Lab Control Sample	Total/NA	Solid	8082A	42628
LCSD 620-42628/3-A	Lab Control Sample Dup	Total/NA	Solid	8082A	42628
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	8082A	42628
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	8082A	42628
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	8082A	42628
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	8082A	42628
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	8082A	42628
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	8082A	42628

Prep Batch: 42671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	3546	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	3546	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	3546	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	3546	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	3546	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	3546	
MB 620-42671/1-A	Method Blank	Total/NA	Solid	3546	
LCS 620-42671/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 620-42671/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	3546	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	3546	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	3546	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	3546	

Analysis Batch: 42726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	8015D	42671
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	8015D	42671
620-22964-3	MW-105 (9-11)	Total/NA	Solid	8015D	42671
620-22964-4	MW-106 (9-11)	Total/NA	Solid	8015D	42671
620-22964-5	MW-104 (7-9)	Total/NA	Solid	8015D	42671

GC Semi VOA (Continued)

Analysis Batch: 42726 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-6	SB-3 (7-9)	Total/NA	Solid	8015D	42671
620-22964-7	SB-4 (13-15)	Total/NA	Solid	8015D	42671
MB 620-42671/1-A	Method Blank	Total/NA	Solid	8015D	42671
LCS 620-42671/2-A	Lab Control Sample	Total/NA	Solid	8015D	42671
LCSD 620-42671/3-A	Lab Control Sample Dup	Total/NA	Solid	8015D	42671
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	8015D	42671
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	8015D	42671
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	8015D	42671
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	8015D	42671

Analysis Batch: 42807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-8	SB-2 (9-11)	Total/NA	Solid	8015D	42671
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	8015D	42671
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	8015D	42671

Metals

Prep Batch: 42609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	3050B	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	3050B	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	3050B	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	3050B	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	3050B	
MB 620-42609/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 620-42609/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	3050B	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	3050B	

Prep Batch: 42657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	7471B	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	7471B	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	7471B	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	7471B	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	7471B	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	7471B	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	7471B	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	7471B	
MB 620-42657/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 620-42657/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	7471B	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	7471B	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	7471B	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	7471B	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	7471B	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	7471B	
620-22964-6 DU	SB-3 (7-9)	Total/NA	Solid	7471B	

Metals

Analysis Batch: 42676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	6010D	42609
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	6010D	42609
620-22964-3	MW-105 (9-11)	Total/NA	Solid	6010D	42609
620-22964-4	MW-106 (9-11)	Total/NA	Solid	6010D	42609
620-22964-6	SB-3 (7-9)	Total/NA	Solid	6010D	42609
MB 620-42609/1-A	Method Blank	Total/NA	Solid	6010D	42609
LCSSRM 620-42609/2-A ^5	Lab Control Sample	Total/NA	Solid	6010D	42609
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	6010D	42609
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	6010D	42609

Prep Batch: 42757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-5	MW-104 (7-9)	Total/NA	Solid	3050B	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	3050B	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	3050B	
MB 620-42757/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 620-42757/2-A ^6	Lab Control Sample	Total/NA	Solid	3050B	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	3050B	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	3050B	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	3050B	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	3050B	

Analysis Batch: 42773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	7471B	42657
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	7471B	42657
620-22964-3	MW-105 (9-11)	Total/NA	Solid	7471B	42657
620-22964-4	MW-106 (9-11)	Total/NA	Solid	7471B	42657
620-22964-5	MW-104 (7-9)	Total/NA	Solid	7471B	42657
620-22964-6	SB-3 (7-9)	Total/NA	Solid	7471B	42657
620-22964-7	SB-4 (13-15)	Total/NA	Solid	7471B	42657
620-22964-8	SB-2 (9-11)	Total/NA	Solid	7471B	42657
MB 620-42657/1-A	Method Blank	Total/NA	Solid	7471B	42657
LCSSRM 620-42657/2-A ^50	Lab Control Sample	Total/NA	Solid	7471B	42657
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	7471B	42657
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	7471B	42657
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	7471B	42657
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	7471B	42657
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	7471B	42657
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	7471B	42657
620-22964-6 DU	SB-3 (7-9)	Total/NA	Solid	7471B	42657

Analysis Batch: 42840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-5	MW-104 (7-9)	Total/NA	Solid	6010D	42757
620-22964-7	SB-4 (13-15)	Total/NA	Solid	6010D	42757
620-22964-8	SB-2 (9-11)	Total/NA	Solid	6010D	42757
MB 620-42757/1-A	Method Blank	Total/NA	Solid	6010D	42757
LCSSRM 620-42757/2-A ^6	Lab Control Sample	Total/NA	Solid	6010D	42757
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	6010D	42757
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	6010D	42757

Metals (Continued)

Analysis Batch: 42840 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	6010D	42757
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	6010D	42757

General Chemistry

Analysis Batch: 42604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-22964-1	MW-103 (11-13)	Total/NA	Solid	Moisture	
620-22964-2	MW-103 (11-13) DUP	Total/NA	Solid	Moisture	
620-22964-3	MW-105 (9-11)	Total/NA	Solid	Moisture	
620-22964-4	MW-106 (9-11)	Total/NA	Solid	Moisture	
620-22964-5	MW-104 (7-9)	Total/NA	Solid	Moisture	
620-22964-6	SB-3 (7-9)	Total/NA	Solid	Moisture	
620-22964-7	SB-4 (13-15)	Total/NA	Solid	Moisture	
620-22964-8	SB-2 (9-11)	Total/NA	Solid	Moisture	
620-22964-6 MS	SB-3 (7-9)	Total/NA	Solid	Moisture	
620-22964-6 MSD	SB-3 (7-9)	Total/NA	Solid	Moisture	
620-22964-7 MS	SB-4 (13-15)	Total/NA	Solid	Moisture	
620-22964-7 MSD	SB-4 (13-15)	Total/NA	Solid	Moisture	
620-22964-8 MS	SB-2 (9-11)	Total/NA	Solid	Moisture	
620-22964-8 MSD	SB-2 (9-11)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-103 (11-13)

Lab Sample ID: 620-22964-1
Date Collected: 12/11/24 08:45
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: MW-103 (11-13)

Lab Sample ID: 620-22964-1
Date Collected: 12/11/24 08:45
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 14:14
Total/NA	Prep	3546			42706	BJJ	EET RI	12/19/24 10:22
Total/NA	Analysis	8270D		1	42760	JS	EET RI	12/20/24 19:20
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 15:43
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 15:45
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 21:13
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		1	42676	JPC	EET RI	12/18/24 14:00
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:12

Client Sample ID: MW-103 (11-13) DUP

Lab Sample ID: 620-22964-2
Date Collected: 12/11/24 08:55
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: MW-103 (11-13) DUP

Lab Sample ID: 620-22964-2
Date Collected: 12/11/24 08:55
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42825	CLR	EET RI	12/23/24 10:40
Total/NA	Analysis	8260C		1	42803	CLR	EET RI	12/23/24 12:18
Total/NA	Prep	3546			42706	BJJ	EET RI	12/19/24 10:22
Total/NA	Analysis	8270D		1	42760	JS	EET RI	12/20/24 19:46
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 16:18
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 16:08

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-103 (11-13) DUP

Lab Sample ID: 620-22964-2
Date Collected: 12/11/24 08:55
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 22:28
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		1	42676	JPC	EET RI	12/18/24 13:54
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:14

Client Sample ID: MW-105 (9-11)

Lab Sample ID: 620-22964-3
Date Collected: 12/11/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: MW-105 (9-11)

Lab Sample ID: 620-22964-3
Date Collected: 12/11/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 15:04
Total/NA	Prep	3546			42706	BJJ	EET RI	12/19/24 10:22
Total/NA	Analysis	8270D		1	42760	JS	EET RI	12/20/24 20:11
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 16:53
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 16:32
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 22:46
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		1	42676	JPC	EET RI	12/18/24 13:48
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:16

Client Sample ID: MW-106 (9-11)

Lab Sample ID: 620-22964-4
Date Collected: 12/11/24 11:10
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-106 (9-11)

Lab Sample ID: 620-22964-4
Date Collected: 12/11/24 11:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 15:30
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 23:13
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 17:28
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 16:55
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 23:04
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		1	42676	JPC	EET RI	12/18/24 13:42
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:29

Client Sample ID: MW-104 (7-9)

Lab Sample ID: 620-22964-5
Date Collected: 12/11/24 12:00
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: MW-104 (7-9)

Lab Sample ID: 620-22964-5
Date Collected: 12/11/24 12:00
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 65.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 15:55
Total/NA	Pre Prep	Frozen Preserve	RE		42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035	RE		42825	CLR	EET RI	12/23/24 10:40
Total/NA	Analysis	8260C	RE	1	42803	CLR	EET RI	12/23/24 12:46
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42700	JS	EET RI	12/19/24 22:22
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 18:03
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 17:19
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 23:22
Total/NA	Prep	3050B			42757	JPC	EET RI	12/20/24 10:02
Total/NA	Analysis	6010D		2	42840	JPC	EET RI	12/23/24 14:43

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: MW-104 (7-9)
Date Collected: 12/11/24 12:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-5
Matrix: Solid
Percent Solids: 65.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:31

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: SB-3 (7-9)
Date Collected: 12/12/24 08:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-6
Matrix: Solid
Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42825	CLR	EET RI	12/23/24 10:40
Total/NA	Analysis	8260C		1	42803	CLR	EET RI	12/23/24 13:11
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42760	JS	EET RI	12/20/24 21:53
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 18:38
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 17:43
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/18/24 23:40
Total/NA	Prep	3050B			42609	JPC	EET RI	12/17/24 11:58
Total/NA	Analysis	6010D		1	42676	JPC	EET RI	12/18/24 13:24
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:34

Client Sample ID: SB-4 (13-15)
Date Collected: 12/12/24 09:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: SB-4 (13-15)
Date Collected: 12/12/24 09:10
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-7
Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 16:45

Client Sample ID: SB-4 (13-15)

Lab Sample ID: 620-22964-7
Date Collected: 12/12/24 09:10
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			42656	CAC	EET RI	12/18/24 09:57
Total/NA	Analysis	8270D		1	42855	JS	EET RI	12/26/24 15:20
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 20:22
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42726	JS	EET RI	12/19/24 20:27
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/19/24 00:33
Total/NA	Prep	3050B			42757	JPC	EET RI	12/20/24 10:02
Total/NA	Analysis	6010D		2	42840	JPC	EET RI	12/23/24 14:07
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:43

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 620-22964-8
Date Collected: 12/12/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	42604	JPC	EET RI	12/17/24 10:36

Client Sample ID: SB-2 (9-11)

Lab Sample ID: 620-22964-8
Date Collected: 12/12/24 10:15
Matrix: Solid
Date Received: 12/16/24 17:00
Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 17:11
Total/NA	Prep	3546			42706	BJJ	EET RI	12/19/24 10:22
Total/NA	Analysis	8270D		1	42760	JS	EET RI	12/20/24 20:36
Total/NA	Prep	5035			42660	CLR	EET RI	12/18/24 11:15
Total/NA	Analysis	8015D		1	42659	CLR	EET RI	12/18/24 22:07
Total/NA	Prep	3546			42671	CAC	EET RI	12/18/24 14:23
Total/NA	Analysis	8015D		1	42807	BJJ	EET RI	12/23/24 14:35
Total/NA	Prep	3546			42628	RWS	EET RI	12/17/24 16:29
Total/NA	Analysis	8082A		1	42640	BMH	EET RI	12/19/24 02:24
Total/NA	Prep	3050B			42757	JPC	EET RI	12/20/24 10:02
Total/NA	Analysis	6010D		2	42840	JPC	EET RI	12/23/24 15:19
Total/NA	Prep	7471B			42657	PRB	EET RI	12/18/24 10:08
Total/NA	Analysis	7471B		1	42773	DJW	EET RI	12/18/24 16:49

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Client Sample ID: Trip Blank

Date Collected: 12/11/24 08:00
Date Received: 12/16/24 17:00

Lab Sample ID: 620-22964-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Pre Prep	Frozen Preserve			42571	KFS	EET RI	12/12/24 13:15
Total/NA	Prep	5035			42770	CLR	EET RI	12/20/24 11:05
Total/NA	Analysis	8260C		1	42692	CLR	EET RI	12/20/24 12:05

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Laboratory: Eurofins Rhode Island

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	7165.01	01-31-26
Connecticut	State	PH-0722	06-30-26
Maine	State	RI00100	05-09-25
Massachusetts	State	M-RI907	06-30-25
New Hampshire	NELAP	2245	09-17-25
New Jersey	NELAP	RI008	06-30-25
New York	NELAP	11393	04-01-25
Rhode Island	State	LAI00368	12-31-25

Method Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-22964-1
Project/Site: GES - RIDEM MPA-48
SDG: 198 Potter Hill Road, Westerly, RI

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET RI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET RI
8015D	Gasoline Range Organics (GRO) (GC)	SW846	EET RI
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET RI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET RI
6010D	Metals (ICP)	SW846	EET RI
7471B	Mercury (CVAA)	SW846	EET RI
Moisture	Percent Moisture	EPA	EET RI
3050B	Preparation, Metals	SW846	EET RI
3546	Microwave Extraction	SW846	EET RI
5035	Closed System Purge and Trap	SW846	EET RI
7471B	Preparation, Mercury	SW846	EET RI
Frozen Preserve	Freezing Samples	None	EET RI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: GES - RIDEM MPA-48

Job ID: 620-22964-1
SDG: 198 Potter Hill Road, Westerly, RI

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
620-22964-1	MW-103 (11-13)	Solid	12/11/24 08:45	12/16/24 17:00
620-22964-2	MW-103 (11-13) DUP	Solid	12/11/24 08:55	12/16/24 17:00
620-22964-3	MW-105 (9-11)	Solid	12/11/24 10:15	12/16/24 17:00
620-22964-4	MW-106 (9-11)	Solid	12/11/24 11:10	12/16/24 17:00
620-22964-5	MW-104 (7-9)	Solid	12/11/24 12:00	12/16/24 17:00
620-22964-6	SB-3 (7-9)	Solid	12/12/24 08:10	12/16/24 17:00
620-22964-7	SB-4 (13-15)	Solid	12/12/24 09:10	12/16/24 17:00
620-22964-8	SB-2 (9-11)	Solid	12/12/24 10:15	12/16/24 17:00
620-22964-9	Trip Blank	Solid	12/11/24 08:00	12/16/24 17:00

CHAIN OF CUSTODY

Client: Rhode Island Dept of Environment

22964

PAGE OF

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** H Joel Walcott **Phone #:** 800-220-6119 JWalcott@gesonline com fax GESInbox@gesonline.com **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047436	Groundwater & Environmental Services, Inc. ges-invoices@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

Sampler(s) Name	Sampler(s) Name

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Sample Type (Grab or Comp)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): VOCs 8260	SVOCs 8270	DRO/GRO TPH	PCBs 8082	Total PP13 Metals	LAB USE ONLY
1	MW-103 (11-13)	Grab	12/11/24	0845	MJ	SO	8					4	2	2			X	X	X	X	X	
1	MW-103 (11-13)-DUP	Grab	12/11/24	0855	MJ	SO	8					4	2	2			X	X	X	X	X	
2	MW-105 (9-11)	Grab	12/11/24	1015	MJ	SO	8					4	2	2			X	X	X	X	X	
3	MW-106 (9-11)	Grab	12/11/24	1110	MJ	SO	8					4	2	2			X	X	X	X	X	
4	MW-104 (7-9)	Grab	12/11/24	1200	MJ	SO	8					4	2	2			X	X	X	X	X	
5	SB-3 (7-9)	Grab	12/12/24	0810	MJ	SO	8					4	2	2			X	X	X	X	X	
5	SB-3 (7-9) MS/MSD	Grab	12/12/24	0810	MJ	SO	6					2	2	2			X	X	X	X	X	
6	SB-4 (13-15)	Grab	12/12/24	0910	MJ	SO	8					4	2	2			X	X	X	X	X	
6	SB-4 (13-15) MS/MSD	Grab	12/12/24	0910	MJ	SO	6					2	2	2			X	X	X	X	X	
7	SB-2 (9-11)	Grab	12/12/24	1015	MJ	SO	8					4	2	2			X	X	X	X	X	
7	SB-2 (9-11) MS/MSD	Grab	12/12/24	1015	MJ	SO	6					2	2	2			X	X	X	X	X	
8	Trip Blank	Grab	12/11/24	0800	MJ	TB	3						2	1			X					

Turnaround Time (Business Days)

- ◉ Standard 14 days
- ○ 1 day RUSH
- ○ Other _____ days

Lab PM Approval / Date

_____ /
_____ /
_____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Email: _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B'' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler	Date / Time	Received By
1	Matthew Jusino	12/12/24 1315	GES Freezer
2		12/16/24 1315	
3		12/16/24 16:33	

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** 2.7 +0.2 2.2 #6

620-22964 Chain of Custody

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1/2/2025

\\svr84\dw05\wndr\Dashboard\Planning\1047436

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 620-22964-1
SDG Number: 198 Potter Hill Road, Westerly, RI

Login Number: 22964
List Number: 1
Creator: Makhoul, Elie

List Source: Eurofins Rhode Island

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix F – Groundwater Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Joel Walcott
Groundwater & Environmental Services Inc
508 Thomson Park Drive
Cranberry Township, Pennsylvania 16066

Generated 1/13/2025 12:56:58 PM

JOB DESCRIPTION

GES - RIDEM MPA-48

JOB NUMBER

620-23112-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

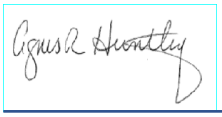
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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1/13/2025 12:56:58 PM

Authorized for release by
Agnes Huntley, Project Manager
Agnes.Huntley@et.eurofinsus.com
(401)267-4374

Table of Contents

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
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.

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
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 Narrative
620-23112-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be 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.

Receipt
The samples were received on 12/27/2024 4:00 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 4.4°C and 4.8°C.

GC/MS VOA
Method 8260C: The large number of analytes included in the continuing calibration verification (CCV) gives a high probability that one or more analytes will be outside acceptance criteria. As indicated in the reference method, analysis may proceed as long as no more than 20% of the analytes of interest are outside the method-defined %D criteria. Affected analytes (biased high): Vinyl chloride, Acrylonitrile, and 2-Methyl-2-propanol.
(CCVIS 620-42931/3)

Method 8260C: The laboratory control sample (LCS) for analytical batch 620-42931 recovered outside control limits for the following analytes: Chlorobenzene and Vinyl chloride. These analytes were biased high/low in the LCS and were not detected in the associated samples. According to 8260C requirements, <10% of analytes are allowed to recover outside control limits; therefore, the data have been reported.

Method 8260C: The laboratory control sample duplicate (LCSD) for analytical batch 620-42931 recovered outside control limits for the following analytes: Chlorobenzene and 1,1,1,2-Tetrachloroethane. These analytes were biased low in the LCSD and were not detected in the associated samples. According to 8260C requirements, <10% of analytes are allowed to recover outside control limits; therefore, the data have been reported.

Method 8260C: The continuing calibration verification (CCV) associated with batch 620-42972 exhibited % difference of > 20% for the following analytes: Bromobenzene, Hexachlorobutadiene, Naphthalene, Tetrachloroethene, 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene; however, the results of the LCS were within the CCV acceptance limits. The EPA method requires that all target analytes in the continuing calibration verification standard be within 20% difference from the initial calibration. According to the laboratory standard operating procedure, the LCS is acceptable if it meets the CCV acceptance criteria.

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 620-42972 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8260C: The laboratory control sample and the laboratory control sample duplicate (LCS/LCSD) for analytical batch 620-42972 recovered outside control limits for the following analyte: Chloromethane, which has been identified as a poor performing analyte when analyzed using this method. According to 8260C requirements, poor performers are allowed to recover within 50-150%; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260C: The laboratory control sample (LCS) for analytical batch 620-42972 recovered outside control limits for the following analytes: Bromoform. This analyte was biased low in the LCS and was not detected in the associated samples. According to 8260C requirements, <10% of analytes are allowed to recover outside control limits; therefore, the data have been reported.

Method 8260C: The laboratory control sample duplicate (LCSD) for analytical batch 620-42972 recovered outside control limits for the following analytes: Bromoform and 1,1,1,2-Tetrachloroethane. These analytes were biased low in the LCSD and were not detected in the associated samples. According to 8260C requirements, <10% of analytes are allowed to recover outside control limits; 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.

GC/MS Semi VOA
Method 8270D: The continuing calibration verification (CCV) associated with batch 620-43022 recovered above the upper control limit for 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol, Benzidine, Benzoic acid and Hexachlorocyclopentadiene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 620-42978 and analytical batch 620-43022 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8270D: The continuing calibration verification (CCV) associated with batch 620-42996 recovered above the upper control limit for 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol, Benzidine, Benzoic acid and Hexachlorocyclopentadiene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270D: The laboratory control sample (LCS) associated with preparation batch 620-42978 and analytical batch 620-42996 was outside acceptance criteria for the analyte: Benzo[a]anthracene. The batch laboratory control sample duplicate (LCSD) was within acceptance limits and may be used to evaluate batch performance.

Method 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 620-42978 and analytical batch 620-42996 recovered outside control limits for the following analytes: 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol and Benzoic acid. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 620-42978 and analytical batch 620-42996 recovered outside control limits for the following analytes: 3,3'-Dichlorobenzidine and bis (2-chloroisopropyl) ether. The affected target analytes recovered within acceptance limits; >10% recovery, demonstrating the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

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

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

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

PCBs
Method 8082A: The continuing calibration verification (CCV) associated with 620-43016 recovered high and outside the control limits for DCB Decachlorobiphenyl (Surr) on the confirmation column. Results are confirmed on both columns and reported from the passing primary column. The associated sample is: (CCV 620-43016/27).

Method 8082A: The continuing calibration verification (CCV) associated with 620-43016 recovered high and outside the control limits for Tetrachloro-m-xylene on the primary column. Results are confirmed on both columns and reported from the passing confirmation column. The associated sample is: (CCVIS 620-43016/2).

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

Metals
Method 7470A: The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): MW-106 (620-23112-6) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL,

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

Detection Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101 — Lab Sample ID: 620-23112-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Zinc	0.0143		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-102 — Lab Sample ID: 620-23112-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Zinc	0.0311		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-103 — Lab Sample ID: 620-23112-3

No Detections.

Client Sample ID: MW-104 — Lab Sample ID: 620-23112-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00950		0.00800		mg/L	1		6010D	Total/NA

Client Sample ID: MW-105 — Lab Sample ID: 620-23112-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0156		0.00800		mg/L	1		6010D	Total/NA

Client Sample ID: MW-106 — Lab Sample ID: 620-23112-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0132		0.0100		mg/L	1		6010D	Total/NA
Copper	0.0214		0.0100		mg/L	1		6010D	Total/NA
Zinc	0.213		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-107 — Lab Sample ID: 620-23112-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0105		0.00800		mg/L	1		6010D	Total/NA
Zinc	0.0102		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-108 — Lab Sample ID: 620-23112-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Zinc	0.0965		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-106 DUP — Lab Sample ID: 620-23112-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	7.89		4.63		ug/L	1		8270D	Total/NA
Arsenic	0.0133		0.00800		mg/L	1		6010D	Total/NA
Copper	0.0165		0.0100		mg/L	1		6010D	Total/NA
Zinc	0.216		0.0100		mg/L	1		6010D	Total/NA

Client Sample ID: MW-107 DUP — Lab Sample ID: 620-23112-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101
Lab Sample ID: 620-23112-1
Date Collected: 12/26/24 07:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 14:14	1
Acetone	ND		10.0		ug/L			12/31/24 14:14	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 14:14	1
Benzene	ND		1.00		ug/L			12/31/24 14:14	1
Bromobenzene	ND		1.00		ug/L			12/31/24 14:14	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 14:14	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 14:14	1
Bromoform	ND		1.00		ug/L			12/31/24 14:14	1
Bromomethane	ND		2.00		ug/L			12/31/24 14:14	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 14:14	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 14:14	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 14:14	1
Chlorobenzene	ND	*-	1.00		ug/L			12/31/24 14:14	1
Chloroethane	ND		2.00		ug/L			12/31/24 14:14	1
Chloroform	ND		1.00		ug/L			12/31/24 14:14	1
Chloromethane	ND		2.00		ug/L			12/31/24 14:14	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 14:14	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 14:14	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 14:14	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 14:14	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 14:14	1
Dibromomethane	ND		1.00		ug/L			12/31/24 14:14	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 14:14	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 14:14	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 14:14	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 14:14	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 14:14	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 14:14	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 14:14	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 14:14	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 14:14	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 14:14	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 14:14	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 14:14	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 14:14	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 14:14	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 14:14	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 14:14	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 14:14	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 14:14	1
Naphthalene	ND		2.00		ug/L			12/31/24 14:14	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101
Lab Sample ID: 620-23112-1
Date Collected: 12/26/24 07:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
Styrene	ND		1.00		ug/L			12/31/24 14:14	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 14:14	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 14:14	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 14:14	1
Toluene	ND		1.00		ug/L			12/31/24 14:14	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 14:14	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 14:14	1
Trichloroethene	ND		1.00		ug/L			12/31/24 14:14	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 14:14	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 14:14	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 14:14	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 14:14	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 14:14	1
o-Xylene	ND		1.00		ug/L			12/31/24 14:14	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 14:14	1
Ethyl ether	ND		1.00		ug/L			12/31/24 14:14	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 14:14	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 14:14	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 14:14	1
tert-Butanol	ND		10.0		ug/L			12/31/24 14:14	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 14:14	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 14:14	1
Ethanol	ND		200		ug/L			12/31/24 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/31/24 14:14*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/31/24 14:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*12/31/24 14:14*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/31/24 14:14*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 11:18	1
Arsenic	ND		0.00800		mg/L		12/27/24 17:22	12/30/24 11:18	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 11:18	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 11:18	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 11:18	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 11:18	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1
Zinc	**0.0143**		0.0100		mg/L		12/27/24 17:22	12/30/24 11:18	1

Client Sample ID: MW-101
Lab Sample ID: 620-23112-1
Date Collected: 12/26/24 07:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		01/03/25 09:49	01/03/25 16:24	1

Client Sample ID: MW-102
Lab Sample ID: 620-23112-2
Date Collected: 12/26/24 07:55
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 14:41	1
Acetone	ND		10.0		ug/L			12/31/24 14:41	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 14:41	1
Benzene	ND		1.00		ug/L			12/31/24 14:41	1
Bromobenzene	ND		1.00		ug/L			12/31/24 14:41	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 14:41	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 14:41	1
Bromoform	ND		1.00		ug/L			12/31/24 14:41	1
Bromomethane	ND		2.00		ug/L			12/31/24 14:41	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 14:41	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 14:41	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 14:41	1
Chlorobenzene	ND	*-	1.00		ug/L			12/31/24 14:41	1
Chloroethane	ND		2.00		ug/L			12/31/24 14:41	1
Chloroform	ND		1.00		ug/L			12/31/24 14:41	1
Chloromethane	ND		2.00		ug/L			12/31/24 14:41	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 14:41	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 14:41	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 14:41	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 14:41	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 14:41	1
Dibromomethane	ND		1.00		ug/L			12/31/24 14:41	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 14:41	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 14:41	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 14:41	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 14:41	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 14:41	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 14:41	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 14:41	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 14:41	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 14:41	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 14:41	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 14:41	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 14:41	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 14:41	1

Client Sample ID: MW-102
Date Collected: 12/26/24 07:55
Date Received: 12/27/24 16:00

Lab Sample ID: 620-23112-2
Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 14:41	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 14:41	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 14:41	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 14:41	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 14:41	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 14:41	1
Naphthalene	ND		2.00		ug/L			12/31/24 14:41	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
Styrene	ND		1.00		ug/L			12/31/24 14:41	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 14:41	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 14:41	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 14:41	1
Toluene	ND		1.00		ug/L			12/31/24 14:41	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 14:41	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 14:41	1
Trichloroethene	ND		1.00		ug/L			12/31/24 14:41	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 14:41	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 14:41	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 14:41	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 14:41	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 14:41	1
o-Xylene	ND		1.00		ug/L			12/31/24 14:41	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 14:41	1
Ethyl ether	ND		1.00		ug/L			12/31/24 14:41	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 14:41	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 14:41	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 14:41	1
tert-Butanol	ND		10.0		ug/L			12/31/24 14:41	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 14:41	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 14:41	1
Ethanol	ND		200		ug/L			12/31/24 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*12/31/24 14:41*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/31/24 14:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*12/31/24 14:41*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*12/31/24 14:41*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 11:24	1
Arsenic	ND		0.00800		mg/L		12/27/24 17:22	12/30/24 11:24	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 11:24	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 11:24	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1

Client Sample ID: MW-102
Lab Sample ID: 620-23112-2
Date Collected: 12/26/24 07:55
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 11:24	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 11:24	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1
Zinc	**0.0311**		0.0100		mg/L		12/27/24 17:22	12/30/24 11:24	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		01/03/25 09:49	01/03/25 16:26	1

Client Sample ID: MW-103
Lab Sample ID: 620-23112-3
Date Collected: 12/26/24 09:40
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 15:08	1
Acetone	ND		10.0		ug/L			12/31/24 15:08	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 15:08	1
Benzene	ND		1.00		ug/L			12/31/24 15:08	1
Bromobenzene	ND		1.00		ug/L			12/31/24 15:08	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 15:08	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 15:08	1
Bromoform	ND		1.00		ug/L			12/31/24 15:08	1
Bromomethane	ND		2.00		ug/L			12/31/24 15:08	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 15:08	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 15:08	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 15:08	1
Chlorobenzene	ND	*-	1.00		ug/L			12/31/24 15:08	1
Chloroethane	ND		2.00		ug/L			12/31/24 15:08	1
Chloroform	ND		1.00		ug/L			12/31/24 15:08	1
Chloromethane	ND		2.00		ug/L			12/31/24 15:08	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 15:08	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 15:08	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 15:08	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 15:08	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 15:08	1
Dibromomethane	ND		1.00		ug/L			12/31/24 15:08	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 15:08	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 15:08	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 15:08	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-103
Lab Sample ID: 620-23112-3
Date Collected: 12/26/24 09:40
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 15:08	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 15:08	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 15:08	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 15:08	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 15:08	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 15:08	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 15:08	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 15:08	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 15:08	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 15:08	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 15:08	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 15:08	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 15:08	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 15:08	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 15:08	1
Naphthalene	ND		2.00		ug/L			12/31/24 15:08	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
Styrene	ND		1.00		ug/L			12/31/24 15:08	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 15:08	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 15:08	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 15:08	1
Toluene	ND		1.00		ug/L			12/31/24 15:08	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 15:08	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 15:08	1
Trichloroethene	ND		1.00		ug/L			12/31/24 15:08	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 15:08	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 15:08	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 15:08	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 15:08	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 15:08	1
o-Xylene	ND		1.00		ug/L			12/31/24 15:08	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 15:08	1
Ethyl ether	ND		1.00		ug/L			12/31/24 15:08	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 15:08	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 15:08	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 15:08	1
tert-Butanol	ND		10.0		ug/L			12/31/24 15:08	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 15:08	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 15:08	1
Ethanol	ND		200		ug/L			12/31/24 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*12/31/24 15:08*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/31/24 15:08*	*1*

Client Sample ID: MW-103
Lab Sample ID: 620-23112-3
Date Collected: 12/26/24 09:40
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*12/31/24 15:08*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*12/31/24 15:08*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120	mg/L		12/27/24 17:22	12/30/24 11:30	1
Arsenic	ND		0.00800	mg/L		12/27/24 17:22	12/30/24 11:30	1
Beryllium	ND		0.00400	mg/L		12/27/24 17:22	12/30/24 11:30	1
Cadmium	ND		0.00500	mg/L		12/27/24 17:22	12/30/24 11:30	1
Chromium	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1
Copper	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1
Lead	ND		0.0150	mg/L		12/27/24 17:22	12/30/24 11:30	1
Nickel	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1
Selenium	ND		0.0300	mg/L		12/27/24 17:22	12/30/24 11:30	1
Silver	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1
Thallium	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1
Zinc	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 11:30	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	mg/L		01/03/25 09:49	01/03/25 16:28	1

Client Sample ID: MW-104
Lab Sample ID: 620-23112-4
Date Collected: 12/26/24 16:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00	ug/L			12/31/24 15:34	1
Acetone	ND		10.0	ug/L			12/31/24 15:34	1
Acrylonitrile	ND		1.00	ug/L			12/31/24 15:34	1
Benzene	ND		1.00	ug/L			12/31/24 15:34	1
Bromobenzene	ND		1.00	ug/L			12/31/24 15:34	1
Bromochloromethane	ND		1.00	ug/L			12/31/24 15:34	1
Bromodichloromethane	ND		0.500	ug/L			12/31/24 15:34	1
Bromoform	ND		1.00	ug/L			12/31/24 15:34	1
Bromomethane	ND		2.00	ug/L			12/31/24 15:34	1
2-Butanone (MEK)	ND		2.00	ug/L			12/31/24 15:34	1
n-Butylbenzene	ND		1.00	ug/L			12/31/24 15:34	1
sec-Butylbenzene	ND		1.00	ug/L			12/31/24 15:34	1
tert-Butylbenzene	ND		1.00	ug/L			12/31/24 15:34	1
Carbon disulfide	ND		2.00	ug/L			12/31/24 15:34	1
Carbon tetrachloride	ND		1.00	ug/L			12/31/24 15:34	1
Chlorobenzene	ND	*-	1.00	ug/L			12/31/24 15:34	1
Chloroethane	ND		2.00	ug/L			12/31/24 15:34	1
Chloroform	ND		1.00	ug/L			12/31/24 15:34	1
Chloromethane	ND		2.00	ug/L			12/31/24 15:34	1
2-Chlorotoluene	ND		1.00	ug/L			12/31/24 15:34	1
4-Chlorotoluene	ND		1.00	ug/L			12/31/24 15:34	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-104
Lab Sample ID: 620-23112-4
Date Collected: 12/26/24 16:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 15:34	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 15:34	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 15:34	1
Dibromomethane	ND		1.00		ug/L			12/31/24 15:34	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 15:34	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 15:34	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 15:34	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 15:34	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 15:34	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 15:34	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 15:34	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 15:34	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 15:34	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 15:34	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 15:34	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 15:34	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 15:34	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 15:34	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 15:34	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 15:34	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 15:34	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 15:34	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 15:34	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 15:34	1
Naphthalene	ND		2.00		ug/L			12/31/24 15:34	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 15:34	1
Styrene	ND		1.00		ug/L			12/31/24 15:34	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 15:34	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 15:34	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 15:34	1
Toluene	ND		1.00		ug/L			12/31/24 15:34	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 15:34	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 15:34	1
Trichloroethene	ND		1.00		ug/L			12/31/24 15:34	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 15:34	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 15:34	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 15:34	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 15:34	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 15:34	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 15:34	1
o-Xylene	ND		1.00		ug/L			12/31/24 15:34	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 15:34	1
Ethyl ether	ND		1.00		ug/L			12/31/24 15:34	1

Client Sample ID: MW-104
Lab Sample ID: 620-23112-4
Date Collected: 12/26/24 16:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 15:34	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 15:34	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 15:34	1
tert-Butanol	ND		10.0		ug/L			12/31/24 15:34	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 15:34	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 15:34	1
Ethanol	ND		200		ug/L			12/31/24 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/31/24 15:34*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/31/24 15:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*12/31/24 15:34*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*12/31/24 15:34*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 11:36	1
Arsenic	**0.00950**		0.00800		mg/L		12/27/24 17:22	12/30/24 11:36	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 11:36	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 11:36	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 11:36	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 11:36	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1
Zinc	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		01/03/25 09:49	01/03/25 16:31	1

Client Sample ID: MW-105
Lab Sample ID: 620-23112-5
Date Collected: 12/26/24 15:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 16:00	1
Acetone	ND		10.0		ug/L			12/31/24 16:00	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 16:00	1
Benzene	ND		1.00		ug/L			12/31/24 16:00	1
Bromobenzene	ND		1.00		ug/L			12/31/24 16:00	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 16:00	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 16:00	1
Bromoform	ND		1.00		ug/L			12/31/24 16:00	1
Bromomethane	ND		2.00		ug/L			12/31/24 16:00	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 16:00	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 16:00	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-105
Lab Sample ID: 620-23112-5
Date Collected: 12/26/24 15:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 16:00	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 16:00	1
Chlorobenzene	ND	*-	1.00		ug/L			12/31/24 16:00	1
Chloroethane	ND		2.00		ug/L			12/31/24 16:00	1
Chloroform	ND		1.00		ug/L			12/31/24 16:00	1
Chloromethane	ND		2.00		ug/L			12/31/24 16:00	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 16:00	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 16:00	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 16:00	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 16:00	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 16:00	1
Dibromomethane	ND		1.00		ug/L			12/31/24 16:00	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 16:00	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 16:00	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 16:00	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 16:00	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:00	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:00	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:00	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 16:00	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:00	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 16:00	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:00	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:00	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 16:00	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 16:00	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 16:00	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:00	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 16:00	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 16:00	1
Naphthalene	ND		2.00		ug/L			12/31/24 16:00	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
Styrene	ND		1.00		ug/L			12/31/24 16:00	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 16:00	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 16:00	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 16:00	1
Toluene	ND		1.00		ug/L			12/31/24 16:00	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 16:00	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 16:00	1

Client Sample ID: MW-105
Lab Sample ID: 620-23112-5
Date Collected: 12/26/24 15:10
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.00		ug/L			12/31/24 16:00	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 16:00	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 16:00	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:00	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 16:00	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 16:00	1
o-Xylene	ND		1.00		ug/L			12/31/24 16:00	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 16:00	1
Ethyl ether	ND		1.00		ug/L			12/31/24 16:00	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 16:00	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:00	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 16:00	1
tert-Butanol	ND		10.0		ug/L			12/31/24 16:00	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 16:00	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 16:00	1
Ethanol	ND		200		ug/L			12/31/24 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*12/31/24 16:00*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/31/24 16:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*12/31/24 16:00*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*12/31/24 16:00*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 11:42	1
Arsenic	**0.0156**		0.00800		mg/L		12/27/24 17:22	12/30/24 11:42	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 11:42	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 11:42	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 11:42	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 11:42	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1
Zinc	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:42	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		01/03/25 09:49	01/03/25 16:33	1

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			01/02/25 18:42	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND	F1	10.0		ug/L			01/02/25 18:42	1
Acrylonitrile	ND		1.00		ug/L			01/02/25 18:42	1
Benzene	ND		1.00		ug/L			01/02/25 18:42	1
Bromobenzene	ND		1.00		ug/L			01/02/25 18:42	1
Bromochloromethane	ND		1.00		ug/L			01/02/25 18:42	1
Bromodichloromethane	ND		0.500		ug/L			01/02/25 18:42	1
Bromoform	ND	*-	1.00		ug/L			01/02/25 18:42	1
Bromomethane	ND	F1	2.00		ug/L			01/02/25 18:42	1
2-Butanone (MEK)	ND	F1	2.00		ug/L			01/02/25 18:42	1
n-Butylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
sec-Butylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
tert-Butylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
Carbon disulfide	ND		2.00		ug/L			01/02/25 18:42	1
Carbon tetrachloride	ND		1.00		ug/L			01/02/25 18:42	1
Chlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
Chloroethane	ND		2.00		ug/L			01/02/25 18:42	1
Chloroform	ND		1.00		ug/L			01/02/25 18:42	1
Chloromethane	ND	*+ F1	2.00		ug/L			01/02/25 18:42	1
2-Chlorotoluene	ND		1.00		ug/L			01/02/25 18:42	1
4-Chlorotoluene	ND		1.00		ug/L			01/02/25 18:42	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			01/02/25 18:42	1
Dibromochloromethane	ND		0.500		ug/L			01/02/25 18:42	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			01/02/25 18:42	1
Dibromomethane	ND		1.00		ug/L			01/02/25 18:42	1
1,2-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,3-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,4-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
Dichlorodifluoromethane (Freon 12)	ND	F1	2.00		ug/L			01/02/25 18:42	1
1,1-Dichloroethane	ND		1.00		ug/L			01/02/25 18:42	1
1,2-Dichloroethane	ND		1.00		ug/L			01/02/25 18:42	1
1,1-Dichloroethene	ND		1.00		ug/L			01/02/25 18:42	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 18:42	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 18:42	1
1,2-Dichloropropane	ND		1.00		ug/L			01/02/25 18:42	1
1,3-Dichloropropane	ND		1.00		ug/L			01/02/25 18:42	1
2,2-Dichloropropane	ND		1.00		ug/L			01/02/25 18:42	1
1,1-Dichloropropene	ND		1.00		ug/L			01/02/25 18:42	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 18:42	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 18:42	1
Ethylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
Hexachlorobutadiene	ND		1.00		ug/L			01/02/25 18:42	1
2-Hexanone (MBK)	ND		2.00		ug/L			01/02/25 18:42	1
Isopropylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
4-Isopropyltoluene	ND		1.00		ug/L			01/02/25 18:42	1
Methyl tert-butyl ether	ND		1.00		ug/L			01/02/25 18:42	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			01/02/25 18:42	1
Methylene Chloride	ND		2.00		ug/L			01/02/25 18:42	1
Naphthalene	ND		2.00		ug/L			01/02/25 18:42	1
N-Propylbenzene	ND		1.00		ug/L			01/02/25 18:42	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.00		ug/L			01/02/25 18:42	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			01/02/25 18:42	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			01/02/25 18:42	1
Tetrachloroethene	ND		1.00		ug/L			01/02/25 18:42	1
Toluene	ND		1.00		ug/L			01/02/25 18:42	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,1,1-Trichloroethane	ND		1.00		ug/L			01/02/25 18:42	1
1,1,2-Trichloroethane	ND		1.00		ug/L			01/02/25 18:42	1
Trichloroethene	ND		1.00		ug/L			01/02/25 18:42	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			01/02/25 18:42	1
1,2,3-Trichloropropane	ND		1.00		ug/L			01/02/25 18:42	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			01/02/25 18:42	1
Vinyl chloride	ND	F1	1.00		ug/L			01/02/25 18:42	1
m,p-Xylene	ND		1.00		ug/L			01/02/25 18:42	1
o-Xylene	ND		1.00		ug/L			01/02/25 18:42	1
Tetrahydrofuran	ND		2.00		ug/L			01/02/25 18:42	1
Ethyl ether	ND		1.00		ug/L			01/02/25 18:42	1
Tert-amyl methyl ether	ND		1.00		ug/L			01/02/25 18:42	1
Ethyl tert-butyl ether	ND		1.00		ug/L			01/02/25 18:42	1
di-Isopropyl ether	ND		1.00		ug/L			01/02/25 18:42	1
tert-Butanol	ND		10.0		ug/L			01/02/25 18:42	1
1,4-Dioxane	ND		50.0		ug/L			01/02/25 18:42	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			01/02/25 18:42	1
Ethanol	ND	F1	200		ug/L			01/02/25 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*01/02/25 18:42*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*01/02/25 18:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*122*		*70 - 130*		*01/02/25 18:42*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*01/02/25 18:42*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
1,2,4-Trichlorobenzene	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
1,2-Dichlorobenzene	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
1,3-Dichlorobenzene	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
1,4-Dichlorobenzene	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
1-Methylnaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4,5-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4,6-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4-Dichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4-Dimethylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4-Dinitrophenol	ND	*+ F1	18.5		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,4-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2,6-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2-Chloronaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2-Methylnaphthalene	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2-Methylphenol	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2-Nitroaniline	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
2-Nitrophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
3 & 4 Methylphenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 17:52	1
3,3'-Dichlorobenzidine	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
3-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4,6-Dinitro-2-methylphenol	ND	*+ F1	9.26		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Bromophenyl phenyl ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Chloro-3-methylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Chloroaniline	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Chlorophenyl phenyl ether	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
4-Nitrophenol	ND		18.5		ug/L		01/02/25 09:20	01/03/25 17:52	1
Acenaphthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Acenaphthylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Aniline	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Azobenzene/Diphenyldiazene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzidine	ND	F1	18.5		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzo[a]anthracene	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzo[a]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzo[b]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzo[g,h,i]perylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzo[k]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzoic acid	ND	*+	9.26		ug/L		01/02/25 09:20	01/03/25 17:52	1
Benzyl alcohol	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Bis(2-chloroethoxy)methane	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Bis(2-chloroethyl)ether	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
bis (2-chloroisopropyl) ether	ND	F2 *- F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Bis(2-ethylhexyl) phthalate	ND		9.26		ug/L		01/02/25 09:20	01/03/25 17:52	1
Butyl benzyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Carbazole	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Chrysene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Dibenz(a,h)anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Dibenzofuran	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Diethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Dimethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Di-n-butyl phthalate	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Di-n-octyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Fluorene	ND	F2	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Hexachlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Hexachlorobutadiene	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Hexachlorocyclopentadiene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Hexachloroethane	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Indeno[1,2,3-cd]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Isophorone	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1

Client Sample ID: MW-106
Date Collected: 12/26/24 12:20
Date Received: 12/27/24 16:00

Lab Sample ID: 620-23112-6
Matrix: Water

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Nitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
N-Nitrosodimethylamine	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
N-Nitrosodi-n-propylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
N-Nitrosodiphenylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Pentachloronitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Pentachlorophenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 17:52	1
Phenanthrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Phenol	ND	F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1
Pyridine	ND	F2 F1	4.63		ug/L		01/02/25 09:20	01/03/25 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*48*		*30 - 130*	*01/02/25 09:20*	*01/03/25 17:52*	*1*
2-Fluorophenol (Surr)	*31*		*15 - 110*	*01/02/25 09:20*	*01/03/25 17:52*	*1*
Nitrobenzene-d5 (Surr)	*46*		*30 - 130*	*01/02/25 09:20*	*01/03/25 17:52*	*1*
Phenol-d5 (Surr)	*20*		*15 - 110*	*01/02/25 09:20*	*01/03/25 17:52*	*1*
2,4,6-Tribromophenol (Surr)	*50*		*15 - 110*	*01/02/25 09:20*	*01/03/25 17:52*	*1*
Terphenyl-d14 (Surr)	*53*		*30 - 130*	*01/02/25 09:20*	*01/03/25 17:52*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1221	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1232	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1242	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1248	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1254	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1260	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1262	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1
PCB-1268	ND		0.400		ug/L		12/30/24 12:34	01/03/25 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*30 - 150*	*12/30/24 12:34*	*01/03/25 15:54*	*1*
DCB Decachlorobiphenyl (Surr)	*80*		*30 - 150*	*12/30/24 12:34*	*01/03/25 15:54*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 11:00	1
Arsenic	ND		0.00800		mg/L		12/27/24 17:22	12/30/24 11:00	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 11:00	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 11:00	1
Chromium	**0.0132**		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1
Copper	**0.0214**		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 11:00	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 11:00	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1
Zinc	**0.213**		0.0100		mg/L		12/27/24 17:22	12/30/24 11:00	1

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000500		mg/L		12/31/24 10:19	12/31/24 14:26	1

Client Sample ID: MW-107
Lab Sample ID: 620-23112-7
Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			01/02/25 18:20	1
Acetone	ND		10.0		ug/L			01/02/25 18:20	1
Acrylonitrile	ND		1.00		ug/L			01/02/25 18:20	1
Benzene	ND		1.00		ug/L			01/02/25 18:20	1
Bromobenzene	ND		1.00		ug/L			01/02/25 18:20	1
Bromochloromethane	ND		1.00		ug/L			01/02/25 18:20	1
Bromodichloromethane	ND		0.500		ug/L			01/02/25 18:20	1
Bromoform	ND	*-	1.00		ug/L			01/02/25 18:20	1
Bromomethane	ND		2.00		ug/L			01/02/25 18:20	1
2-Butanone (MEK)	ND		2.00		ug/L			01/02/25 18:20	1
n-Butylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
sec-Butylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
tert-Butylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
Carbon disulfide	ND		2.00		ug/L			01/02/25 18:20	1
Carbon tetrachloride	ND		1.00		ug/L			01/02/25 18:20	1
Chlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
Chloroethane	ND		2.00		ug/L			01/02/25 18:20	1
Chloroform	ND		1.00		ug/L			01/02/25 18:20	1
Chloromethane	ND	*+	2.00		ug/L			01/02/25 18:20	1
2-Chlorotoluene	ND		1.00		ug/L			01/02/25 18:20	1
4-Chlorotoluene	ND		1.00		ug/L			01/02/25 18:20	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			01/02/25 18:20	1
Dibromochloromethane	ND		0.500		ug/L			01/02/25 18:20	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			01/02/25 18:20	1
Dibromomethane	ND		1.00		ug/L			01/02/25 18:20	1
1,2-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,3-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,4-Dichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			01/02/25 18:20	1
1,1-Dichloroethane	ND		1.00		ug/L			01/02/25 18:20	1
1,2-Dichloroethane	ND		1.00		ug/L			01/02/25 18:20	1
1,1-Dichloroethene	ND		1.00		ug/L			01/02/25 18:20	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 18:20	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 18:20	1
1,2-Dichloropropane	ND		1.00		ug/L			01/02/25 18:20	1
1,3-Dichloropropane	ND		1.00		ug/L			01/02/25 18:20	1
2,2-Dichloropropane	ND		1.00		ug/L			01/02/25 18:20	1
1,1-Dichloropropene	ND		1.00		ug/L			01/02/25 18:20	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 18:20	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 18:20	1
Ethylbenzene	ND		1.00		ug/L			01/02/25 18:20	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-107
Lab Sample ID: 620-23112-7

Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		1.00		ug/L			01/02/25 18:20	1
2-Hexanone (MBK)	ND		2.00		ug/L			01/02/25 18:20	1
Isopropylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
4-Isopropyltoluene	ND		1.00		ug/L			01/02/25 18:20	1
Methyl tert-butyl ether	ND		1.00		ug/L			01/02/25 18:20	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			01/02/25 18:20	1
Methylene Chloride	ND		2.00		ug/L			01/02/25 18:20	1
Naphthalene	ND		2.00		ug/L			01/02/25 18:20	1
N-Propylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
Styrene	ND		1.00		ug/L			01/02/25 18:20	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			01/02/25 18:20	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			01/02/25 18:20	1
Tetrachloroethene	ND		1.00		ug/L			01/02/25 18:20	1
Toluene	ND		1.00		ug/L			01/02/25 18:20	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,1,1-Trichloroethane	ND		1.00		ug/L			01/02/25 18:20	1
1,1,2-Trichloroethane	ND		1.00		ug/L			01/02/25 18:20	1
Trichloroethene	ND		1.00		ug/L			01/02/25 18:20	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			01/02/25 18:20	1
1,2,3-Trichloropropane	ND		1.00		ug/L			01/02/25 18:20	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			01/02/25 18:20	1
Vinyl chloride	ND		1.00		ug/L			01/02/25 18:20	1
m,p-Xylene	ND		1.00		ug/L			01/02/25 18:20	1
o-Xylene	ND		1.00		ug/L			01/02/25 18:20	1
Tetrahydrofuran	ND		2.00		ug/L			01/02/25 18:20	1
Ethyl ether	ND		1.00		ug/L			01/02/25 18:20	1
Tert-amyl methyl ether	ND		1.00		ug/L			01/02/25 18:20	1
Ethyl tert-butyl ether	ND		1.00		ug/L			01/02/25 18:20	1
di-Isopropyl ether	ND		1.00		ug/L			01/02/25 18:20	1
tert-Butanol	ND		10.0		ug/L			01/02/25 18:20	1
1,4-Dioxane	ND		50.0		ug/L			01/02/25 18:20	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			01/02/25 18:20	1
Ethanol	ND		200		ug/L			01/02/25 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*01/02/25 18:20*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*01/02/25 18:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*122*		*70 - 130*		*01/02/25 18:20*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*01/02/25 18:20*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
1,2,4-Trichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
1,2-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
1,3-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
1,4-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-107
Lab Sample ID: 620-23112-7
Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4,5-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4,6-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4-Dichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4-Dimethylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4-Dinitrophenol	ND	*+	18.5		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,4-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2,6-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Chloronaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Chlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Methylnaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Methylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
2-Nitrophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
3 & 4 Methylphenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 19:19	1
3,3'-Dichlorobenzidine	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
3-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4,6-Dinitro-2-methylphenol	ND	*+	9.26		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Bromophenyl phenyl ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Chloro-3-methylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Chloroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Chlorophenyl phenyl ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
4-Nitrophenol	ND		18.5		ug/L		01/02/25 09:20	01/03/25 19:19	1
Acenaphthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Acenaphthylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Aniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Azobenzene/Diphenyldiazene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzidine	ND		18.5		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzo[a]anthracene	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzo[a]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzo[b]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzo[g,h,i]perylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzo[k]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzoic acid	ND	*+	9.26		ug/L		01/02/25 09:20	01/03/25 19:19	1
Benzyl alcohol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Bis(2-chloroethoxy)methane	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Bis(2-chloroethyl)ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
bis (2-chloroisopropyl) ether	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Bis(2-ethylhexyl) phthalate	ND		9.26		ug/L		01/02/25 09:20	01/03/25 19:19	1
Butyl benzyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Carbazole	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Chrysene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Dibenz(a,h)anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Dibenzofuran	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Diethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Dimethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Di-n-butyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1

Client Sample ID: MW-107
Date Collected: 12/26/24 08:50
Date Received: 12/27/24 16:00

Lab Sample ID: 620-23112-7
Matrix: Water

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Fluorene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Hexachlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Hexachlorobutadiene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Hexachlorocyclopentadiene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Hexachloroethane	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Indeno[1,2,3-cd]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Isophorone	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Naphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Nitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
N-Nitrosodimethylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
N-Nitrosodi-n-propylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
N-Nitrosodiphenylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Pentachloronitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Pentachlorophenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 19:19	1
Phenanthrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Phenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1
Pyridine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 19:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*53*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:19*	*1*
2-Fluorophenol (Surr)	*40*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:19*	*1*
Nitrobenzene-d5 (Surr)	*52*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:19*	*1*
Phenol-d5 (Surr)	*24*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:19*	*1*
2,4,6-Tribromophenol (Surr)	*58*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:19*	*1*
Terphenyl-d14 (Surr)	*71*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:19*	*1*

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		0.100		mg/L			01/02/25 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*100*		*70 - 130*		*01/02/25 13:41*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		0.190		mg/L		12/31/24 11:50	01/02/25 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*71*		*40 - 140*	*12/31/24 11:50*	*01/02/25 13:17*	*1*
1-Chlorooctadecane	*85*		*40 - 140*	*12/31/24 11:50*	*01/02/25 13:17*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 12:00	1
Arsenic	**0.0105**		0.00800		mg/L		12/27/24 17:22	12/30/24 12:00	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 12:00	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 12:00	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1

Client Sample ID: MW-107
Lab Sample ID: 620-23112-7
Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 12:00	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 12:00	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1
Zinc	**0.0102**		0.0100		mg/L		12/27/24 17:22	12/30/24 12:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		12/31/24 10:19	12/31/24 15:08	1

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 16:25	1
Acetone	ND		10.0		ug/L			12/31/24 16:25	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 16:25	1
Benzene	ND		1.00		ug/L			12/31/24 16:25	1
Bromobenzene	ND		1.00		ug/L			12/31/24 16:25	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 16:25	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 16:25	1
Bromoform	ND		1.00		ug/L			12/31/24 16:25	1
Bromomethane	ND		2.00		ug/L			12/31/24 16:25	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 16:25	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 16:25	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 16:25	1
Chlorobenzene	ND	*-	1.00		ug/L			12/31/24 16:25	1
Chloroethane	ND		2.00		ug/L			12/31/24 16:25	1
Chloroform	ND		1.00		ug/L			12/31/24 16:25	1
Chloromethane	ND		2.00		ug/L			12/31/24 16:25	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 16:25	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 16:25	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 16:25	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 16:25	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 16:25	1
Dibromomethane	ND		1.00		ug/L			12/31/24 16:25	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 16:25	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 16:25	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 16:25	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 16:25	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:25	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:25	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:25	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 16:25	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:25	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 16:25	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:25	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:25	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 16:25	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 16:25	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 16:25	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:25	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 16:25	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 16:25	1
Naphthalene	ND		2.00		ug/L			12/31/24 16:25	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
Styrene	ND		1.00		ug/L			12/31/24 16:25	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 16:25	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 16:25	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 16:25	1
Toluene	ND		1.00		ug/L			12/31/24 16:25	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 16:25	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 16:25	1
Trichloroethene	ND		1.00		ug/L			12/31/24 16:25	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 16:25	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 16:25	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:25	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 16:25	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 16:25	1
o-Xylene	ND		1.00		ug/L			12/31/24 16:25	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 16:25	1
Ethyl ether	ND		1.00		ug/L			12/31/24 16:25	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 16:25	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:25	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 16:25	1
tert-Butanol	ND		10.0		ug/L			12/31/24 16:25	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 16:25	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 16:25	1
Ethanol	ND		200		ug/L			12/31/24 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/31/24 16:25*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/31/24 16:25*	*1*

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*12/31/24 16:25*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/31/24 16:25*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
1,2,4-Trichlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
1,2-Dichlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
1,3-Dichlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
1,4-Dichlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
1-Methylnaphthalene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4,5-Trichlorophenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4,6-Trichlorophenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4-Dichlorophenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4-Dimethylphenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4-Dinitrophenol	ND	*+	17.9		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,4-Dinitrotoluene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2,6-Dinitrotoluene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Chloronaphthalene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Chlorophenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Methylnaphthalene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Methylphenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Nitroaniline	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
2-Nitrophenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
3 & 4 Methylphenol	ND		8.93		ug/L		01/02/25 09:20	01/03/25 19:48	1
3,3'-Dichlorobenzidine	ND	*-	4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
3-Nitroaniline	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4,6-Dinitro-2-methylphenol	ND	*+	8.93		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Bromophenyl phenyl ether	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Chloro-3-methylphenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Chloroaniline	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Chlorophenyl phenyl ether	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Nitroaniline	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
4-Nitrophenol	ND		17.9		ug/L		01/02/25 09:20	01/03/25 19:48	1
Acenaphthene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Acenaphthylene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Aniline	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Anthracene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Azobenzene/Diphenyldiazene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzidine	ND		17.9		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzo[a]anthracene	ND	*-	4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzo[a]pyrene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzo[b]fluoranthene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzo[g,h,i]perylene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzo[k]fluoranthene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzoic acid	ND	*+	8.93		ug/L		01/02/25 09:20	01/03/25 19:48	1
Benzyl alcohol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Bis(2-chloroethoxy)methane	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Bis(2-chloroethyl)ether	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND	*-	4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Bis(2-ethylhexyl) phthalate	ND		8.93		ug/L		01/02/25 09:20	01/03/25 19:48	1
Butyl benzyl phthalate	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Carbazole	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Chrysene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Dibenz(a,h)anthracene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Dibenzofuran	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Diethyl phthalate	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Dimethyl phthalate	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Di-n-butyl phthalate	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Di-n-octyl phthalate	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Fluoranthene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Fluorene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Hexachlorobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Hexachlorobutadiene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Hexachlorocyclopentadiene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Hexachloroethane	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Indeno[1,2,3-cd]pyrene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Isophorone	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Naphthalene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Nitrobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
N-Nitrosodimethylamine	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
N-Nitrosodi-n-propylamine	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
N-Nitrosodiphenylamine	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Pentachloronitrobenzene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Pentachlorophenol	ND		8.93		ug/L		01/02/25 09:20	01/03/25 19:48	1
Phenanthrene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Phenol	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Pyrene	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1
Pyridine	ND		4.46		ug/L		01/02/25 09:20	01/03/25 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:48*	*1*
2-Fluorophenol (Surr)	*49*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:48*	*1*
Nitrobenzene-d5 (Surr)	*62*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:48*	*1*
Phenol-d5 (Surr)	*33*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:48*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*15 - 110*	*01/02/25 09:20*	*01/03/25 19:48*	*1*
Terphenyl-d14 (Surr)	*68*		*30 - 130*	*01/02/25 09:20*	*01/03/25 19:48*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1221	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1232	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1242	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1248	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1254	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1260	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1262	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1
PCB-1268	ND		0.364		ug/L		12/30/24 12:34	01/03/25 16:46	1

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8

Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*61*		*30 - 150*	*12/30/24 12:34*	*01/03/25 16:46*	*1*
DCB Decachlorobiphenyl (Surr)	*81*		*30 - 150*	*12/30/24 12:34*	*01/03/25 16:46*	*1*

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120	mg/L		12/27/24 17:22	12/30/24 12:06	1
Arsenic	ND		0.00800	mg/L		12/27/24 17:22	12/30/24 12:06	1
Beryllium	ND		0.00400	mg/L		12/27/24 17:22	12/30/24 12:06	1
Cadmium	ND		0.00500	mg/L		12/27/24 17:22	12/30/24 12:06	1
Chromium	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1
Copper	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1
Lead	ND		0.0150	mg/L		12/27/24 17:22	12/30/24 12:06	1
Nickel	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1
Selenium	ND		0.0300	mg/L		12/27/24 17:22	12/30/24 12:06	1
Silver	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1
Thallium	ND		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1
Zinc	**0.0965**		0.0100	mg/L		12/27/24 17:22	12/30/24 12:06	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	mg/L		12/31/24 10:19	12/31/24 15:14	1

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9

Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00	ug/L			12/31/24 16:51	1
Acetone	ND		10.0	ug/L			12/31/24 16:51	1
Acrylonitrile	ND		1.00	ug/L			12/31/24 16:51	1
Benzene	ND		1.00	ug/L			12/31/24 16:51	1
Bromobenzene	ND		1.00	ug/L			12/31/24 16:51	1
Bromochloromethane	ND		1.00	ug/L			12/31/24 16:51	1
Bromodichloromethane	ND		0.500	ug/L			12/31/24 16:51	1
Bromoform	ND		1.00	ug/L			12/31/24 16:51	1
Bromomethane	ND		2.00	ug/L			12/31/24 16:51	1
2-Butanone (MEK)	ND		2.00	ug/L			12/31/24 16:51	1
n-Butylbenzene	ND		1.00	ug/L			12/31/24 16:51	1
sec-Butylbenzene	ND		1.00	ug/L			12/31/24 16:51	1
tert-Butylbenzene	ND		1.00	ug/L			12/31/24 16:51	1
Carbon disulfide	ND		2.00	ug/L			12/31/24 16:51	1
Carbon tetrachloride	ND		1.00	ug/L			12/31/24 16:51	1
Chlorobenzene	ND	*-	1.00	ug/L			12/31/24 16:51	1
Chloroethane	ND		2.00	ug/L			12/31/24 16:51	1
Chloroform	ND		1.00	ug/L			12/31/24 16:51	1
Chloromethane	ND		2.00	ug/L			12/31/24 16:51	1
2-Chlorotoluene	ND		1.00	ug/L			12/31/24 16:51	1
4-Chlorotoluene	ND		1.00	ug/L			12/31/24 16:51	1
1,2-Dibromo-3-Chloropropane	ND		2.00	ug/L			12/31/24 16:51	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.500		ug/L			12/31/24 16:51	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 16:51	1
Dibromomethane	ND		1.00		ug/L			12/31/24 16:51	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 16:51	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 16:51	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 16:51	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 16:51	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:51	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 16:51	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:51	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 16:51	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 16:51	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 16:51	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:51	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 16:51	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 16:51	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 16:51	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 16:51	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 16:51	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 16:51	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:51	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 16:51	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 16:51	1
Naphthalene	ND		2.00		ug/L			12/31/24 16:51	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 16:51	1
Styrene	ND		1.00		ug/L			12/31/24 16:51	1
1,1,1,2-Tetrachloroethane	ND	*-	1.00		ug/L			12/31/24 16:51	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 16:51	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 16:51	1
Toluene	ND		1.00		ug/L			12/31/24 16:51	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 16:51	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 16:51	1
Trichloroethene	ND		1.00		ug/L			12/31/24 16:51	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 16:51	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 16:51	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:51	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 16:51	1
Vinyl chloride	ND	*+	1.00		ug/L			12/31/24 16:51	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 16:51	1
o-Xylene	ND		1.00		ug/L			12/31/24 16:51	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 16:51	1
Ethyl ether	ND		1.00		ug/L			12/31/24 16:51	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 16:51	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 16:51	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 16:51	1
tert-Butanol	ND		10.0		ug/L			12/31/24 16:51	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 16:51	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 16:51	1
Ethanol	ND		200		ug/L			12/31/24 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*12/31/24 16:51*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*12/31/24 16:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*12/31/24 16:51*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/31/24 16:51*	*1*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
1,2,4-Trichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
1,2-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
1,3-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
1,4-Dichlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
1-Methylnaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4,5-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4,6-Trichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4-Dichlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4-Dimethylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4-Dinitrophenol	ND	*+	18.5		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,4-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2,6-Dinitrotoluene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Chloronaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Chlorophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Methylnaphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Methylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
2-Nitrophenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
3 & 4 Methylphenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 20:17	1
3,3'-Dichlorobenzidine	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
3-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4,6-Dinitro-2-methylphenol	ND	*+	9.26		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Bromophenyl phenyl ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Chloro-3-methylphenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Chloroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Chlorophenyl phenyl ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Nitroaniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
4-Nitrophenol	ND		18.5		ug/L		01/02/25 09:20	01/03/25 20:17	1
Acenaphthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Acenaphthylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Aniline	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Azobenzene/Diphenyldiazene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzidine	ND		18.5		ug/L		01/02/25 09:20	01/03/25 20:17	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzo[a]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzo[b]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzo[g,h,i]perylene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzo[k]fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzoic acid	ND	*+	9.26		ug/L		01/02/25 09:20	01/03/25 20:17	1
Benzyl alcohol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Bis(2-chloroethoxy)methane	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Bis(2-chloroethyl)ether	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
bis (2-chloroisopropyl) ether	ND	*-	4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Bis(2-ethylhexyl) phthalate	ND		9.26		ug/L		01/02/25 09:20	01/03/25 20:17	1
Butyl benzyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Carbazole	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Chrysene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Dibenz(a,h)anthracene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Dibenzofuran	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Diethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Dimethyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Di-n-butyl phthalate	**7.89**		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Di-n-octyl phthalate	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Fluoranthene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Fluorene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Hexachlorobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Hexachlorobutadiene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Hexachlorocyclopentadiene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Hexachloroethane	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Indeno[1,2,3-cd]pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Isophorone	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Naphthalene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Nitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
N-Nitrosodimethylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
N-Nitrosodi-n-propylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
N-Nitrosodiphenylamine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Pentachloronitrobenzene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Pentachlorophenol	ND		9.26		ug/L		01/02/25 09:20	01/03/25 20:17	1
Phenanthrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Phenol	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Pyrene	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1
Pyridine	ND		4.63		ug/L		01/02/25 09:20	01/03/25 20:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*30 - 130*	*01/02/25 09:20*	*01/03/25 20:17*	*1*
2-Fluorophenol (Surr)	*39*		*15 - 110*	*01/02/25 09:20*	*01/03/25 20:17*	*1*
Nitrobenzene-d5 (Surr)	*55*		*30 - 130*	*01/02/25 09:20*	*01/03/25 20:17*	*1*
Phenol-d5 (Surr)	*27*		*15 - 110*	*01/02/25 09:20*	*01/03/25 20:17*	*1*
2,4,6-Tribromophenol (Surr)	*62*		*15 - 110*	*01/02/25 09:20*	*01/03/25 20:17*	*1*
Terphenyl-d14 (Surr)	*64*		*30 - 130*	*01/02/25 09:20*	*01/03/25 20:17*	*1*

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9

Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 12:12	1
Arsenic	**0.0133**		0.00800		mg/L		12/27/24 17:22	12/30/24 12:12	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 12:12	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 12:12	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1
Copper	**0.0165**		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 12:12	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 12:12	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1
Zinc	**0.216**		0.0100		mg/L		12/27/24 17:22	12/30/24 12:12	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		12/31/24 10:19	12/31/24 15:17	1

Client Sample ID: MW-107 DUP
Lab Sample ID: 620-23112-10

Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		0.100		mg/L			01/02/25 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*95*		*70 - 130*		*01/02/25 15:25*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		0.200		mg/L		12/31/24 11:50	01/02/25 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*75*		*40 - 140*	*12/31/24 11:50*	*01/02/25 14:28*	*1*
1-Chlorooctadecane	*101*		*40 - 140*	*12/31/24 11:50*	*01/02/25 14:28*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

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

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	TOL	DCA	DBFM
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
620-23112-1	MW-101	96	104	96	99
620-23112-2	MW-102	98	104	98	98
620-23112-3	MW-103	97	105	97	101
620-23112-4	MW-104	96	105	99	100
620-23112-5	MW-105	97	105	101	101
620-23112-6	MW-106	108	100	122	100
620-23112-6 MS	MW-106	107	101	117	103
620-23112-6 MSD	MW-106	106	101	116	104
620-23112-7	MW-107	106	100	122	100
620-23112-8	MW-108	96	104	97	99
620-23112-9	MW-106 DUP	97	105	98	99
LCS 620-42931/4	Lab Control Sample	99	102	91	98
LCS 620-42972/4	Lab Control Sample	107	101	118	105
LCSD 620-42931/5	Lab Control Sample Dup	98	102	90	97
LCSD 620-42972/5	Lab Control Sample Dup	103	100	115	103
MB 620-42931/7	Method Blank	96	104	94	99
MB 620-42972/7	Method Blank	107	100	120	100

Surrogate Legend

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

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

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TBP	TPHL
Lab Sample ID	Client Sample ID	(30-130)	(15-110)	(30-130)	(15-110)	(15-110)	(30-130)
620-23112-6	MW-106	48	31	46	20	50	53
620-23112-6 MS	MW-106	53	32	50	20	60	62
620-23112-6 MSD	MW-106	60	39	56	24	63	69
620-23112-7	MW-107	53	40	52	24	58	71
620-23112-8	MW-108	63	49	62	33	68	68
620-23112-9	MW-106 DUP	62	39	55	27	62	64
LCS 620-42978/2-A	Lab Control Sample	54	35	49	22	57	62
LCSD 620-42978/3-A	Lab Control Sample Dup	59	38	53	23	60	65
MB 620-42978/1-A	Method Blank	46	33	50	20	49	57

Surrogate Legend

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

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	25DBTf1 (70-130)
620-23112-7	MW-107	100
620-23112-7 MS	MW-107	89
620-23112-7 MSD	MW-107	102
620-23112-10	MW-107 DUP	95
LCS 620-42981/3	Lab Control Sample	103
LCSD 620-42981/4	Lab Control Sample Dup	101
MB 620-42981/5	Method Blank	93

Surrogate Legend

25DBTf = 2,5-Dibromotoluene (fid)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTPH (40-140)	1COD (40-140)
620-23112-7	MW-107	71	85
620-23112-7 MS	MW-107	86	92
620-23112-7 MSD	MW-107	79	85
620-23112-10	MW-107 DUP	75	101
LCS 620-42958/2-A	Lab Control Sample	89	97
LCSD 620-42958/3-A	Lab Control Sample Dup	92	99
MB 620-42958/1-A	Method Blank	66	90

Surrogate Legend

OTPH = o-Terphenyl
1COD = 1-Chlorooctadecane

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX2 (30-150)	DCB1 (30-150)
620-23112-6	MW-106	65	80
620-23112-6 MS	MW-106	68	95
620-23112-6 MSD	MW-106	75	91
620-23112-8	MW-108	61	81
LCS 620-42924/2-A	Lab Control Sample	76	83
LCSD 620-42924/3-A	Lab Control Sample Dup	55	75
MB 620-42924/1-A	Method Blank	67	76

Surrogate Legend

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

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: MB 620-42931/7
Matrix: Water
Analysis Batch: 42931

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			12/31/24 11:37	1
Acetone	ND		10.0		ug/L			12/31/24 11:37	1
Acrylonitrile	ND		1.00		ug/L			12/31/24 11:37	1
Benzene	ND		1.00		ug/L			12/31/24 11:37	1
Bromobenzene	ND		1.00		ug/L			12/31/24 11:37	1
Bromochloromethane	ND		1.00		ug/L			12/31/24 11:37	1
Bromodichloromethane	ND		0.500		ug/L			12/31/24 11:37	1
Bromoform	ND		1.00		ug/L			12/31/24 11:37	1
Bromomethane	ND		2.00		ug/L			12/31/24 11:37	1
2-Butanone (MEK)	ND		2.00		ug/L			12/31/24 11:37	1
n-Butylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
sec-Butylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
tert-Butylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
Carbon disulfide	ND		2.00		ug/L			12/31/24 11:37	1
Carbon tetrachloride	ND		1.00		ug/L			12/31/24 11:37	1
Chlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
Chloroethane	ND		2.00		ug/L			12/31/24 11:37	1
Chloroform	ND		1.00		ug/L			12/31/24 11:37	1
Chloromethane	ND		2.00		ug/L			12/31/24 11:37	1
2-Chlorotoluene	ND		1.00		ug/L			12/31/24 11:37	1
4-Chlorotoluene	ND		1.00		ug/L			12/31/24 11:37	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			12/31/24 11:37	1
Dibromochloromethane	ND		0.500		ug/L			12/31/24 11:37	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			12/31/24 11:37	1
Dibromomethane	ND		1.00		ug/L			12/31/24 11:37	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			12/31/24 11:37	1
1,1-Dichloroethane	ND		1.00		ug/L			12/31/24 11:37	1
1,2-Dichloroethane	ND		1.00		ug/L			12/31/24 11:37	1
1,1-Dichloroethene	ND		1.00		ug/L			12/31/24 11:37	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 11:37	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/31/24 11:37	1
1,2-Dichloropropane	ND		1.00		ug/L			12/31/24 11:37	1
1,3-Dichloropropane	ND		1.00		ug/L			12/31/24 11:37	1
2,2-Dichloropropane	ND		1.00		ug/L			12/31/24 11:37	1
1,1-Dichloropropene	ND		1.00		ug/L			12/31/24 11:37	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 11:37	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			12/31/24 11:37	1
Ethylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
Hexachlorobutadiene	ND		1.00		ug/L			12/31/24 11:37	1
2-Hexanone (MBK)	ND		2.00		ug/L			12/31/24 11:37	1
Isopropylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
4-Isopropyltoluene	ND		1.00		ug/L			12/31/24 11:37	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/31/24 11:37	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			12/31/24 11:37	1
Methylene Chloride	ND		2.00		ug/L			12/31/24 11:37	1

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

Lab Sample ID: MB 620-42931/7
Matrix: Water
Analysis Batch: 42931

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		2.00		ug/L			12/31/24 11:37	1
N-Propylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
Styrene	ND		1.00		ug/L			12/31/24 11:37	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/31/24 11:37	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			12/31/24 11:37	1
Tetrachloroethene	ND		1.00		ug/L			12/31/24 11:37	1
Toluene	ND		1.00		ug/L			12/31/24 11:37	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/31/24 11:37	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/31/24 11:37	1
Trichloroethene	ND		1.00		ug/L			12/31/24 11:37	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			12/31/24 11:37	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/31/24 11:37	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/31/24 11:37	1
Vinyl chloride	ND		1.00		ug/L			12/31/24 11:37	1
m,p-Xylene	ND		1.00		ug/L			12/31/24 11:37	1
o-Xylene	ND		1.00		ug/L			12/31/24 11:37	1
Tetrahydrofuran	ND		2.00		ug/L			12/31/24 11:37	1
Ethyl ether	ND		1.00		ug/L			12/31/24 11:37	1
Tert-amyl methyl ether	ND		1.00		ug/L			12/31/24 11:37	1
Ethyl tert-butyl ether	ND		1.00		ug/L			12/31/24 11:37	1
di-Isopropyl ether	ND		1.00		ug/L			12/31/24 11:37	1
tert-Butanol	ND		10.0		ug/L			12/31/24 11:37	1
1,4-Dioxane	ND		50.0		ug/L			12/31/24 11:37	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			12/31/24 11:37	1
Ethanol	ND		200		ug/L			12/31/24 11:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/31/24 11:37*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*12/31/24 11:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*12/31/24 11:37*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*12/31/24 11:37*	*1*

Lab Sample ID: LCS 620-42931/4
Matrix: Water
Analysis Batch: 42931

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	19.96		ug/L		100	85 - 124		
Acetone			20.0	16.42		ug/L		82	14 - 133		
Acrylonitrile			20.0	23.67		ug/L		118	62 - 134		
Benzene			20.0	21.00		ug/L		105	86 - 111		
Bromobenzene			20.0	17.93		ug/L		90	82 - 120		
Bromochloromethane			20.0	19.83		ug/L		99	83 - 123		
Bromodichloromethane			20.0	18.49		ug/L		92	83 - 137		

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

Lab Sample ID: LCS 620-42931/4
Matrix: Water
Analysis Batch: 42931

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromoform	20.0	19.13		ug/L		96	91 - 137
Bromomethane	20.0	21.21		ug/L		106	29 - 148
2-Butanone (MEK)	20.0	19.26		ug/L		96	10 - 200
n-Butylbenzene	20.0	20.75		ug/L		104	85 - 138
sec-Butylbenzene	20.0	20.95		ug/L		105	75 - 118
tert-Butylbenzene	20.0	21.52		ug/L		108	85 - 122
Carbon disulfide	20.0	19.18		ug/L		96	69 - 150
Carbon tetrachloride	20.0	19.45		ug/L		97	84 - 123
Chlorobenzene	20.0	18.20	*-	ug/L		91	93 - 115
Chloroethane	20.0	25.97		ug/L		130	56 - 155
Chloroform	20.0	19.61		ug/L		98	84 - 116
Chloromethane	20.0	23.55		ug/L		118	45 - 138
2-Chlorotoluene	20.0	19.61		ug/L		98	88 - 116
4-Chlorotoluene	20.0	19.32		ug/L		97	81 - 128
1,2-Dibromo-3-Chloropropane	20.0	19.28		ug/L		96	70 - 139
Dibromochloromethane	20.0	19.37		ug/L		97	83 - 132
1,2-Dibromoethane (EDB)	20.0	20.77		ug/L		104	82 - 125
Dibromomethane	20.0	19.63		ug/L		98	80 - 125
1,2-Dichlorobenzene	20.0	19.46		ug/L		97	84 - 128
1,3-Dichlorobenzene	20.0	18.98		ug/L		95	85 - 120
1,4-Dichlorobenzene	20.0	18.36		ug/L		92	86 - 116
Dichlorodifluoromethane (Freon 12)	20.0	14.70		ug/L		74	36 - 131
1,1-Dichloroethane	20.0	20.04		ug/L		100	81 - 120
1,2-Dichloroethane	20.0	18.25		ug/L		91	82 - 116
1,1-Dichloroethene	20.0	19.34		ug/L		97	83 - 120
cis-1,2-Dichloroethene	20.0	19.54		ug/L		98	81 - 124
trans-1,2-Dichloroethene	20.0	19.54		ug/L		98	81 - 127
1,2-Dichloropropane	20.0	20.97		ug/L		105	76 - 132
1,3-Dichloropropane	20.0	20.80		ug/L		104	74 - 122
2,2-Dichloropropane	20.0	20.31		ug/L		102	77 - 130
1,1-Dichloropropene	20.0	20.70		ug/L		103	81 - 115
cis-1,3-Dichloropropene	20.0	21.93		ug/L		110	74 - 129
trans-1,3-Dichloropropene	20.0	21.98		ug/L		110	78 - 126
Ethylbenzene	20.0	19.30		ug/L		97	89 - 117
Hexachlorobutadiene	20.0	17.99		ug/L		90	77 - 118
2-Hexanone (MBK)	20.0	18.14		ug/L		91	37 - 123
Isopropylbenzene	20.0	20.48		ug/L		102	83 - 117
4-Isopropyltoluene	20.0	21.08		ug/L		105	83 - 124
Methyl tert-butyl ether	20.0	21.41		ug/L		107	70 - 126
4-Methyl-2-pentanone (MIBK)	20.0	22.46		ug/L		112	59 - 118
Methylene Chloride	20.0	20.03		ug/L		100	75 - 121
Naphthalene	20.0	17.06		ug/L		85	67 - 123
N-Propylbenzene	20.0	20.19		ug/L		101	84 - 128
Styrene	20.0	18.90		ug/L		94	78 - 127
1,1,1,2-Tetrachloroethane	20.0	18.56		ug/L		93	91 - 118
1,1,2,2-Tetrachloroethane	20.0	19.77		ug/L		99	77 - 129
Tetrachloroethene	20.0	19.27		ug/L		96	85 - 116
Toluene	20.0	20.10		ug/L		101	88 - 109

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

Lab Sample ID: LCS 620-42931/4
Matrix: Water
Analysis Batch: 42931

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	20.0	19.80		ug/L		99	67 - 134
1,2,4-Trichlorobenzene	20.0	19.84		ug/L		99	78 - 133
1,3,5-Trichlorobenzene	20.0	19.41		ug/L		97	77 - 127
1,1,1-Trichloroethane	20.0	19.37		ug/L		97	83 - 124
1,1,2-Trichloroethane	20.0	20.87		ug/L		104	84 - 132
Trichloroethene	20.0	19.25		ug/L		96	74 - 118
Trichlorofluoromethane (Freon 11)	20.0	17.91		ug/L		90	82 - 126
1,2,3-Trichloropropane	20.0	19.20		ug/L		96	77 - 124
1,2,4-Trimethylbenzene	20.0	20.63		ug/L		103	89 - 126
1,3,5-Trimethylbenzene	20.0	20.13		ug/L		101	89 - 125
Vinyl chloride	20.0	26.54	*+	ug/L		133	62 - 130
m,p-Xylene	20.0	19.87		ug/L		99	85 - 123
o-Xylene	20.0	19.97		ug/L		100	85 - 119
Tetrahydrofuran	20.0	23.67		ug/L		118	60 - 133
Ethyl ether	20.0	20.20		ug/L		101	69 - 122
Tert-amyl methyl ether	20.0	22.17		ug/L		111	50 - 140
Ethyl tert-butyl ether	20.0	22.47		ug/L		112	60 - 131
di-Isopropyl ether	20.0	22.36		ug/L		112	67 - 125
tert-Butanol	200	243.0		ug/L		122	50 - 169
1,4-Dioxane	200	230.2		ug/L		115	28 - 150
trans-1,4-Dichloro-2-butene	20.0	22.45		ug/L		112	48 - 153
Ethanol	400	405.4		ug/L		101	47 - 170

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 620-42931/5
Matrix: Water
Analysis Batch: 42931

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
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.0	18.53		ug/L		93	85 - 124	7	20
Acetone	20.0	15.25		ug/L		76	14 - 133	7	20
Acrylonitrile	20.0	24.21		ug/L		121	62 - 134	2	20
Benzene	20.0	20.44		ug/L		102	86 - 111	3	20
Bromobenzene	20.0	17.63		ug/L		88	82 - 120	2	20
Bromochloromethane	20.0	19.29		ug/L		96	83 - 123	3	20
Bromodichloromethane	20.0	18.09		ug/L		90	83 - 137	2	20
Bromoform	20.0	18.85		ug/L		94	91 - 137	1	20
Bromomethane	20.0	21.28		ug/L		106	29 - 148	0	20
2-Butanone (MEK)	20.0	18.56		ug/L		93	10 - 200	4	20
n-Butylbenzene	20.0	20.22		ug/L		101	85 - 138	3	20
sec-Butylbenzene	20.0	20.32		ug/L		102	75 - 118	3	20
tert-Butylbenzene	20.0	21.15		ug/L		106	85 - 122	2	20

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

Lab Sample ID: LCSD 620-42931/5
Matrix: Water
Analysis Batch: 42931

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
Carbon disulfide	20.0	19.02		ug/L		95	69 - 150	1	20
Carbon tetrachloride	20.0	18.44		ug/L		92	84 - 123	5	20
Chlorobenzene	20.0	17.75	*-	ug/L		89	93 - 115	3	20
Chloroethane	20.0	25.45		ug/L		127	56 - 155	2	20
Chloroform	20.0	19.15		ug/L		96	84 - 116	2	20
Chloromethane	20.0	23.03		ug/L		115	45 - 138	2	20
2-Chlorotoluene	20.0	18.94		ug/L		95	88 - 116	4	20
4-Chlorotoluene	20.0	19.22		ug/L		96	81 - 128	1	20
1,2-Dibromo-3-Chloropropane	20.0	17.99		ug/L		90	70 - 139	7	20
Dibromochloromethane	20.0	18.81		ug/L		94	83 - 132	3	20
1,2-Dibromoethane (EDB)	20.0	20.38		ug/L		102	82 - 125	2	20
Dibromomethane	20.0	19.22		ug/L		96	80 - 125	2	20
1,2-Dichlorobenzene	20.0	18.87		ug/L		94	84 - 128	3	20
1,3-Dichlorobenzene	20.0	18.53		ug/L		93	85 - 120	2	20
1,4-Dichlorobenzene	20.0	17.76		ug/L		89	86 - 116	3	20
Dichlorodifluoromethane (Freon 12)	20.0	13.92		ug/L		70	36 - 131	5	20
1,1-Dichloroethane	20.0	19.56		ug/L		98	81 - 120	2	20
1,2-Dichloroethane	20.0	17.71		ug/L		89	82 - 116	3	20
1,1-Dichloroethene	20.0	18.78		ug/L		94	83 - 120	3	20
cis-1,2-Dichloroethene	20.0	20.07		ug/L		100	81 - 124	3	20
trans-1,2-Dichloroethene	20.0	19.42		ug/L		97	81 - 127	1	20
1,2-Dichloropropane	20.0	20.45		ug/L		102	76 - 132	3	20
1,3-Dichloropropane	20.0	20.53		ug/L		103	74 - 122	1	20
2,2-Dichloropropane	20.0	19.50		ug/L		98	77 - 130	4	20
1,1-Dichloropropene	20.0	19.94		ug/L		100	81 - 115	4	20
cis-1,3-Dichloropropene	20.0	21.68		ug/L		108	74 - 129	1	20
trans-1,3-Dichloropropene	20.0	21.83		ug/L		109	78 - 126	1	20
Ethylbenzene	20.0	18.60		ug/L		93	89 - 117	4	20
Hexachlorobutadiene	20.0	17.38		ug/L		87	77 - 118	3	20
2-Hexanone (MBK)	20.0	16.33		ug/L		82	37 - 123	11	20
Isopropylbenzene	20.0	19.93		ug/L		100	83 - 117	3	20
4-Isopropyltoluene	20.0	20.53		ug/L		103	83 - 124	3	20
Methyl tert-butyl ether	20.0	20.98		ug/L		105	70 - 126	2	20
4-Methyl-2-pentanone (MIBK)	20.0	21.33		ug/L		107	59 - 118	5	20
Methylene Chloride	20.0	19.21		ug/L		96	75 - 121	4	20
Naphthalene	20.0	16.42		ug/L		82	67 - 123	4	20
N-Propylbenzene	20.0	19.76		ug/L		99	84 - 128	2	20
Styrene	20.0	18.49		ug/L		92	78 - 127	2	20
1,1,1,2-Tetrachloroethane	20.0	17.94	*-	ug/L		90	91 - 118	3	20
1,1,2,2-Tetrachloroethane	20.0	18.94		ug/L		95	77 - 129	4	20
Tetrachloroethene	20.0	18.69		ug/L		93	85 - 116	3	20
Toluene	20.0	19.60		ug/L		98	88 - 109	3	20
1,2,3-Trichlorobenzene	20.0	19.43		ug/L		97	67 - 134	2	20
1,2,4-Trichlorobenzene	20.0	19.14		ug/L		96	78 - 133	4	20
1,3,5-Trichlorobenzene	20.0	18.94		ug/L		95	77 - 127	2	20
1,1,1-Trichloroethane	20.0	18.79		ug/L		94	83 - 124	3	20
1,1,2-Trichloroethane	20.0	20.34		ug/L		102	84 - 132	3	20
Trichloroethene	20.0	18.40		ug/L		92	74 - 118	5	20

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

Lab Sample ID: LCSD 620-42931/5
Matrix: Water
Analysis Batch: 42931

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
Trichlorofluoromethane (Freon 11)			20.0	16.90		ug/L		85	82 - 126	6	20
1,2,3-Trichloropropane			20.0	18.70		ug/L		93	77 - 124	3	20
1,2,4-Trimethylbenzene			20.0	20.06		ug/L		100	89 - 126	3	20
1,3,5-Trimethylbenzene			20.0	19.83		ug/L		99	89 - 125	1	20
Vinyl chloride			20.0	25.79		ug/L		129	62 - 130	3	20
m,p-Xylene			20.0	19.44		ug/L		97	85 - 123	2	20
o-Xylene			20.0	19.57		ug/L		98	85 - 119	2	20
Tetrahydrofuran			20.0	21.85		ug/L		109	60 - 133	8	20
Ethyl ether			20.0	20.18		ug/L		101	69 - 122	0	20
Tert-amyl methyl ether			20.0	21.92		ug/L		110	50 - 140	1	20
Ethyl tert-butyl ether			20.0	22.01		ug/L		110	60 - 131	2	20
di-Isopropyl ether			20.0	22.12		ug/L		111	67 - 125	1	20
tert-Butanol			200	230.4		ug/L		115	50 - 169	5	20
1,4-Dioxane			200	216.4		ug/L		108	28 - 150	6	20
trans-1,4-Dichloro-2-butene			20.0	21.65		ug/L		108	48 - 153	4	20
Ethanol			400	459.0		ug/L		115	47 - 170	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*

Lab Sample ID: MB 620-42972/7
Matrix: Water
Analysis Batch: 42972

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		1.00		ug/L			01/02/25 12:14	1
Acetone	ND		10.0		ug/L			01/02/25 12:14	1
Acrylonitrile	ND		1.00		ug/L			01/02/25 12:14	1
Benzene	ND		1.00		ug/L			01/02/25 12:14	1
Bromobenzene	ND		1.00		ug/L			01/02/25 12:14	1
Bromochloromethane	ND		1.00		ug/L			01/02/25 12:14	1
Bromodichloromethane	ND		0.500		ug/L			01/02/25 12:14	1
Bromoform	ND		1.00		ug/L			01/02/25 12:14	1
Bromomethane	ND		2.00		ug/L			01/02/25 12:14	1
2-Butanone (MEK)	ND		2.00		ug/L			01/02/25 12:14	1
n-Butylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
sec-Butylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
tert-Butylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
Carbon disulfide	ND		2.00		ug/L			01/02/25 12:14	1
Carbon tetrachloride	ND		1.00		ug/L			01/02/25 12:14	1
Chlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
Chloroethane	ND		2.00		ug/L			01/02/25 12:14	1
Chloroform	ND		1.00		ug/L			01/02/25 12:14	1
Chloromethane	ND		2.00		ug/L			01/02/25 12:14	1

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

Lab Sample ID: MB 620-42972/7
Matrix: Water
Analysis Batch: 42972

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		1.00		ug/L			01/02/25 12:14	1
4-Chlorotoluene	ND		1.00		ug/L			01/02/25 12:14	1
1,2-Dibromo-3-Chloropropane	ND		2.00		ug/L			01/02/25 12:14	1
Dibromochloromethane	ND		0.500		ug/L			01/02/25 12:14	1
1,2-Dibromoethane (EDB)	ND		0.500		ug/L			01/02/25 12:14	1
Dibromomethane	ND		1.00		ug/L			01/02/25 12:14	1
1,2-Dichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,3-Dichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,4-Dichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
Dichlorodifluoromethane (Freon 12)	ND		2.00		ug/L			01/02/25 12:14	1
1,1-Dichloroethane	ND		1.00		ug/L			01/02/25 12:14	1
1,2-Dichloroethane	ND		1.00		ug/L			01/02/25 12:14	1
1,1-Dichloroethene	ND		1.00		ug/L			01/02/25 12:14	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 12:14	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			01/02/25 12:14	1
1,2-Dichloropropane	ND		1.00		ug/L			01/02/25 12:14	1
1,3-Dichloropropane	ND		1.00		ug/L			01/02/25 12:14	1
2,2-Dichloropropane	ND		1.00		ug/L			01/02/25 12:14	1
1,1-Dichloropropene	ND		1.00		ug/L			01/02/25 12:14	1
cis-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 12:14	1
trans-1,3-Dichloropropene	ND		0.500		ug/L			01/02/25 12:14	1
Ethylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
Hexachlorobutadiene	ND		1.00		ug/L			01/02/25 12:14	1
2-Hexanone (MBK)	ND		2.00		ug/L			01/02/25 12:14	1
Isopropylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
4-Isopropyltoluene	ND		1.00		ug/L			01/02/25 12:14	1
Methyl tert-butyl ether	ND		1.00		ug/L			01/02/25 12:14	1
4-Methyl-2-pentanone (MIBK)	ND		2.00		ug/L			01/02/25 12:14	1
Methylene Chloride	ND		2.00		ug/L			01/02/25 12:14	1
Naphthalene	ND		2.00		ug/L			01/02/25 12:14	1
N-Propylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
Styrene	ND		1.00		ug/L			01/02/25 12:14	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			01/02/25 12:14	1
1,1,2,2-Tetrachloroethane	ND		0.500		ug/L			01/02/25 12:14	1
Tetrachloroethene	ND		1.00		ug/L			01/02/25 12:14	1
Toluene	ND		1.00		ug/L			01/02/25 12:14	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,3,5-Trichlorobenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,1,1-Trichloroethane	ND		1.00		ug/L			01/02/25 12:14	1
1,1,2-Trichloroethane	ND		1.00		ug/L			01/02/25 12:14	1
Trichloroethene	ND		1.00		ug/L			01/02/25 12:14	1
Trichlorofluoromethane (Freon 11)	ND		1.00		ug/L			01/02/25 12:14	1
1,2,3-Trichloropropane	ND		1.00		ug/L			01/02/25 12:14	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			01/02/25 12:14	1
Vinyl chloride	ND		1.00		ug/L			01/02/25 12:14	1
m,p-Xylene	ND		1.00		ug/L			01/02/25 12:14	1
o-Xylene	ND		1.00		ug/L			01/02/25 12:14	1

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

Lab Sample ID: MB 620-42972/7
Matrix: Water
Analysis Batch: 42972

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	ND		2.00		ug/L			01/02/25 12:14	1
Ethyl ether	ND		1.00		ug/L			01/02/25 12:14	1
Tert-amyl methyl ether	ND		1.00		ug/L			01/02/25 12:14	1
Ethyl tert-butyl ether	ND		1.00		ug/L			01/02/25 12:14	1
di-Isopropyl ether	ND		1.00		ug/L			01/02/25 12:14	1
tert-Butanol	ND		10.0		ug/L			01/02/25 12:14	1
1,4-Dioxane	ND		50.0		ug/L			01/02/25 12:14	1
trans-1,4-Dichloro-2-butene	ND		5.00		ug/L			01/02/25 12:14	1
Ethanol	ND		200		ug/L			01/02/25 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*01/02/25 12:14*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*01/02/25 12:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*120*		*70 - 130*		*01/02/25 12:14*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*01/02/25 12:14*	*1*

Lab Sample ID: LCS 620-42972/4
Matrix: Water
Analysis Batch: 42972

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.0	20.00		ug/L		100	85 - 124
Acetone	20.0	19.43		ug/L		97	14 - 133
Acrylonitrile	20.0	24.36		ug/L		122	62 - 134
Benzene	20.0	20.11		ug/L		101	86 - 111
Bromobenzene	20.0	17.76		ug/L		89	82 - 120
Bromochloromethane	20.0	19.28		ug/L		96	83 - 123
Bromodichloromethane	20.0	19.26		ug/L		96	83 - 137
Bromoform	20.0	16.55	*-	ug/L		83	91 - 137
Bromomethane	20.0	22.03		ug/L		110	29 - 148
2-Butanone (MEK)	20.0	17.52		ug/L		88	10 - 200
n-Butylbenzene	20.0	21.81		ug/L		109	85 - 138
sec-Butylbenzene	20.0	20.23		ug/L		101	75 - 118
tert-Butylbenzene	20.0	18.49		ug/L		92	85 - 122
Carbon disulfide	20.0	20.93		ug/L		105	69 - 150
Carbon tetrachloride	20.0	19.37		ug/L		97	84 - 123
Chlorobenzene	20.0	19.95		ug/L		100	93 - 115
Chloroethane	20.0	23.61		ug/L		118	56 - 155
Chloroform	20.0	22.02		ug/L		110	84 - 116
Chloromethane	20.0	29.50	*+	ug/L		147	45 - 138
2-Chlorotoluene	20.0	19.28		ug/L		96	88 - 116
4-Chlorotoluene	20.0	19.56		ug/L		98	81 - 128
1,2-Dibromo-3-Chloropropane	20.0	20.18		ug/L		101	70 - 139
Dibromochloromethane	20.0	18.14		ug/L		91	83 - 132
1,2-Dibromoethane (EDB)	20.0	19.85		ug/L		99	82 - 125
Dibromomethane	20.0	21.32		ug/L		107	80 - 125
1,2-Dichlorobenzene	20.0	19.20		ug/L		96	84 - 128
1,3-Dichlorobenzene	20.0	18.56		ug/L		93	85 - 120

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

Lab Sample ID: LCS 620-42972/4
Matrix: Water
Analysis Batch: 42972

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	20.0	19.05		ug/L		95	86 - 116
Dichlorodifluoromethane (Freon 12)	20.0	19.31		ug/L		97	36 - 131
1,1-Dichloroethane	20.0	23.13		ug/L		116	81 - 120
1,2-Dichloroethane	20.0	22.26		ug/L		111	82 - 116
1,1-Dichloroethene	20.0	20.38		ug/L		102	83 - 120
cis-1,2-Dichloroethene	20.0	20.57		ug/L		103	81 - 124
trans-1,2-Dichloroethene	20.0	20.27		ug/L		101	81 - 127
1,2-Dichloropropane	20.0	22.09		ug/L		110	76 - 132
1,3-Dichloropropane	20.0	20.35		ug/L		102	74 - 122
2,2-Dichloropropane	20.0	18.91		ug/L		95	77 - 130
1,1-Dichloropropene	20.0	18.91		ug/L		95	81 - 115
cis-1,3-Dichloropropene	20.0	18.92		ug/L		95	74 - 129
trans-1,3-Dichloropropene	20.0	19.97		ug/L		100	78 - 126
Ethylbenzene	20.0	19.99		ug/L		100	89 - 117
Hexachlorobutadiene	20.0	16.64		ug/L		83	77 - 118
2-Hexanone (MBK)	20.0	17.41		ug/L		87	37 - 123
Isopropylbenzene	20.0	19.74		ug/L		99	83 - 117
4-Isopropyltoluene	20.0	19.61		ug/L		98	83 - 124
Methyl tert-butyl ether	20.0	18.86		ug/L		94	70 - 126
4-Methyl-2-pentanone (MIBK)	20.0	21.62		ug/L		108	59 - 118
Methylene Chloride	20.0	20.77		ug/L		104	75 - 121
Naphthalene	20.0	16.90		ug/L		85	67 - 123
N-Propylbenzene	20.0	21.77		ug/L		109	84 - 128
Styrene	20.0	18.64		ug/L		93	78 - 127
1,1,1,2-Tetrachloroethane	20.0	18.71		ug/L		94	91 - 118
1,1,2,2-Tetrachloroethane	20.0	20.20		ug/L		101	77 - 129
Tetrachloroethene	20.0	16.97		ug/L		85	85 - 116
Toluene	20.0	19.44		ug/L		97	88 - 109
1,2,3-Trichlorobenzene	20.0	16.77		ug/L		84	67 - 134
1,2,4-Trichlorobenzene	20.0	16.68		ug/L		83	78 - 133
1,3,5-Trichlorobenzene	20.0	17.57		ug/L		88	77 - 127
1,1,1-Trichloroethane	20.0	20.02		ug/L		100	83 - 124
1,1,2-Trichloroethane	20.0	21.45		ug/L		107	84 - 132
Trichloroethene	20.0	19.75		ug/L		99	74 - 118
Trichlorofluoromethane (Freon 11)	20.0	21.77		ug/L		109	82 - 126
1,2,3-Trichloropropane	20.0	21.27		ug/L		106	77 - 124
1,2,4-Trimethylbenzene	20.0	19.61		ug/L		98	89 - 126
1,3,5-Trimethylbenzene	20.0	19.65		ug/L		98	89 - 125
Vinyl chloride	20.0	24.51		ug/L		123	62 - 130
m,p-Xylene	40.0	41.04		ug/L		103	85 - 123
o-Xylene	20.0	20.53		ug/L		103	85 - 119
Tetrahydrofuran	20.0	24.32		ug/L		122	60 - 133
Ethyl ether	20.0	20.68		ug/L		103	69 - 122
Tert-amyl methyl ether	20.0	17.84		ug/L		89	50 - 140
Ethyl tert-butyl ether	20.0	19.37		ug/L		97	60 - 131
di-Isopropyl ether	20.0	22.33		ug/L		112	67 - 125
tert-Butanol	200	228.7		ug/L		114	50 - 169

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

Lab Sample ID: LCS 620-42972/4
Matrix: Water
Analysis Batch: 42972

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			200	181.4		ug/L		91	28 - 150		
trans-1,4-Dichloro-2-butene			20.0	24.51		ug/L		123	48 - 153		
Ethanol			400	557.1		ug/L		139	47 - 170		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*118*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 620-42972/5
Matrix: Water
Analysis Batch: 42972

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
1,1,2-Trichlorotrifluoroethane (Freon 113)			20.0	19.48		ug/L		97	85 - 124	3	20
Acetone			20.0	18.12		ug/L		91	14 - 133	7	20
Acrylonitrile			20.0	24.24		ug/L		121	62 - 134	0	20
Benzene			20.0	19.66		ug/L		98	86 - 111	2	20
Bromobenzene			20.0	17.04		ug/L		85	82 - 120	4	20
Bromochloromethane			20.0	18.64		ug/L		93	83 - 123	3	20
Bromodichloromethane			20.0	18.28		ug/L		91	83 - 137	5	20
Bromoform			20.0	16.19	*-	ug/L		81	91 - 137	2	20
Bromomethane			20.0	22.19		ug/L		111	29 - 148	1	20
2-Butanone (MEK)			20.0	14.72		ug/L		74	10 - 200	17	20
n-Butylbenzene			20.0	21.71		ug/L		109	85 - 138	0	20
sec-Butylbenzene			20.0	19.76		ug/L		99	75 - 118	2	20
tert-Butylbenzene			20.0	18.83		ug/L		94	85 - 122	2	20
Carbon disulfide			20.0	20.63		ug/L		103	69 - 150	1	20
Carbon tetrachloride			20.0	18.87		ug/L		94	84 - 123	3	20
Chlorobenzene			20.0	18.96		ug/L		95	93 - 115	5	20
Chloroethane			20.0	21.28		ug/L		106	56 - 155	10	20
Chloroform			20.0	21.17		ug/L		106	84 - 116	4	20
Chloromethane			20.0	29.35	*+	ug/L		147	45 - 138	0	20
2-Chlorotoluene			20.0	18.67		ug/L		93	88 - 116	3	20
4-Chlorotoluene			20.0	19.12		ug/L		96	81 - 128	2	20
1,2-Dibromo-3-Chloropropane			20.0	20.87		ug/L		104	70 - 139	3	20
Dibromochloromethane			20.0	17.80		ug/L		89	83 - 132	2	20
1,2-Dibromoethane (EDB)			20.0	19.94		ug/L		100	82 - 125	0	20
Dibromomethane			20.0	20.85		ug/L		104	80 - 125	2	20
1,2-Dichlorobenzene			20.0	19.06		ug/L		95	84 - 128	1	20
1,3-Dichlorobenzene			20.0	18.27		ug/L		91	85 - 120	2	20
1,4-Dichlorobenzene			20.0	19.05		ug/L		95	86 - 116	0	20
Dichlorodifluoromethane (Freon 12)			20.0	17.04		ug/L		85	36 - 131	13	20
1,1-Dichloroethane			20.0	22.39		ug/L		112	81 - 120	3	20
1,2-Dichloroethane			20.0	21.66		ug/L		108	82 - 116	3	20
1,1-Dichloroethene			20.0	20.14		ug/L		101	83 - 120	1	20

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

Lab Sample ID: LCSD 620-42972/5
Matrix: Water
Analysis Batch: 42972

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
cis-1,2-Dichloroethene	20.0	20.22		ug/L		101	81 - 124	2	20
trans-1,2-Dichloroethene	20.0	19.67		ug/L		98	81 - 127	3	20
1,2-Dichloropropane	20.0	21.73		ug/L		109	76 - 132	2	20
1,3-Dichloropropane	20.0	20.55		ug/L		103	74 - 122	1	20
2,2-Dichloropropane	20.0	18.04		ug/L		90	77 - 130	5	20
1,1-Dichloropropene	20.0	18.44		ug/L		92	81 - 115	3	20
cis-1,3-Dichloropropene	20.0	18.54		ug/L		93	74 - 129	2	20
trans-1,3-Dichloropropene	20.0	19.21		ug/L		96	78 - 126	4	20
Ethylbenzene	20.0	19.14		ug/L		96	89 - 117	4	20
Hexachlorobutadiene	20.0	16.84		ug/L		84	77 - 118	1	20
2-Hexanone (MBK)	20.0	18.63		ug/L		93	37 - 123	7	20
Isopropylbenzene	20.0	18.97		ug/L		95	83 - 117	4	20
4-Isopropyltoluene	20.0	19.47		ug/L		97	83 - 124	1	20
Methyl tert-butyl ether	20.0	18.48		ug/L		92	70 - 126	2	20
4-Methyl-2-pentanone (MIBK)	20.0	21.75		ug/L		109	59 - 118	1	20
Methylene Chloride	20.0	20.27		ug/L		101	75 - 121	2	20
Naphthalene	20.0	17.77		ug/L		89	67 - 123	5	20
N-Propylbenzene	20.0	21.16		ug/L		106	84 - 128	3	20
Styrene	20.0	18.01		ug/L		90	78 - 127	3	20
1,1,1,2-Tetrachloroethane	20.0	17.71	*-	ug/L		89	91 - 118	5	20
1,1,2,2-Tetrachloroethane	20.0	19.92		ug/L		100	77 - 129	1	20
Tetrachloroethene	20.0	16.93		ug/L		85	85 - 116	0	20
Toluene	20.0	18.99		ug/L		95	88 - 109	2	20
1,2,3-Trichlorobenzene	20.0	16.80		ug/L		84	67 - 134	0	20
1,2,4-Trichlorobenzene	20.0	16.76		ug/L		84	78 - 133	0	20
1,3,5-Trichlorobenzene	20.0	17.54		ug/L		88	77 - 127	0	20
1,1,1-Trichloroethane	20.0	19.53		ug/L		98	83 - 124	2	20
1,1,2-Trichloroethane	20.0	21.07		ug/L		105	84 - 132	2	20
Trichloroethene	20.0	19.27		ug/L		96	74 - 118	2	20
Trichlorofluoromethane (Freon 11)	20.0	20.99		ug/L		105	82 - 126	4	20
1,2,3-Trichloropropane	20.0	20.96		ug/L		105	77 - 124	1	20
1,2,4-Trimethylbenzene	20.0	19.33		ug/L		97	89 - 126	1	20
1,3,5-Trimethylbenzene	20.0	19.02		ug/L		95	89 - 125	3	20
Vinyl chloride	20.0	24.13		ug/L		121	62 - 130	2	20
m,p-Xylene	40.0	39.61		ug/L		99	85 - 123	4	20
o-Xylene	20.0	19.66		ug/L		98	85 - 119	4	20
Tetrahydrofuran	20.0	25.40		ug/L		127	60 - 133	4	20
Ethyl ether	20.0	20.32		ug/L		102	69 - 122	2	20
Tert-amyl methyl ether	20.0	18.00		ug/L		90	50 - 140	1	20
Ethyl tert-butyl ether	20.0	18.61		ug/L		93	60 - 131	4	20
di-Isopropyl ether	20.0	21.80		ug/L		109	67 - 125	2	20
tert-Butanol	200	231.8		ug/L		116	50 - 169	1	20
1,4-Dioxane	200	191.4		ug/L		96	28 - 150	5	20
trans-1,4-Dichloro-2-butene	20.0	24.99		ug/L		125	48 - 153	2	20
Ethanol	400	529.1		ug/L		132	47 - 170	5	20

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

Lab Sample ID: LCSD 620-42972/5
Matrix: Water
Analysis Batch: 42972

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*115*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 42972

Client Sample ID: MW-106
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		20.3	21.12		ug/L		104	70 - 130
Acetone	ND	F1	20.3	14.04	F1	ug/L		62	70 - 130
Acrylonitrile	ND		20.3	24.75		ug/L		122	70 - 130
Benzene	ND		20.3	21.59		ug/L		106	70 - 130
Bromobenzene	ND		20.3	18.42		ug/L		91	70 - 130
Bromochloromethane	ND		20.3	19.90		ug/L		98	70 - 130
Bromodichloromethane	ND		20.3	20.20		ug/L		99	70 - 130
Bromoform	ND	*-	20.3	16.85		ug/L		83	70 - 130
Bromomethane	ND	F1	20.3	26.36		ug/L		130	70 - 130
2-Butanone (MEK)	ND	F1	20.3	11.52	F1	ug/L		57	70 - 130
n-Butylbenzene	ND		20.3	22.66		ug/L		111	70 - 130
sec-Butylbenzene	ND		20.3	21.81		ug/L		107	70 - 130
tert-Butylbenzene	ND		20.3	20.17		ug/L		99	70 - 130
Carbon disulfide	ND		20.3	22.43		ug/L		110	70 - 130
Carbon tetrachloride	ND		20.3	20.63		ug/L		101	70 - 130
Chlorobenzene	ND		20.3	21.02		ug/L		103	70 - 130
Chloroethane	ND		20.3	25.86		ug/L		127	70 - 130
Chloroform	ND		20.3	22.67		ug/L		111	70 - 130
Chloromethane	ND	*+ F1	20.3	35.19	F1	ug/L		173	70 - 130
2-Chlorotoluene	ND		20.3	20.50		ug/L		101	70 - 130
4-Chlorotoluene	ND		20.3	20.84		ug/L		102	70 - 130
1,2-Dibromo-3-Chloropropane	ND		20.3	20.83		ug/L		102	70 - 130
Dibromochloromethane	ND		20.3	18.64		ug/L		92	70 - 130
1,2-Dibromoethane (EDB)	ND		20.3	20.62		ug/L		101	70 - 130
Dibromomethane	ND		20.3	22.05		ug/L		108	70 - 130
1,2-Dichlorobenzene	ND		20.3	20.32		ug/L		100	70 - 130
1,3-Dichlorobenzene	ND		20.3	19.83		ug/L		97	70 - 130
1,4-Dichlorobenzene	ND		20.3	20.00		ug/L		98	70 - 130
Dichlorodifluoromethane (Freon 12)	ND	F1	20.3	28.31	F1	ug/L		139	70 - 130
1,1-Dichloroethane	ND		20.3	24.61		ug/L		121	70 - 130
1,2-Dichloroethane	ND		20.3	23.32		ug/L		115	70 - 130
1,1-Dichloroethene	ND		20.3	22.08		ug/L		108	70 - 130
cis-1,2-Dichloroethene	ND		20.3	22.06		ug/L		108	70 - 130
trans-1,2-Dichloroethene	ND		20.3	21.56		ug/L		106	70 - 130
1,2-Dichloropropane	ND		20.3	22.96		ug/L		113	70 - 130
1,3-Dichloropropane	ND		20.3	21.42		ug/L		105	70 - 130
2,2-Dichloropropane	ND		20.3	17.43		ug/L		86	70 - 130

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

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 42972

Client Sample ID: MW-106
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloropropene	ND		20.3	20.22		ug/L		99	70 - 130
cis-1,3-Dichloropropene	ND		20.3	19.17		ug/L		94	70 - 130
trans-1,3-Dichloropropene	ND		20.3	19.96		ug/L		98	70 - 130
Ethylbenzene	ND		20.3	21.31		ug/L		105	70 - 130
Hexachlorobutadiene	ND		20.3	16.75		ug/L		82	70 - 130
2-Hexanone (MBK)	ND		20.3	16.50		ug/L		81	70 - 130
Isopropylbenzene	ND		20.3	21.03		ug/L		103	70 - 130
4-Isopropyltoluene	ND		20.3	21.04		ug/L		103	70 - 130
Methyl tert-butyl ether	ND		20.3	19.40		ug/L		95	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		20.3	22.19		ug/L		109	70 - 130
Methylene Chloride	ND		20.3	21.69		ug/L		107	70 - 130
Naphthalene	ND		20.3	16.95		ug/L		83	70 - 130
N-Propylbenzene	ND		20.3	23.26		ug/L		114	70 - 130
Styrene	ND		20.3	19.79		ug/L		97	70 - 130
1,1,1,2-Tetrachloroethane	ND	*-	20.3	19.44		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	ND		20.3	21.11		ug/L		104	70 - 130
Tetrachloroethene	ND		20.3	17.83		ug/L		88	70 - 130
Toluene	ND		20.3	20.68		ug/L		102	70 - 130
1,2,3-Trichlorobenzene	ND		20.3	17.43		ug/L		86	70 - 130
1,2,4-Trichlorobenzene	ND		20.3	17.43		ug/L		86	70 - 130
1,3,5-Trichlorobenzene	ND		20.3	17.83		ug/L		88	70 - 130
1,1,1-Trichloroethane	ND		20.3	21.36		ug/L		105	70 - 130
1,1,2-Trichloroethane	ND		20.3	22.26		ug/L		109	70 - 130
Trichloroethene	ND		20.3	21.47		ug/L		106	70 - 130
Trichlorofluoromethane (Freon 11)	ND		20.3	23.18		ug/L		114	70 - 130
1,2,3-Trichloropropane	ND		20.3	21.76		ug/L		107	70 - 130
1,2,4-Trimethylbenzene	ND		20.3	21.04		ug/L		103	70 - 130
1,3,5-Trimethylbenzene	ND		20.3	21.01		ug/L		103	70 - 130
Vinyl chloride	ND	F1	20.3	27.26	F1	ug/L		134	70 - 130
m,p-Xylene	ND		40.7	43.89		ug/L		108	70 - 130
o-Xylene	ND		20.3	21.71		ug/L		107	70 - 130
Tetrahydrofuran	ND		20.3	24.60		ug/L		121	70 - 130
Ethyl ether	ND		20.3	21.43		ug/L		105	70 - 130
Tert-amyl methyl ether	ND		20.3	18.04		ug/L		89	70 - 130
Ethyl tert-butyl ether	ND		20.3	19.73		ug/L		97	70 - 130
di-Isopropyl ether	ND		20.3	23.26		ug/L		114	70 - 130
tert-Butanol	ND		203	225.2		ug/L		111	70 - 130
1,4-Dioxane	ND		203	182.2		ug/L		90	70 - 130
trans-1,4-Dichloro-2-butene	ND		20.3	24.95		ug/L		123	70 - 130
Ethanol	ND	F1	407	534.5	F1	ug/L		131	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*117*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*

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

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 42972

Client Sample ID: MW-106
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichlorotrifluoroethane (Freon 113)	ND		20.3	20.76		ug/L		102	70 - 130	2	20
Acetone	ND	F1	20.3	13.94	F1	ug/L		62	70 - 130	1	20
Acrylonitrile	ND		20.3	23.48		ug/L		115	70 - 130	5	20
Benzene	ND		20.3	20.97		ug/L		103	70 - 130	3	20
Bromobenzene	ND		20.3	17.84		ug/L		88	70 - 130	3	20
Bromochloromethane	ND		20.3	19.36		ug/L		95	70 - 130	3	20
Bromodichloromethane	ND		20.3	19.18		ug/L		94	70 - 130	5	20
Bromoform	ND	*-	20.3	16.15		ug/L		79	70 - 130	4	20
Bromomethane	ND	F1	20.3	26.96	F1	ug/L		132	70 - 130	2	20
2-Butanone (MEK)	ND	F1	20.3	13.26	F1	ug/L		65	70 - 130	14	20
n-Butylbenzene	ND		20.3	22.21		ug/L		109	70 - 130	2	20
sec-Butylbenzene	ND		20.3	20.89		ug/L		103	70 - 130	4	20
tert-Butylbenzene	ND		20.3	19.50		ug/L		96	70 - 130	3	20
Carbon disulfide	ND		20.3	21.48		ug/L		106	70 - 130	4	20
Carbon tetrachloride	ND		20.3	20.12		ug/L		99	70 - 130	2	20
Chlorobenzene	ND		20.3	20.22		ug/L		99	70 - 130	4	20
Chloroethane	ND		20.3	25.45		ug/L		125	70 - 130	2	20
Chloroform	ND		20.3	21.55		ug/L		106	70 - 130	5	20
Chloromethane	ND	*+ F1	20.3	33.87	F1	ug/L		166	70 - 130	4	20
2-Chlorotoluene	ND		20.3	19.57		ug/L		96	70 - 130	5	20
4-Chlorotoluene	ND		20.3	20.14		ug/L		99	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	ND		20.3	19.79		ug/L		97	70 - 130	5	20
Dibromochloromethane	ND		20.3	17.85		ug/L		88	70 - 130	4	20
1,2-Dibromoethane (EDB)	ND		20.3	20.00		ug/L		98	70 - 130	3	20
Dibromomethane	ND		20.3	21.43		ug/L		105	70 - 130	3	20
1,2-Dichlorobenzene	ND		20.3	19.75		ug/L		97	70 - 130	3	20
1,3-Dichlorobenzene	ND		20.3	19.04		ug/L		94	70 - 130	4	20
1,4-Dichlorobenzene	ND		20.3	19.44		ug/L		96	70 - 130	3	20
Dichlorodifluoromethane (Freon 12)	ND	F1	20.3	26.63	F1	ug/L		131	70 - 130	6	20
1,1-Dichloroethane	ND		20.3	23.92		ug/L		118	70 - 130	3	20
1,2-Dichloroethane	ND		20.3	22.28		ug/L		110	70 - 130	5	20
1,1-Dichloroethene	ND		20.3	21.43		ug/L		105	70 - 130	3	20
cis-1,2-Dichloroethene	ND		20.3	21.41		ug/L		105	70 - 130	3	20
trans-1,2-Dichloroethene	ND		20.3	21.03		ug/L		103	70 - 130	2	20
1,2-Dichloropropane	ND		20.3	22.75		ug/L		112	70 - 130	1	20
1,3-Dichloropropane	ND		20.3	20.58		ug/L		101	70 - 130	4	20
2,2-Dichloropropane	ND		20.3	17.10		ug/L		84	70 - 130	2	20
1,1-Dichloropropene	ND		20.3	19.96		ug/L		98	70 - 130	1	20
cis-1,3-Dichloropropene	ND		20.3	18.80		ug/L		92	70 - 130	2	20
trans-1,3-Dichloropropene	ND		20.3	19.26		ug/L		95	70 - 130	4	20
Ethylbenzene	ND		20.3	20.78		ug/L		102	70 - 130	3	20
Hexachlorobutadiene	ND		20.3	16.52		ug/L		81	70 - 130	1	20
2-Hexanone (MBK)	ND		20.3	16.09		ug/L		79	70 - 130	3	20
Isopropylbenzene	ND		20.3	20.57		ug/L		101	70 - 130	2	20
4-Isopropyltoluene	ND		20.3	20.65		ug/L		101	70 - 130	2	20
Methyl tert-butyl ether	ND		20.3	18.98		ug/L		93	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)	ND		20.3	21.03		ug/L		103	70 - 130	5	20

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

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 42972

Client Sample ID: MW-106
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methylene Chloride	ND		20.3	20.92		ug/L		103	70 - 130	4	20
Naphthalene	ND		20.3	17.49		ug/L		86	70 - 130	3	20
N-Propylbenzene	ND		20.3	22.28		ug/L		109	70 - 130	4	20
Styrene	ND		20.3	19.35		ug/L		95	70 - 130	2	20
1,1,1,2-Tetrachloroethane	ND	*-	20.3	18.76		ug/L		92	70 - 130	4	20
1,1,2,2-Tetrachloroethane	ND		20.3	20.15		ug/L		99	70 - 130	5	20
Tetrachloroethene	ND		20.3	17.62		ug/L		87	70 - 130	1	20
Toluene	ND		20.3	20.15		ug/L		99	70 - 130	3	20
1,2,3-Trichlorobenzene	ND		20.3	17.05		ug/L		84	70 - 130	2	20
1,2,4-Trichlorobenzene	ND		20.3	16.93		ug/L		83	70 - 130	3	20
1,3,5-Trichlorobenzene	ND		20.3	17.93		ug/L		88	70 - 130	1	20
1,1,1-Trichloroethane	ND		20.3	20.85		ug/L		102	70 - 130	2	20
1,1,2-Trichloroethane	ND		20.3	21.22		ug/L		104	70 - 130	5	20
Trichloroethene	ND		20.3	20.22		ug/L		99	70 - 130	6	20
Trichlorofluoromethane (Freon 11)	ND		20.3	22.49		ug/L		111	70 - 130	3	20
1,2,3-Trichloropropane	ND		20.3	20.94		ug/L		103	70 - 130	4	20
1,2,4-Trimethylbenzene	ND		20.3	20.10		ug/L		99	70 - 130	5	20
1,3,5-Trimethylbenzene	ND		20.3	20.27		ug/L		100	70 - 130	4	20
Vinyl chloride	ND	F1	20.3	25.73		ug/L		126	70 - 130	6	20
m,p-Xylene	ND		40.7	42.43		ug/L		104	70 - 130	3	20
o-Xylene	ND		20.3	21.10		ug/L		104	70 - 130	3	20
Tetrahydrofuran	ND		20.3	23.35		ug/L		115	70 - 130	5	20
Ethyl ether	ND		20.3	20.87		ug/L		103	70 - 130	3	20
Tert-amyl methyl ether	ND		20.3	17.68		ug/L		87	70 - 130	2	20
Ethyl tert-butyl ether	ND		20.3	19.15		ug/L		94	70 - 130	3	20
di-Isopropyl ether	ND		20.3	22.79		ug/L		112	70 - 130	2	20
tert-Butanol	ND		203	208.0		ug/L		102	70 - 130	8	20
1,4-Dioxane	ND		203	176.8		ug/L		87	70 - 130	3	20
trans-1,4-Dichloro-2-butene	ND		20.3	23.63		ug/L		116	70 - 130	5	20
Ethanol	ND	F1	407	488.2		ug/L		120	70 - 130	9	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*116*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*

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

Lab Sample ID: MB 620-42978/1-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42978

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
1,2,4-Trichlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
1,2-Dichlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
1,3-Dichlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: MB 620-42978/1-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42978

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
1-Methylnaphthalene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4,5-Trichlorophenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4,6-Trichlorophenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4-Dichlorophenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4-Dimethylphenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4-Dinitrophenol	ND		20.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,4-Dinitrotoluene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2,6-Dinitrotoluene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Chloronaphthalene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Chlorophenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Methylnaphthalene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Methylphenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Nitroaniline	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
2-Nitrophenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
3 & 4 Methylphenol	ND		10.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
3,3'-Dichlorobenzidine	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
3-Nitroaniline	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4,6-Dinitro-2-methylphenol	ND		10.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Bromophenyl phenyl ether	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Chloro-3-methylphenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Chloroaniline	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Chlorophenyl phenyl ether	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Nitroaniline	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
4-Nitrophenol	ND		20.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
Acenaphthene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Acenaphthylene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Aniline	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Anthracene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Azobenzene/Diphenyldiazene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzidine	ND		20.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzo[a]anthracene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzo[a]pyrene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzo[b]fluoranthene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzo[g,h,i]perylene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzo[k]fluoranthene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzoic acid	23.42		10.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
Benzyl alcohol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Bis(2-chloroethoxy)methane	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Bis(2-chloroethyl)ether	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
bis (2-chloroisopropyl) ether	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Bis(2-ethylhexyl) phthalate	ND		10.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
Butyl benzyl phthalate	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Carbazole	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Chrysene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Dibenz(a,h)anthracene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Dibenzofuran	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Diethyl phthalate	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Dimethyl phthalate	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1

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

Lab Sample ID: MB 620-42978/1-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42978

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Di-n-octyl phthalate	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Fluoranthene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Fluorene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Hexachlorobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Hexachlorobutadiene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Hexachlorocyclopentadiene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Hexachloroethane	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Indeno[1,2,3-cd]pyrene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Isophorone	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Naphthalene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Nitrobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
N-Nitrosodimethylamine	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
N-Nitrosodi-n-propylamine	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
N-Nitrosodiphenylamine	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Pentachloronitrobenzene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Pentachlorophenol	ND		10.0		ug/L		01/02/25 09:20	01/02/25 14:53	1
Phenanthrene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Phenol	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Pyrene	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1
Pyridine	ND		5.00		ug/L		01/02/25 09:20	01/02/25 14:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*46*		*30 - 130*	*01/02/25 09:20*	*01/02/25 14:53*	*1*
2-Fluorophenol (Surr)	*33*		*15 - 110*	*01/02/25 09:20*	*01/02/25 14:53*	*1*
Nitrobenzene-d5 (Surr)	*50*		*30 - 130*	*01/02/25 09:20*	*01/02/25 14:53*	*1*
Phenol-d5 (Surr)	*20*		*15 - 110*	*01/02/25 09:20*	*01/02/25 14:53*	*1*
2,4,6-Tribromophenol (Surr)	*49*		*15 - 110*	*01/02/25 09:20*	*01/02/25 14:53*	*1*
Terphenyl-d14 (Surr)	*57*		*30 - 130*	*01/02/25 09:20*	*01/02/25 14:53*	*1*

Lab Sample ID: LCS 620-42978/2-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	40.0	16.35		ug/L		41	26 - 92
1,2,4-Trichlorobenzene	40.0	13.89		ug/L		35	28 - 86
1,2-Dichlorobenzene	40.0	13.13		ug/L		33	30 - 81
1,3-Dichlorobenzene	40.0	13.10		ug/L		33	33 - 79
1,4-Dichlorobenzene	40.0	13.06		ug/L		33	30 - 82
1-Methylnaphthalene	40.0	17.17		ug/L		43	33 - 83
2,4,5-Trichlorophenol	40.0	23.72		ug/L		59	36 - 90
2,4,6-Trichlorophenol	40.0	22.81		ug/L		57	37 - 85
2,4-Dichlorophenol	40.0	19.85		ug/L		50	29 - 85
2,4-Dimethylphenol	40.0	20.42		ug/L		51	26 - 81
2,4-Dinitrophenol	40.0	63.19	*+	ug/L		158	5 - 140
2,4-Dinitrotoluene	40.0	24.53		ug/L		61	56 - 108
2,6-Dinitrotoluene	40.0	21.39		ug/L		53	37 - 100

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

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

Lab Sample ID: LCS 620-42978/2-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Chloronaphthalene	40.0	18.20		ug/L		46	32 - 90
2-Chlorophenol	40.0	20.10		ug/L		50	30 - 78
2-Methylnaphthalene	40.0	15.99		ug/L		40	32 - 88
2-Methylphenol	40.0	17.99		ug/L		45	29 - 74
2-Nitroaniline	40.0	22.54		ug/L		56	34 - 108
2-Nitrophenol	40.0	20.06		ug/L		50	25 - 96
3 & 4 Methylphenol	40.0	16.20		ug/L		40	31 - 63
3,3'-Dichlorobenzidine	40.0	24.95	*-	ug/L		62	86 - 171
3-Nitroaniline	40.0	20.10		ug/L		50	16 - 146
4,6-Dinitro-2-methylphenol	40.0	52.78	*+	ug/L		132	43 - 104
4-Bromophenyl phenyl ether	40.0	19.84		ug/L		50	46 - 101
4-Chloro-3-methylphenol	40.0	21.51		ug/L		54	32 - 96
4-Chloroaniline	40.0	14.99		ug/L		37	21 - 101
4-Chlorophenyl phenyl ether	40.0	19.37		ug/L		48	41 - 94
4-Nitroaniline	40.0	24.91		ug/L		62	45 - 157
4-Nitrophenol	40.0	11.41	J	ug/L		29	7 - 79
Acenaphthene	40.0	17.28		ug/L		43	34 - 87
Acenaphthylene	40.0	17.30		ug/L		43	34 - 86
Aniline	40.0	11.52		ug/L		29	17 - 86
Anthracene	40.0	26.24		ug/L		66	54 - 102
Azobenzene/Diphenyldiazene	40.0	20.78		ug/L		52	36 - 100
Benzidine	40.0	ND		ug/L		5	5 - 143
Benzo[a]anthracene	40.0	25.71	*-	ug/L		64	65 - 110
Benzo[a]pyrene	40.0	25.54		ug/L		64	60 - 103
Benzo[b]fluoranthene	40.0	26.88		ug/L		67	56 - 121
Benzo[g,h,i]perylene	40.0	27.05		ug/L		68	57 - 114
Benzo[k]fluoranthene	40.0	25.88		ug/L		65	40 - 111
Benzoic acid	40.0	40.87	*+	ug/L		102	5 - 79
Benzyl alcohol	40.0	16.52		ug/L		41	24 - 74
Bis(2-chloroethoxy)methane	40.0	18.75		ug/L		47	20 - 103
Bis(2-chloroethyl)ether	40.0	18.79		ug/L		47	26 - 81
bis (2-chloroisopropyl) ether	40.0	11.35	*-	ug/L		28	32 - 80
Bis(2-ethylhexyl) phthalate	40.0	26.92		ug/L		67	48 - 114
Butyl benzyl phthalate	40.0	24.31		ug/L		61	55 - 120
Carbazole	40.0	24.77		ug/L		62	43 - 151
Chrysene	40.0	26.14		ug/L		65	63 - 105
Dibenz(a,h)anthracene	40.0	24.70		ug/L		62	56 - 109
Dibenzofuran	40.0	19.23		ug/L		48	35 - 92
Diethyl phthalate	40.0	23.51		ug/L		59	50 - 101
Dimethyl phthalate	40.0	22.75		ug/L		57	38 - 94
Di-n-butyl phthalate	40.0	26.43		ug/L		66	58 - 105
Di-n-octyl phthalate	40.0	25.53		ug/L		64	55 - 105
Fluoranthene	40.0	23.65		ug/L		59	59 - 110
Fluorene	40.0	20.92		ug/L		52	39 - 90
Hexachlorobenzene	40.0	20.35		ug/L		51	49 - 94
Hexachlorobutadiene	40.0	12.01		ug/L		30	25 - 75
Hexachlorocyclopentadiene	40.0	16.96		ug/L		42	15 - 68
Hexachloroethane	40.0	12.81		ug/L		32	29 - 80
Indeno[1,2,3-cd]pyrene	40.0	24.76		ug/L		62	54 - 107

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

Lab Sample ID: LCS 620-42978/2-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42978

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Isophorone			40.0	17.27		ug/L		43	25 - 81		
Naphthalene			40.0	14.81		ug/L		37	29 - 84		
Nitrobenzene			40.0	19.46		ug/L		49	25 - 96		
N-Nitrosodimethylamine			40.0	16.89		ug/L		42	21 - 54		
N-Nitrosodi-n-propylamine			40.0	19.26		ug/L		48	35 - 87		
N-Nitrosodiphenylamine			40.0	18.96		ug/L		47	39 - 109		
Pentachloronitrobenzene			40.0	24.18		ug/L		60	49 - 112		
Pentachlorophenol			40.0	28.54		ug/L		71	5 - 151		
Phenanthrene			40.0	24.06		ug/L		60	52 - 99		
Phenol			40.0	8.284		ug/L		21	15 - 40		
Pyrene			40.0	25.88		ug/L		65	63 - 105		
Pyridine			40.0	9.733		ug/L		24	19 - 55		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*54*		*30 - 130*
2-Fluorophenol (Surr)	*35*		*15 - 110*
Nitrobenzene-d5 (Surr)	*49*		*30 - 130*
Phenol-d5 (Surr)	*22*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*57*		*15 - 110*
Terphenyl-d14 (Surr)	*62*		*30 - 130*

Lab Sample ID: LCSD 620-42978/3-A
Matrix: Water
Analysis Batch: 42996

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42978

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene			40.0	16.55		ug/L		41	26 - 92	1	20
1,2,4-Trichlorobenzene			40.0	14.38		ug/L		36	28 - 86	3	20
1,2-Dichlorobenzene			40.0	14.06		ug/L		35	30 - 81	7	20
1,3-Dichlorobenzene			40.0	13.10		ug/L		33	33 - 79	0	20
1,4-Dichlorobenzene			40.0	13.22		ug/L		33	30 - 82	1	20
1-Methylnaphthalene			40.0	17.20		ug/L		43	33 - 83	0	20
2,4,5-Trichlorophenol			40.0	24.01		ug/L		60	36 - 90	1	20
2,4,6-Trichlorophenol			40.0	24.51		ug/L		61	37 - 85	7	20
2,4-Dichlorophenol			40.0	20.24		ug/L		51	29 - 85	2	20
2,4-Dimethylphenol			40.0	20.69		ug/L		52	26 - 81	1	20
2,4-Dinitrophenol			40.0	68.03	*+	ug/L		170	5 - 140	7	20
2,4-Dinitrotoluene			40.0	24.56		ug/L		61	56 - 108	0	20
2,6-Dinitrotoluene			40.0	22.63		ug/L		57	37 - 100	6	20
2-Chloronaphthalene			40.0	18.06		ug/L		45	32 - 90	1	20
2-Chlorophenol			40.0	21.67		ug/L		54	30 - 78	8	20
2-Methylnaphthalene			40.0	15.95		ug/L		40	32 - 88	0	20
2-Methylphenol			40.0	18.99		ug/L		47	29 - 74	5	20
2-Nitroaniline			40.0	23.06		ug/L		58	34 - 108	2	20
2-Nitrophenol			40.0	21.05		ug/L		53	25 - 96	5	20
3 & 4 Methylphenol			40.0	17.08		ug/L		43	31 - 63	5	20
3,3'-Dichlorobenzidine			40.0	27.47	*-	ug/L		69	86 - 171	10	20
3-Nitroaniline			40.0	22.13		ug/L		55	16 - 146	10	20

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

Lab Sample ID: LCSD 620-42978/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 42996
Prep Batch: 42978

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,6-Dinitro-2-methylphenol	40.0	53.87	*+	ug/L		135	43 - 104	2	20
4-Bromophenyl phenyl ether	40.0	20.69		ug/L		52	46 - 101	4	20
4-Chloro-3-methylphenol	40.0	21.68		ug/L		54	32 - 96	1	20
4-Chloroaniline	40.0	15.39		ug/L		38	21 - 101	3	20
4-Chlorophenyl phenyl ether	40.0	20.26		ug/L		51	41 - 94	5	20
4-Nitroaniline	40.0	25.07		ug/L		63	45 - 157	1	20
4-Nitrophenol	40.0	12.06	J	ug/L		30	7 - 79	6	20
Acenaphthene	40.0	18.46		ug/L		46	34 - 87	7	20
Acenaphthylene	40.0	17.89		ug/L		45	34 - 86	3	20
Aniline	40.0	12.06		ug/L		30	17 - 86	5	20
Anthracene	40.0	26.87		ug/L		67	54 - 102	2	20
Azobenzene/Diphenyldiazene	40.0	22.23		ug/L		56	36 - 100	7	20
Benzidine	40.0	2.051	J	ug/L		5	5 - 143	11	20
Benzo[a]anthracene	40.0	27.73		ug/L		69	65 - 110	8	20
Benzo[a]pyrene	40.0	29.40		ug/L		74	60 - 103	14	20
Benzo[b]fluoranthene	40.0	28.60		ug/L		72	56 - 121	6	20
Benzo[g,h,i]perylene	40.0	28.87		ug/L		72	57 - 114	7	20
Benzo[k]fluoranthene	40.0	26.35		ug/L		66	40 - 111	2	20
Benzoic acid	40.0	43.59	*+	ug/L		109	5 - 79	6	20
Benzyl alcohol	40.0	17.94		ug/L		45	24 - 74	8	20
Bis(2-chloroethoxy)methane	40.0	19.51		ug/L		49	20 - 103	4	20
Bis(2-chloroethyl)ether	40.0	19.93		ug/L		50	26 - 81	6	20
bis (2-chloroisopropyl) ether	40.0	12.10	*-	ug/L		30	32 - 80	6	20
Bis(2-ethylhexyl) phthalate	40.0	29.37		ug/L		73	48 - 114	9	20
Butyl benzyl phthalate	40.0	25.83		ug/L		65	55 - 120	6	20
Carbazole	40.0	26.11		ug/L		65	43 - 151	5	20
Chrysene	40.0	27.90		ug/L		70	63 - 105	7	20
Dibenz(a,h)anthracene	40.0	26.19		ug/L		65	56 - 109	6	20
Dibenzofuran	40.0	19.85		ug/L		50	35 - 92	3	20
Diethyl phthalate	40.0	23.51		ug/L		59	50 - 101	0	20
Dimethyl phthalate	40.0	21.81		ug/L		55	38 - 94	4	20
Di-n-butyl phthalate	40.0	29.37		ug/L		73	58 - 105	11	20
Di-n-octyl phthalate	40.0	27.31		ug/L		68	55 - 105	7	20
Fluoranthene	40.0	23.68		ug/L		59	59 - 110	0	20
Fluorene	40.0	21.32		ug/L		53	39 - 90	2	20
Hexachlorobenzene	40.0	21.38		ug/L		53	49 - 94	5	20
Hexachlorobutadiene	40.0	13.46		ug/L		34	25 - 75	11	20
Hexachlorocyclopentadiene	40.0	18.28		ug/L		46	15 - 68	7	20
Hexachloroethane	40.0	13.11		ug/L		33	29 - 80	2	20
Indeno[1,2,3-cd]pyrene	40.0	25.21		ug/L		63	54 - 107	2	20
Isophorone	40.0	17.47		ug/L		44	25 - 81	1	20
Naphthalene	40.0	15.82		ug/L		40	29 - 84	7	20
Nitrobenzene	40.0	20.19		ug/L		50	25 - 96	4	20
N-Nitrosodimethylamine	40.0	16.90		ug/L		42	21 - 54	0	20
N-Nitrosodi-n-propylamine	40.0	19.91		ug/L		50	35 - 87	3	20
N-Nitrosodiphenylamine	40.0	18.64		ug/L		47	39 - 109	2	20
Pentachloronitrobenzene	40.0	25.28		ug/L		63	49 - 112	4	20
Pentachlorophenol	40.0	29.42		ug/L		74	5 - 151	3	20
Phenanthrene	40.0	24.56		ug/L		61	52 - 99	2	20

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

Lab Sample ID: LCSD 620-42978/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 42996
Prep Batch: 42978

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenol			40.0	8.549		ug/L		21	15 - 40	3	20
Pyrene			40.0	25.74		ug/L		64	63 - 105	1	20
Pyridine			40.0	11.50		ug/L		29	19 - 55	17	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*59*		*30 - 130*
2-Fluorophenol (Surr)	*38*		*15 - 110*
Nitrobenzene-d5 (Surr)	*53*		*30 - 130*
Phenol-d5 (Surr)	*23*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*60*		*15 - 110*
Terphenyl-d14 (Surr)	*65*		*30 - 130*

Lab Sample ID: 620-23112-6 MS
Client Sample ID: MW-106
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 43022
Prep Batch: 42978

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4,5-Tetrachlorobenzene	ND	F1	37.0	13.59	F1	ug/L		37	40 - 140
1,2,4-Trichlorobenzene	ND	F2 F1	37.0	11.40	F1	ug/L		31	40 - 140
1,2-Dichlorobenzene	ND	F2 F1	37.0	11.19	F1	ug/L		30	40 - 140
1,3-Dichlorobenzene	ND	F2 F1	37.0	10.92	F1	ug/L		29	40 - 140
1,4-Dichlorobenzene	ND	F2 F1	37.0	10.89	F1	ug/L		29	40 - 140
1-Methylnaphthalene	ND		37.0	14.77		ug/L		40	40 - 140
2,4,5-Trichlorophenol	ND		37.0	20.22		ug/L		55	30 - 130
2,4,6-Trichlorophenol	ND		37.0	18.97		ug/L		51	30 - 130
2,4-Dichlorophenol	ND		37.0	16.88		ug/L		46	30 - 130
2,4-Dimethylphenol	ND		37.0	16.61		ug/L		45	30 - 130
2,4-Dinitrophenol	ND	*+ F1	37.0	69.66	F1	ug/L		188	30 - 130
2,4-Dinitrotoluene	ND		37.0	22.08		ug/L		60	40 - 140
2,6-Dinitrotoluene	ND		37.0	19.02		ug/L		51	40 - 140
2-Chloronaphthalene	ND		37.0	15.41		ug/L		42	40 - 140
2-Chlorophenol	ND	F2	37.0	17.22		ug/L		46	30 - 130
2-Methylnaphthalene	ND	F1	37.0	13.61	F1	ug/L		37	40 - 140
2-Methylphenol	ND	F2	37.0	14.21		ug/L		38	30 - 130
2-Nitroaniline	ND	F2	37.0	19.46		ug/L		53	40 - 140
2-Nitrophenol	ND		37.0	17.02		ug/L		46	30 - 130
3 & 4 Methylphenol	ND		37.0	12.91		ug/L		35	30 - 130
3,3'-Dichlorobenzidine	ND	*-	37.0	21.37		ug/L		58	40 - 140
3-Nitroaniline	ND		37.0	15.12		ug/L		41	40 - 140
4,6-Dinitro-2-methylphenol	ND	*+ F1	37.0	54.04	F1	ug/L		146	30 - 130
4-Bromophenyl phenyl ether	ND		37.0	17.51		ug/L		47	40 - 140
4-Chloro-3-methylphenol	ND		37.0	17.78		ug/L		48	30 - 130
4-Chloroaniline	ND	F1	37.0	8.841	F1	ug/L		24	40 - 140
4-Chlorophenyl phenyl ether	ND	F2	37.0	15.10		ug/L		41	40 - 140
4-Nitroaniline	ND		37.0	21.96		ug/L		59	40 - 140
4-Nitrophenol	ND		37.0	ND		ug/L		31	30 - 130
Acenaphthene	ND		37.0	15.19		ug/L		41	40 - 140
Acenaphthylene	ND		37.0	15.60		ug/L		42	40 - 140

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

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 43022

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42978

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aniline	ND	F2 F1	37.0	ND	F1	ug/L		12	40 - 140
Anthracene	ND		37.0	23.12		ug/L		62	40 - 140
Azobenzene/Diphenyldiazene	ND		37.0	19.08		ug/L		52	40 - 140
Benzidine	ND	F1	37.0	ND	F1	ug/L		0	40 - 140
Benzo[a]anthracene	ND	*-	37.0	26.22		ug/L		71	40 - 140
Benzo[a]pyrene	ND		37.0	25.66		ug/L		69	40 - 140
Benzo[b]fluoranthene	ND		37.0	26.64		ug/L		72	40 - 140
Benzo[g,h,i]perylene	ND		37.0	26.22		ug/L		71	40 - 140
Benzo[k]fluoranthene	ND		37.0	23.36		ug/L		63	40 - 140
Benzoic acid	ND	*+	37.0	39.28		ug/L		106	30 - 130
Benzyl alcohol	ND	F1	37.0	12.79	F1	ug/L		35	40 - 140
Bis(2-chloroethoxy)methane	ND		37.0	16.42		ug/L		44	40 - 140
Bis(2-chloroethyl)ether	ND	F2	37.0	16.80		ug/L		45	40 - 140
bis (2-chloroisopropyl) ether	ND	F2 *- F1	37.0	11.03	F1	ug/L		30	40 - 140
Bis(2-ethylhexyl) phthalate	ND		37.0	24.20		ug/L		65	40 - 140
Butyl benzyl phthalate	ND		37.0	26.39		ug/L		71	40 - 140
Carbazole	ND		37.0	24.43		ug/L		66	40 - 140
Chrysene	ND		37.0	26.58		ug/L		72	40 - 140
Dibenz(a,h)anthracene	ND		37.0	23.39		ug/L		63	40 - 140
Dibenzofuran	ND		37.0	17.12		ug/L		46	40 - 140
Diethyl phthalate	ND		37.0	20.23		ug/L		55	40 - 140
Dimethyl phthalate	ND		37.0	18.87		ug/L		51	40 - 140
Di-n-butyl phthalate	ND	F2	37.0	29.97		ug/L		69	40 - 140
Di-n-octyl phthalate	ND		37.0	22.30		ug/L		56	40 - 140
Fluoranthene	ND		37.0	23.57		ug/L		64	40 - 140
Fluorene	ND	F2	37.0	16.72		ug/L		45	40 - 140
Hexachlorobenzene	ND		37.0	16.37		ug/L		44	40 - 140
Hexachlorobutadiene	ND	F1	37.0	10.63	F1	ug/L		29	40 - 140
Hexachlorocyclopentadiene	ND		37.0	15.65		ug/L		42	40 - 140
Hexachloroethane	ND	F2 F1	37.0	10.57	F1	ug/L		29	40 - 140
Indeno[1,2,3-cd]pyrene	ND		37.0	22.88		ug/L		62	40 - 140
Isophorone	ND		37.0	14.91		ug/L		40	40 - 140
Naphthalene	ND	F2 F1	37.0	13.37	F1	ug/L		36	40 - 140
Nitrobenzene	ND		37.0	17.20		ug/L		46	40 - 140
N-Nitrosodimethylamine	ND	F1	37.0	12.45	F1	ug/L		34	40 - 140
N-Nitrosodi-n-propylamine	ND		37.0	17.31		ug/L		47	40 - 140
N-Nitrosodiphenylamine	ND		37.0	16.82		ug/L		45	40 - 140
Pentachloronitrobenzene	ND		37.0	21.58		ug/L		58	40 - 140
Pentachlorophenol	ND		37.0	28.83		ug/L		78	30 - 130
Phenanthrene	ND		37.0	20.88		ug/L		56	40 - 140
Phenol	ND	F1	37.0	6.786	F1	ug/L		18	30 - 130
Pyrene	ND		37.0	25.53		ug/L		69	40 - 140
Pyridine	ND	F2 F1	37.0	ND	F1	ug/L		5	40 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*53*		*30 - 130*
2-Fluorophenol (Surr)	*32*		*15 - 110*
Nitrobenzene-d5 (Surr)	*50*		*30 - 130*

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

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 43022

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42978

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Phenol-d5 (Surr)	*20*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*60*		*15 - 110*
Terphenyl-d14 (Surr)	*62*		*30 - 130*

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 43022

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42978

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	ND	F1	37.0	15.28		ug/L		41	40 - 140	12	20
1,2,4-Trichlorobenzene	ND	F2 F1	37.0	14.12	F2 F1	ug/L		38	40 - 140	21	20
1,2-Dichlorobenzene	ND	F2 F1	37.0	15.27	F2	ug/L		41	40 - 140	31	20
1,3-Dichlorobenzene	ND	F2 F1	37.0	14.65	F2	ug/L		40	40 - 140	29	20
1,4-Dichlorobenzene	ND	F2 F1	37.0	14.18	F2 F1	ug/L		38	40 - 140	26	20
1-Methylnaphthalene	ND		37.0	17.42		ug/L		47	40 - 140	16	20
2,4,5-Trichlorophenol	ND		37.0	23.69		ug/L		64	30 - 130	16	20
2,4,6-Trichlorophenol	ND		37.0	23.19		ug/L		63	30 - 130	20	20
2,4-Dichlorophenol	ND		37.0	19.49		ug/L		53	30 - 130	14	20
2,4-Dimethylphenol	ND		37.0	18.78		ug/L		51	30 - 130	12	20
2,4-Dinitrophenol	ND	*+ F1	37.0	72.48	F1	ug/L		196	30 - 130	4	20
2,4-Dinitrotoluene	ND		37.0	24.25		ug/L		65	40 - 140	9	20
2,6-Dinitrotoluene	ND		37.0	21.28		ug/L		57	40 - 140	11	20
2-Chloronaphthalene	ND		37.0	18.00		ug/L		49	40 - 140	15	20
2-Chlorophenol	ND	F2	37.0	21.16	F2	ug/L		57	30 - 130	21	20
2-Methylnaphthalene	ND	F1	37.0	16.72		ug/L		45	40 - 140	20	20
2-Methylphenol	ND	F2	37.0	17.62	F2	ug/L		48	30 - 130	21	20
2-Nitroaniline	ND	F2	37.0	24.10	F2	ug/L		65	40 - 140	21	20
2-Nitrophenol	ND		37.0	19.48		ug/L		53	30 - 130	13	20
3 & 4 Methylphenol	ND		37.0	15.74		ug/L		42	30 - 130	20	20
3,3'-Dichlorobenzidine	ND	*-	37.0	22.76		ug/L		61	40 - 140	6	20
3-Nitroaniline	ND		37.0	16.56		ug/L		45	40 - 140	9	20
4,6-Dinitro-2-methylphenol	ND	*+ F1	37.0	54.87	F1	ug/L		148	30 - 130	2	20
4-Bromophenyl phenyl ether	ND		37.0	20.36		ug/L		55	40 - 140	15	20
4-Chloro-3-methylphenol	ND		37.0	20.18		ug/L		54	30 - 130	13	20
4-Chloroaniline	ND	F1	37.0	9.253	F1	ug/L		25	40 - 140	5	20
4-Chlorophenyl phenyl ether	ND	F2	37.0	18.71	F2	ug/L		51	40 - 140	21	20
4-Nitroaniline	ND		37.0	22.49		ug/L		61	40 - 140	2	20
4-Nitrophenol	ND		37.0	ND		ug/L		36	30 - 130	15	20
Acenaphthene	ND		37.0	17.90		ug/L		48	40 - 140	16	20
Acenaphthylene	ND		37.0	18.04		ug/L		49	40 - 140	15	20
Aniline	ND	F2 F1	37.0	ND	F2 F1	ug/L		8	40 - 140	43	20
Anthracene	ND		37.0	26.61		ug/L		72	40 - 140	14	20
Azobenzene/Diphenyldiazene	ND		37.0	22.35		ug/L		60	40 - 140	16	20
Benzidine	ND	F1	37.0	ND	F1	ug/L		0	40 - 140	NC	20
Benzo[a]anthracene	ND	*-	37.0	27.04		ug/L		73	40 - 140	3	20
Benzo[a]pyrene	ND		37.0	25.79		ug/L		70	40 - 140	0	20
Benzo[b]fluoranthene	ND		37.0	28.18		ug/L		76	40 - 140	6	20
Benzo[g,h,i]perylene	ND		37.0	27.79		ug/L		75	40 - 140	6	20

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

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 43022

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42978

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[k]fluoranthene	ND		37.0	25.12		ug/L		68	40 - 140	7	20
Benzoic acid	ND	*+	37.0	44.70		ug/L		121	30 - 130	13	20
Benzyl alcohol	ND	F1	37.0	14.97		ug/L		40	40 - 140	16	20
Bis(2-chloroethoxy)methane	ND		37.0	18.78		ug/L		51	40 - 140	13	20
Bis(2-chloroethyl)ether	ND	F2	37.0	20.80	F2	ug/L		56	40 - 140	21	20
bis (2-chloroisopropyl) ether	ND	F2 *- F1	37.0	14.06	F2 F1	ug/L		38	40 - 140	24	20
Bis(2-ethylhexyl) phthalate	ND		37.0	26.19		ug/L		71	40 - 140	8	20
Butyl benzyl phthalate	ND		37.0	27.38		ug/L		74	40 - 140	4	20
Carbazole	ND		37.0	26.91		ug/L		73	40 - 140	10	20
Chrysene	ND		37.0	27.78		ug/L		75	40 - 140	4	20
Dibenz(a,h)anthracene	ND		37.0	25.81		ug/L		70	40 - 140	10	20
Dibenzofuran	ND		37.0	19.76		ug/L		53	40 - 140	14	20
Diethyl phthalate	ND		37.0	23.38		ug/L		63	40 - 140	14	20
Dimethyl phthalate	ND		37.0	21.65		ug/L		58	40 - 140	14	20
Di-n-butyl phthalate	ND	F2	37.0	36.88	F2	ug/L		88	40 - 140	21	20
Di-n-octyl phthalate	ND		37.0	24.67		ug/L		63	40 - 140	10	20
Fluoranthene	ND		37.0	25.67		ug/L		69	40 - 140	9	20
Fluorene	ND	F2	37.0	20.67	F2	ug/L		56	40 - 140	21	20
Hexachlorobenzene	ND		37.0	19.76		ug/L		53	40 - 140	19	20
Hexachlorobutadiene	ND	F1	37.0	12.77	F1	ug/L		34	40 - 140	18	20
Hexachlorocyclopentadiene	ND		37.0	18.27		ug/L		49	40 - 140	15	20
Hexachloroethane	ND	F2 F1	37.0	14.24	F2 F1	ug/L		38	40 - 140	30	20
Indeno[1,2,3-cd]pyrene	ND		37.0	24.80		ug/L		67	40 - 140	8	20
Isophorone	ND		37.0	16.76		ug/L		45	40 - 140	12	20
Naphthalene	ND	F2 F1	37.0	16.52	F2	ug/L		45	40 - 140	21	20
Nitrobenzene	ND		37.0	19.63		ug/L		53	40 - 140	13	20
N-Nitrosodimethylamine	ND	F1	37.0	14.25	F1	ug/L		38	40 - 140	13	20
N-Nitrosodi-n-propylamine	ND		37.0	20.54		ug/L		55	40 - 140	17	20
N-Nitrosodiphenylamine	ND		37.0	19.03		ug/L		51	40 - 140	12	20
Pentachloronitrobenzene	ND		37.0	24.15		ug/L		65	40 - 140	11	20
Pentachlorophenol	ND		37.0	31.50		ug/L		85	30 - 130	9	20
Phenanthrene	ND		37.0	23.77		ug/L		64	40 - 140	13	20
Phenol	ND	F1	37.0	8.065	F1	ug/L		22	30 - 130	17	20
Pyrene	ND		37.0	27.50		ug/L		74	40 - 140	7	20
Pyridine	ND	F2 F1	37.0	ND	F2 F1	ug/L		4	40 - 140	31	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*60*		*30 - 130*
2-Fluorophenol (Surr)	*39*		*15 - 110*
Nitrobenzene-d5 (Surr)	*56*		*30 - 130*
Phenol-d5 (Surr)	*24*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*63*		*15 - 110*
Terphenyl-d14 (Surr)	*69*		*30 - 130*

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 620-42981/5
Matrix: Water
Analysis Batch: 42981

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	ND		0.100		mg/L			01/02/25 13:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*70 - 130*		*01/02/25 13:06*	*1*

Lab Sample ID: LCS 620-42981/3
Matrix: Water
Analysis Batch: 42981

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10			0.250	0.2076		mg/L		83	77 - 117		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*103*		*70 - 130*

Lab Sample ID: LCSD 620-42981/4
Matrix: Water
Analysis Batch: 42981

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
C6-C10			0.250	0.2066		mg/L		83	77 - 117	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*101*		*70 - 130*

Lab Sample ID: 620-23112-7 MS
Matrix: Water
Analysis Batch: 42981

Client Sample ID: MW-107
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C6-C10	ND		0.244	0.3029		mg/L		118	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*89*		*70 - 130*

Lab Sample ID: 620-23112-7 MSD
Matrix: Water
Analysis Batch: 42981

Client Sample ID: MW-107
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C6-C10	ND		0.244	0.3073		mg/L		119	70 - 130	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*102*		*70 - 130*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 620-42958/1-A
Matrix: Water
Analysis Batch: 42985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42958

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	ND		0.200		mg/L		12/31/24 11:50	01/02/25 12:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*66*		*40 - 140*	*12/31/24 11:50*	*01/02/25 12:06*	*1*
1-Chlorooctadecane	*90*		*40 - 140*	*12/31/24 11:50*	*01/02/25 12:06*	*1*

Lab Sample ID: LCS 620-42958/2-A
Matrix: Water
Analysis Batch: 42985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42958

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			5.03	4.276		mg/L		85	40 - 118		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*89*		*40 - 140*
1-Chlorooctadecane	*97*		*40 - 140*

Lab Sample ID: LCSD 620-42958/3-A
Matrix: Water
Analysis Batch: 42985

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42958

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			5.03	4.515		mg/L		90	40 - 118	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*92*		*40 - 140*
1-Chlorooctadecane	*99*		*40 - 140*

Lab Sample ID: 620-23112-7 MS
Matrix: Water
Analysis Batch: 42985

Client Sample ID: MW-107
Prep Type: Total/NA
Prep Batch: 42958

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28	ND		4.79	4.043		mg/L		84	40 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*86*		*40 - 140*
1-Chlorooctadecane	*92*		*40 - 140*

Lab Sample ID: 620-23112-7 MSD
Matrix: Water
Analysis Batch: 42985

Client Sample ID: MW-107
Prep Type: Total/NA
Prep Batch: 42958

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	ND		4.79	3.723		mg/L		78	40 - 140	8	50

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 620-23112-7 MSD
Matrix: Water
Analysis Batch: 42985

Client Sample ID: MW-107
Prep Type: Total/NA
Prep Batch: 42958

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	79		40 - 140
1-Chlorooctadecane	85		40 - 140

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 620-42924/1-A
Matrix: Water
Analysis Batch: 43016

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42924

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1221	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1232	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1242	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1248	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1254	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1260	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1262	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1
PCB-1268	ND		0.400		ug/L		12/30/24 12:34	01/03/25 14:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	67		30 - 150	12/30/24 12:34	01/03/25 14:04	1
DCB Decachlorobiphenyl (Surr)	76		30 - 150	12/30/24 12:34	01/03/25 14:04	1

Lab Sample ID: LCS 620-42924/2-A
Matrix: Water
Analysis Batch: 43016

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42924

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			4.00	3.361		ug/L		84	40 - 132		
PCB-1260			4.00	2.779		ug/L		69	44 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	76		30 - 150
DCB Decachlorobiphenyl (Surr)	83		30 - 150

Lab Sample ID: LCSD 620-42924/3-A
Matrix: Water
Analysis Batch: 43016

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42924

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			4.00	2.842		ug/L		71	40 - 132	17	20
PCB-1260			4.00	2.634		ug/L		66	44 - 140	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	55		30 - 150
DCB Decachlorobiphenyl (Surr)	75		30 - 150

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 43016

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42924

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	ND		4.00	3.258		ug/L		81	40 - 140
PCB-1260	ND		4.00	3.277		ug/L		82	40 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*68*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*95*		*30 - 150*

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 43016

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42924

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	ND		3.85	3.187		ug/L		83	40 - 140	2	20
PCB-1260	ND		3.85	3.049		ug/L		79	40 - 140	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*75*		*30 - 150*
DCB Decachlorobiphenyl (Surr)	*91*		*30 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 620-42895/1-A
Matrix: Water
Analysis Batch: 42960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42895

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0120		mg/L		12/27/24 17:22	12/30/24 10:48	1
Arsenic	ND		0.00800		mg/L		12/27/24 17:22	12/30/24 10:48	1
Beryllium	ND		0.00400		mg/L		12/27/24 17:22	12/30/24 10:48	1
Cadmium	ND		0.00500		mg/L		12/27/24 17:22	12/30/24 10:48	1
Chromium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1
Copper	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1
Lead	ND		0.0150		mg/L		12/27/24 17:22	12/30/24 10:48	1
Nickel	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1
Selenium	ND		0.0300		mg/L		12/27/24 17:22	12/30/24 10:48	1
Silver	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1
Thallium	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1
Zinc	ND		0.0100		mg/L		12/27/24 17:22	12/30/24 10:48	1

Lab Sample ID: LCS 620-42895/2-A
Matrix: Water
Analysis Batch: 42960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42895

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony			1.50	1.458		mg/L		97	80 - 120
Arsenic			1.50	1.526		mg/L		102	80 - 120
Beryllium			1.50	1.500		mg/L		100	80 - 120
Cadmium			1.50	1.505		mg/L		100	80 - 120

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 620-42895/2-A
Matrix: Water
Analysis Batch: 42960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	1.50	1.473		mg/L		98	80 - 120
Copper	1.50	1.608		mg/L		107	80 - 120
Lead	1.50	1.525		mg/L		102	80 - 120
Nickel	1.50	1.491		mg/L		99	80 - 120
Selenium	1.50	1.545		mg/L		103	80 - 120
Silver	1.50	1.444		mg/L		96	80 - 120
Thallium	1.50	1.501		mg/L		100	80 - 120
Zinc	1.50	1.549		mg/L		103	80 - 120

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 42960

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42895

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		1.50	1.366		mg/L		91	75 - 125
Arsenic	ND		1.50	1.409		mg/L		94	75 - 125
Beryllium	ND		1.50	1.438		mg/L		96	75 - 125
Cadmium	ND		1.50	1.417		mg/L		94	75 - 125
Chromium	0.0132		1.50	1.399		mg/L		92	75 - 125
Copper	0.0214		1.50	1.526		mg/L		100	75 - 125
Lead	ND		1.50	1.435		mg/L		96	75 - 125
Nickel	ND		1.50	1.406		mg/L		93	75 - 125
Selenium	ND		1.50	1.475		mg/L		98	75 - 125
Silver	ND		1.50	1.377		mg/L		92	75 - 125
Thallium	ND		1.50	1.430		mg/L		95	75 - 125
Zinc	0.213		1.50	1.647		mg/L		96	75 - 125

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 42960

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42895

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		1.50	1.257		mg/L		84	75 - 125	8	20
Arsenic	ND		1.50	1.277		mg/L		85	75 - 125	10	20
Beryllium	ND		1.50	1.325		mg/L		88	75 - 125	8	20
Cadmium	ND		1.50	1.305		mg/L		87	75 - 125	8	20
Chromium	0.0132		1.50	1.289		mg/L		85	75 - 125	8	20
Copper	0.0214		1.50	1.434		mg/L		94	75 - 125	6	20
Lead	ND		1.50	1.321		mg/L		88	75 - 125	8	20
Nickel	ND		1.50	1.296		mg/L		86	75 - 125	8	20
Selenium	ND		1.50	1.326		mg/L		88	75 - 125	11	20
Silver	ND		1.50	1.286		mg/L		86	75 - 125	7	20
Thallium	ND		1.50	1.320		mg/L		88	75 - 125	8	20
Zinc	0.213		1.50	1.553		mg/L		89	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 620-42913/1-B
Matrix: Water
Analysis Batch: 42979

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42947

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		12/31/24 10:19	12/31/24 15:06	1

Lab Sample ID: MB 620-42947/1-A
Matrix: Water
Analysis Batch: 42979

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42947

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		12/31/24 10:19	12/31/24 15:27	1

Lab Sample ID: LCS 620-42947/2-A
Matrix: Water
Analysis Batch: 42979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42947

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.005000		mg/L		100	85 - 115		

Lab Sample ID: 620-23112-6 MS
Matrix: Water
Analysis Batch: 42979

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		0.00500	0.004853		mg/L		97	80 - 120		

Lab Sample ID: 620-23112-6 MSD
Matrix: Water
Analysis Batch: 42979

Client Sample ID: MW-106
Prep Type: Total/NA
Prep Batch: 42947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.004954		mg/L		99	80 - 120	2	20

Lab Sample ID: MB 620-43013/1-A
Matrix: Water
Analysis Batch: 43045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43013

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		01/03/25 09:49	01/03/25 15:56	1

Lab Sample ID: LCS 620-43013/2-A
Matrix: Water
Analysis Batch: 43045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43013

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.004603		mg/L		92	85 - 115		

GC/MS VOA

Analysis Batch: 42931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-1	MW-101	Total/NA	Water	8260C	
620-23112-2	MW-102	Total/NA	Water	8260C	
620-23112-3	MW-103	Total/NA	Water	8260C	
620-23112-4	MW-104	Total/NA	Water	8260C	
620-23112-5	MW-105	Total/NA	Water	8260C	
620-23112-8	MW-108	Total/NA	Water	8260C	
620-23112-9	MW-106 DUP	Total/NA	Water	8260C	
MB 620-42931/7	Method Blank	Total/NA	Water	8260C	
LCS 620-42931/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 620-42931/5	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 42972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	8260C	
620-23112-7	MW-107	Total/NA	Water	8260C	
MB 620-42972/7	Method Blank	Total/NA	Water	8260C	
LCS 620-42972/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 620-42972/5	Lab Control Sample Dup	Total/NA	Water	8260C	
620-23112-6 MS	MW-106	Total/NA	Water	8260C	
620-23112-6 MSD	MW-106	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 42978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	3510C	
620-23112-7	MW-107	Total/NA	Water	3510C	
620-23112-8	MW-108	Total/NA	Water	3510C	
620-23112-9	MW-106 DUP	Total/NA	Water	3510C	
MB 620-42978/1-A	Method Blank	Total/NA	Water	3510C	
LCS 620-42978/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 620-42978/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
620-23112-6 MS	MW-106	Total/NA	Water	3510C	
620-23112-6 MSD	MW-106	Total/NA	Water	3510C	

Analysis Batch: 42996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 620-42978/1-A	Method Blank	Total/NA	Water	8270D	42978
LCS 620-42978/2-A	Lab Control Sample	Total/NA	Water	8270D	42978
LCSD 620-42978/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	42978

Analysis Batch: 43022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	8270D	42978
620-23112-7	MW-107	Total/NA	Water	8270D	42978
620-23112-8	MW-108	Total/NA	Water	8270D	42978
620-23112-9	MW-106 DUP	Total/NA	Water	8270D	42978
620-23112-6 MS	MW-106	Total/NA	Water	8270D	42978
620-23112-6 MSD	MW-106	Total/NA	Water	8270D	42978

GC VOA

Analysis Batch: 42981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-7	MW-107	Total/NA	Water	8015D	
620-23112-10	MW-107 DUP	Total/NA	Water	8015D	
MB 620-42981/5	Method Blank	Total/NA	Water	8015D	
LCS 620-42981/3	Lab Control Sample	Total/NA	Water	8015D	
LCSD 620-42981/4	Lab Control Sample Dup	Total/NA	Water	8015D	
620-23112-7 MS	MW-107	Total/NA	Water	8015D	
620-23112-7 MSD	MW-107	Total/NA	Water	8015D	

GC Semi VOA

Prep Batch: 42924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	3510C	
620-23112-8	MW-108	Total/NA	Water	3510C	
MB 620-42924/1-A	Method Blank	Total/NA	Water	3510C	
LCS 620-42924/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 620-42924/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
620-23112-6 MS	MW-106	Total/NA	Water	3510C	
620-23112-6 MSD	MW-106	Total/NA	Water	3510C	

Prep Batch: 42958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-7	MW-107	Total/NA	Water	3510C	
620-23112-10	MW-107 DUP	Total/NA	Water	3510C	
MB 620-42958/1-A	Method Blank	Total/NA	Water	3510C	
LCS 620-42958/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 620-42958/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
620-23112-7 MS	MW-107	Total/NA	Water	3510C	
620-23112-7 MSD	MW-107	Total/NA	Water	3510C	

Analysis Batch: 42985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-7	MW-107	Total/NA	Water	8015D	42958
620-23112-10	MW-107 DUP	Total/NA	Water	8015D	42958
MB 620-42958/1-A	Method Blank	Total/NA	Water	8015D	42958
LCS 620-42958/2-A	Lab Control Sample	Total/NA	Water	8015D	42958
LCSD 620-42958/3-A	Lab Control Sample Dup	Total/NA	Water	8015D	42958
620-23112-7 MS	MW-107	Total/NA	Water	8015D	42958
620-23112-7 MSD	MW-107	Total/NA	Water	8015D	42958

Analysis Batch: 43016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	8082A	42924
620-23112-8	MW-108	Total/NA	Water	8082A	42924
MB 620-42924/1-A	Method Blank	Total/NA	Water	8082A	42924
LCS 620-42924/2-A	Lab Control Sample	Total/NA	Water	8082A	42924
LCSD 620-42924/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	42924
620-23112-6 MS	MW-106	Total/NA	Water	8082A	42924
620-23112-6 MSD	MW-106	Total/NA	Water	8082A	42924

Metals

Prep Batch: 42895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-1	MW-101	Total/NA	Water	3005A	
620-23112-2	MW-102	Total/NA	Water	3005A	
620-23112-3	MW-103	Total/NA	Water	3005A	
620-23112-4	MW-104	Total/NA	Water	3005A	
620-23112-5	MW-105	Total/NA	Water	3005A	
620-23112-6	MW-106	Total/NA	Water	3005A	
620-23112-7	MW-107	Total/NA	Water	3005A	
620-23112-8	MW-108	Total/NA	Water	3005A	
620-23112-9	MW-106 DUP	Total/NA	Water	3005A	
MB 620-42895/1-A	Method Blank	Total/NA	Water	3005A	
LCS 620-42895/2-A	Lab Control Sample	Total/NA	Water	3005A	
620-23112-6 MS	MW-106	Total/NA	Water	3005A	
620-23112-6 MSD	MW-106	Total/NA	Water	3005A	

Leach Batch: 42913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 620-42913/1-B	Method Blank	Total/NA	Water	1311	

Prep Batch: 42947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	7470A	
620-23112-7	MW-107	Total/NA	Water	7470A	
620-23112-8	MW-108	Total/NA	Water	7470A	
620-23112-9	MW-106 DUP	Total/NA	Water	7470A	
MB 620-42913/1-B	Method Blank	Total/NA	Water	7470A	42913
MB 620-42947/1-A	Method Blank	Total/NA	Water	7470A	
LCS 620-42947/2-A	Lab Control Sample	Total/NA	Water	7470A	
620-23112-6 MS	MW-106	Total/NA	Water	7470A	
620-23112-6 MSD	MW-106	Total/NA	Water	7470A	

Analysis Batch: 42960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-1	MW-101	Total/NA	Water	6010D	42895
620-23112-2	MW-102	Total/NA	Water	6010D	42895
620-23112-3	MW-103	Total/NA	Water	6010D	42895
620-23112-4	MW-104	Total/NA	Water	6010D	42895
620-23112-5	MW-105	Total/NA	Water	6010D	42895
620-23112-6	MW-106	Total/NA	Water	6010D	42895
620-23112-7	MW-107	Total/NA	Water	6010D	42895
620-23112-8	MW-108	Total/NA	Water	6010D	42895
620-23112-9	MW-106 DUP	Total/NA	Water	6010D	42895
MB 620-42895/1-A	Method Blank	Total/NA	Water	6010D	42895
LCS 620-42895/2-A	Lab Control Sample	Total/NA	Water	6010D	42895
620-23112-6 MS	MW-106	Total/NA	Water	6010D	42895
620-23112-6 MSD	MW-106	Total/NA	Water	6010D	42895

Analysis Batch: 42979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-6	MW-106	Total/NA	Water	7470A	42947
620-23112-7	MW-107	Total/NA	Water	7470A	42947
620-23112-8	MW-108	Total/NA	Water	7470A	42947

Metals (Continued)

Analysis Batch: 42979 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-9	MW-106 DUP	Total/NA	Water	7470A	42947
MB 620-42913/1-B	Method Blank	Total/NA	Water	7470A	42947
MB 620-42947/1-A	Method Blank	Total/NA	Water	7470A	42947
LCS 620-42947/2-A	Lab Control Sample	Total/NA	Water	7470A	42947
620-23112-6 MS	MW-106	Total/NA	Water	7470A	42947
620-23112-6 MSD	MW-106	Total/NA	Water	7470A	42947

Prep Batch: 43013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-1	MW-101	Total/NA	Water	7470A	
620-23112-2	MW-102	Total/NA	Water	7470A	
620-23112-3	MW-103	Total/NA	Water	7470A	
620-23112-4	MW-104	Total/NA	Water	7470A	
620-23112-5	MW-105	Total/NA	Water	7470A	
MB 620-43013/1-A	Method Blank	Total/NA	Water	7470A	
LCS 620-43013/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 43045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-23112-1	MW-101	Total/NA	Water	7470A	43013
620-23112-2	MW-102	Total/NA	Water	7470A	43013
620-23112-3	MW-103	Total/NA	Water	7470A	43013
620-23112-4	MW-104	Total/NA	Water	7470A	43013
620-23112-5	MW-105	Total/NA	Water	7470A	43013
MB 620-43013/1-A	Method Blank	Total/NA	Water	7470A	43013
LCS 620-43013/2-A	Lab Control Sample	Total/NA	Water	7470A	43013

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-101
Lab Sample ID: 620-23112-1
Date Collected: 12/26/24 07:10
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 14:14
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:18
Total/NA	Prep	7470A			43013	DJW	EET RI	01/03/25 09:49
Total/NA	Analysis	7470A		1	43045	JPC	EET RI	01/03/25 16:24

Client Sample ID: MW-102
Lab Sample ID: 620-23112-2
Date Collected: 12/26/24 07:55
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 14:41
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:24
Total/NA	Prep	7470A			43013	DJW	EET RI	01/03/25 09:49
Total/NA	Analysis	7470A		1	43045	JPC	EET RI	01/03/25 16:26

Client Sample ID: MW-103
Lab Sample ID: 620-23112-3
Date Collected: 12/26/24 09:40
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 15:08
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:30
Total/NA	Prep	7470A			43013	DJW	EET RI	01/03/25 09:49
Total/NA	Analysis	7470A		1	43045	JPC	EET RI	01/03/25 16:28

Client Sample ID: MW-104
Lab Sample ID: 620-23112-4
Date Collected: 12/26/24 16:20
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 15:34
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:36
Total/NA	Prep	7470A			43013	DJW	EET RI	01/03/25 09:49
Total/NA	Analysis	7470A		1	43045	JPC	EET RI	01/03/25 16:31

Client Sample ID: MW-105
Lab Sample ID: 620-23112-5
Date Collected: 12/26/24 15:10
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 16:00

Client Sample ID: MW-105
Lab Sample ID: 620-23112-5
Date Collected: 12/26/24 15:10
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:42
Total/NA	Prep	7470A			43013	DJW	EET RI	01/03/25 09:49
Total/NA	Analysis	7470A		1	43045	JPC	EET RI	01/03/25 16:33

Client Sample ID: MW-106
Lab Sample ID: 620-23112-6
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42972	CLR	EET RI	01/02/25 18:42
Total/NA	Prep	3510C			42978	JAC	EET RI	01/02/25 09:20
Total/NA	Analysis	8270D		1	43022	BJJ	EET RI	01/03/25 17:52
Total/NA	Prep	3510C			42924	CAC	EET RI	12/30/24 12:34
Total/NA	Analysis	8082A		1	43016	BMH	EET RI	01/03/25 15:54
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 11:00
Total/NA	Prep	7470A			42947	DJW	EET RI	12/31/24 10:19
Total/NA	Analysis	7470A		1	42979	DJW	EET RI	12/31/24 14:26

Client Sample ID: MW-107
Lab Sample ID: 620-23112-7
Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42972	CLR	EET RI	01/02/25 18:20
Total/NA	Prep	3510C			42978	JAC	EET RI	01/02/25 09:20
Total/NA	Analysis	8270D		1	43022	BJJ	EET RI	01/03/25 19:19
Total/NA	Analysis	8015D		1	42981	RWS	EET RI	01/02/25 13:41
Total/NA	Prep	3510C			42958	CAC	EET RI	12/31/24 11:50
Total/NA	Analysis	8015D		1	42985	JS	EET RI	01/02/25 13:17
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 12:00
Total/NA	Prep	7470A			42947	DJW	EET RI	12/31/24 10:19
Total/NA	Analysis	7470A		1	42979	DJW	EET RI	12/31/24 15:08

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 16:25
Total/NA	Prep	3510C			42978	JAC	EET RI	01/02/25 09:20
Total/NA	Analysis	8270D		1	43022	BJJ	EET RI	01/03/25 19:48

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-108
Lab Sample ID: 620-23112-8
Date Collected: 12/26/24 08:45
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			42924	CAC	EET RI	12/30/24 12:34
Total/NA	Analysis	8082A		1	43016	BMH	EET RI	01/03/25 16:46
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 12:06
Total/NA	Prep	7470A			42947	DJW	EET RI	12/31/24 10:19
Total/NA	Analysis	7470A		1	42979	DJW	EET RI	12/31/24 15:14

Client Sample ID: MW-106 DUP
Lab Sample ID: 620-23112-9
Date Collected: 12/26/24 12:20
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	42931	CLR	EET RI	12/31/24 16:51
Total/NA	Prep	3510C			42978	JAC	EET RI	01/02/25 09:20
Total/NA	Analysis	8270D		1	43022	BJJ	EET RI	01/03/25 20:17
Total/NA	Prep	3005A			42895	DJW	EET RI	12/27/24 17:22
Total/NA	Analysis	6010D		1	42960	JPC	EET RI	12/30/24 12:12
Total/NA	Prep	7470A			42947	DJW	EET RI	12/31/24 10:19
Total/NA	Analysis	7470A		1	42979	DJW	EET RI	12/31/24 15:17

Client Sample ID: MW-107 DUP
Lab Sample ID: 620-23112-10
Date Collected: 12/26/24 08:50
Matrix: Water
Date Received: 12/27/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015D		1	42981	RWS	EET RI	01/02/25 15:25
Total/NA	Prep	3510C			42958	CAC	EET RI	12/31/24 11:50
Total/NA	Analysis	8015D		1	42985	JS	EET RI	01/02/25 14:28

Laboratory References:
EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Laboratory: Eurofins Rhode Island

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	7165.01	01-31-26
Connecticut	State	PH-0722	06-30-26
Maine	State	RI00100	05-09-25
Massachusetts	State	M-RI907	06-30-25
New Hampshire	NELAP	2245	09-17-25
New Jersey	NELAP	RI008	06-30-25
New York	NELAP	11393	04-01-25
Rhode Island	State	LAI00368	12-31-25

Method Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET RI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET RI
8015D	Gasoline Range Organics (GRO) (GC)	SW846	EET RI
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET RI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET RI
6010D	Metals (ICP)	SW846	EET RI
7470A	Mercury (CVAA)	SW846	EET RI
3005A	Preparation, Total Metals	SW846	EET RI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET RI
5030C	Purge and Trap	SW846	EET RI
7470A	Preparation, Mercury	SW846	EET RI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Sample Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-23112-1
Project/Site: GES - RIDEM MPA-48

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
620-23112-1	MW-101	Water	12/26/24 07:10	12/27/24 16:00
620-23112-2	MW-102	Water	12/26/24 07:55	12/27/24 16:00
620-23112-3	MW-103	Water	12/26/24 09:40	12/27/24 16:00
620-23112-4	MW-104	Water	12/26/24 16:20	12/27/24 16:00
620-23112-5	MW-105	Water	12/26/24 15:10	12/27/24 16:00
620-23112-6	MW-106	Water	12/26/24 12:20	12/27/24 16:00
620-23112-7	MW-107	Water	12/26/24 08:50	12/27/24 16:00
620-23112-8	MW-108	Water	12/26/24 08:45	12/27/24 16:00
620-23112-9	MW-106 DUP	Water	12/26/24 12:20	12/27/24 16:00
620-23112-10	MW-107 DUP	Water	12/26/24 08:50	12/27/24 16:00

CHAIN OF CUSTODY

Client: Rhode Island Dept of Environment

23112

FED-EX Tracking #	Bottle Order Control #
Lab Quote #62002909	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** **Phone #:** H Joel Walcott 800-220-6119 JWalcott@gesonline.com fax GESInbox@gesonline.com **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047438	Groundwater & Environmental Services, Inc. ges-invoices@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

REQUESTED ANALYSIS (see Test Code sheet) | **LAB USE ONLY**

620-23112 Chain of Custody

Sampler(s) Name: Jesse / Hard

Sampler(s) Name

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOCs 8260	Total PP13 metals	SVOCs 8270	PCBs	TPH DRO	TPH GRO			
-1	MW-101		12/26	0710	JK	GW	4	3		1							X	X							
-2	MW-102		12/26	0755	JK	GW	4	3		1							X	X							
-3	MW-103		12/26	0940	JK	GW	4	3		1							X	X							
-4	MW-104		12/26	1620	JK	GW	4	3		1							X	X							
-5	MW-105		12/26	1510	JK	GW	4	3		1							X	X							
-6	MW-106		12/26	1220	JK	GW	8	3		1		4					X	X	X	X					
-7	MW-107		12/26	0850	JK	GW	11	8		1		2			-		X	X	X		X	X			
-8	MW-108		12/26	0815	JK	GW	8	3		1		4					X	X	X	X					
					JK																				
-9	12/27/24 MW-106 DUP		12/26	1220	JK	WG	8	3		1		4					X	X	X						
-6	MW-106 MS		12/26	1220	JK	WG	8	3		1		4					X	X	X	X					
-6	MW-106 MS DUP		12/26	1220	JK	WG	8	3		1		4					X	X	X	X					

Turnaround Time (Business Days)

- (●) Standard 14 days
- ( ) 1 day RUSH
- ( ) Other _____ days

Lab PM Approval / Date

_____ /
_____ /
_____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM. _____
Lab PM Email: _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B" (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler	Date / Time	Received By
1	[signature]	12/26 1520	GES fridge
2	[signature]	12/26 1015	[signature]
3	[signature]	12/27/24 16:00	[signature]

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** 4.6+0.2 4.8 #6

4.2+0.2 4.4 #6

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1/13/2025

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CHAIN OF CUSTODY

23112

FED-EX Tracking #	Bottle Order Control #
Lab Quote #62002909	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 100 Sebethe Drive, Cromwell, CT 06416 **Project Manager:** H. Joel Walcott **Phone #:** 800-220-6119 JWalcott@gesonline com fax GESInbox@gesonline com **866-902-2187**	**Project Name:** RIDEM - Westerly **Project Address:** 198 Potter Hill Road, Westerly, RI **Project PSID #:** 1047438	Groundwater & Environmental Services, Inc. ap@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1524014///1115

Sampler(s) Name: Jeremy Kratz

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	TPH DRO	TPH GRO	REQUESTED ANALYSIS (see Test Code sheet)	LAB USE ONLY
-10-7	12/27/24 MW-107 Dup		12/26	0850	JK	GW	5	5									X	X		
-7	MW-107 MS		12/26	0850	JK	GW	5	5									X	X		
-7	MS-107 MSD		12/26	0850	JK	GW	5	5									X	X		
																	X	X		

Turnaround Time (Business Days)

- (●) Standard 14 days
- ( ) 1 day RUSH
- ( ) Other _____ days

Lab PM Approval / Date

_____ / _____ / _____

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Email: _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B" (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: RIDEM - Westerly_LabReport#.34867.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By	Date / Time	Received By
1	Sampler	12/26 1820	GES fridge
2		12/27 1015	
3		12/27/24 1600	

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** 4.6+0.2 4.8 #6

4.2+0.2 4.4 #6

1/13/2025

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Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 620-23112-1

Login Number: 23112
List Number: 1
Creator: Makhoul, Elie

List Source: Eurofins Rhode Island

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Joel Walcott
Groundwater & Environmental Services Inc
508 Thomson Park Drive
Cranberry Township, Pennsylvania 16066

Generated 5/2/2025 7:28:40 PM

JOB DESCRIPTION

GES - RIDEM MPA-48

JOB NUMBER

620-25512-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

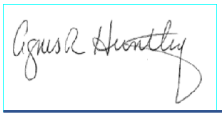
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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5/2/2025 7:28:40 PM

Authorized for release by
Agnes Huntley, Project Manager
Agnes.Huntley@et.eurofinsus.com
(401)267-4374

Table of Contents

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

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
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: 620-25512-1 Eurofins Rhode Island

Job Narrative
620-25512-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be 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.

Receipt
The samples were received on 4/28/2025 12:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C.

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

Detection Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-105 — Lab Sample ID: 620-25512-1

No Detections.

Client Sample ID: MW-106 — Lab Sample ID: 620-25512-2

No Detections.

Client Sample ID: MW-107 — Lab Sample ID: 620-25512-3

No Detections.

Client Sample ID: MW-108 — Lab Sample ID: 620-25512-4

No Detections.

Client Sample ID: MW-106-DUP — Lab Sample ID: 620-25512-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-105
Lab Sample ID: 620-25512-1
Date Collected: 04/28/25 12:00
Matrix: Water
Date Received: 04/28/25 12:30

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 11:32	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:13	1

Client Sample ID: MW-106
Lab Sample ID: 620-25512-2
Date Collected: 04/28/25 10:50
Matrix: Water
Date Received: 04/28/25 12:30

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 11:50	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:31	1

Client Sample ID: MW-107
Lab Sample ID: 620-25512-3
Date Collected: 04/28/25 09:55
Matrix: Water
Date Received: 04/28/25 12:30

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 11:56	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:37	1

Client Sample ID: MW-108
Lab Sample ID: 620-25512-4
Date Collected: 04/28/25 09:05
Matrix: Water
Date Received: 04/28/25 12:30

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:02	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:43	1

Client Sample ID: MW-106-DUP
Lab Sample ID: 620-25512-5
Date Collected: 04/28/25 10:55
Matrix: Water
Date Received: 04/28/25 12:30

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:08	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00800		mg/L		04/28/25 14:51	04/29/25 12:49	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 620-46976/1-A
Matrix: Water
Analysis Batch: 47089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46976

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00400		mg/L		04/28/25 14:51	04/29/25 11:20	1

Lab Sample ID: LCS 620-46976/2-A ^2
Matrix: Water
Analysis Batch: 47089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46976

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			0.750	0.7615		mg/L		102	80 - 120		

Lab Sample ID: 620-25512-1 MS
Matrix: Water
Analysis Batch: 47089

Client Sample ID: MW-105
Prep Type: Total/NA
Prep Batch: 46976

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	ND		1.50	1.509		mg/L		101	75 - 125		

Lab Sample ID: 620-25512-1 DU
Matrix: Water
Analysis Batch: 47089

Client Sample ID: MW-105
Prep Type: Total/NA
Prep Batch: 46976

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	ND			ND		mg/L				NC	20

Metals

Filtration Batch: 46972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-25512-1	MW-105	Dissolved	Water	Filtration	
620-25512-2	MW-106	Dissolved	Water	Filtration	
620-25512-3	MW-107	Dissolved	Water	Filtration	
620-25512-4	MW-108	Dissolved	Water	Filtration	
620-25512-5	MW-106-DUP	Dissolved	Water	Filtration	

Prep Batch: 46976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-25512-1	MW-105	Dissolved	Water	3005A	46972
620-25512-1	MW-105	Total/NA	Water	3005A	
620-25512-2	MW-106	Dissolved	Water	3005A	46972
620-25512-2	MW-106	Total/NA	Water	3005A	
620-25512-3	MW-107	Dissolved	Water	3005A	46972
620-25512-3	MW-107	Total/NA	Water	3005A	
620-25512-4	MW-108	Dissolved	Water	3005A	46972
620-25512-4	MW-108	Total/NA	Water	3005A	
620-25512-5	MW-106-DUP	Dissolved	Water	3005A	46972
620-25512-5	MW-106-DUP	Total/NA	Water	3005A	
MB 620-46976/1-A	Method Blank	Total/NA	Water	3005A	
LCS 620-46976/2-A ^2	Lab Control Sample	Total/NA	Water	3005A	
620-25512-1 MS	MW-105	Total/NA	Water	3005A	
620-25512-1 DU	MW-105	Total/NA	Water	3005A	

Analysis Batch: 47089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
620-25512-1	MW-105	Dissolved	Water	6010D	46976
620-25512-1	MW-105	Total/NA	Water	6010D	46976
620-25512-2	MW-106	Dissolved	Water	6010D	46976
620-25512-2	MW-106	Total/NA	Water	6010D	46976
620-25512-3	MW-107	Dissolved	Water	6010D	46976
620-25512-3	MW-107	Total/NA	Water	6010D	46976
620-25512-4	MW-108	Dissolved	Water	6010D	46976
620-25512-4	MW-108	Total/NA	Water	6010D	46976
620-25512-5	MW-106-DUP	Dissolved	Water	6010D	46976
620-25512-5	MW-106-DUP	Total/NA	Water	6010D	46976
MB 620-46976/1-A	Method Blank	Total/NA	Water	6010D	46976
LCS 620-46976/2-A ^2	Lab Control Sample	Total/NA	Water	6010D	46976
620-25512-1 MS	MW-105	Total/NA	Water	6010D	46976
620-25512-1 DU	MW-105	Total/NA	Water	6010D	46976

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-105
Lab Sample ID: 620-25512-1
Date Collected: 04/28/25 12:00
Matrix: Water
Date Received: 04/28/25 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Filtration	Filtration			46972	JPC	EET RI	04/28/25 14:29
Dissolved	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Dissolved	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:13
Total/NA	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Total/NA	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 11:32

Client Sample ID: MW-106
Lab Sample ID: 620-25512-2
Date Collected: 04/28/25 10:50
Matrix: Water
Date Received: 04/28/25 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Filtration	Filtration			46972	JPC	EET RI	04/28/25 14:29
Dissolved	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Dissolved	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:31
Total/NA	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Total/NA	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 11:50

Client Sample ID: MW-107
Lab Sample ID: 620-25512-3
Date Collected: 04/28/25 09:55
Matrix: Water
Date Received: 04/28/25 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Filtration	Filtration			46972	JPC	EET RI	04/28/25 14:29
Dissolved	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Dissolved	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:37
Total/NA	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Total/NA	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 11:56

Client Sample ID: MW-108
Lab Sample ID: 620-25512-4
Date Collected: 04/28/25 09:05
Matrix: Water
Date Received: 04/28/25 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Filtration	Filtration			46972	JPC	EET RI	04/28/25 14:29
Dissolved	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Dissolved	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:43
Total/NA	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Total/NA	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:02

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Client Sample ID: MW-106-DUP
Lab Sample ID: 620-25512-5

Date Collected: 04/28/25 10:55
Matrix: Water
Date Received: 04/28/25 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Filtration	Filtration			46972	JPC	EET RI	04/28/25 14:29
Dissolved	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Dissolved	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:49
Total/NA	Prep	3005A			46976	JPC	EET RI	04/28/25 14:51
Total/NA	Analysis	6010D		1	47089	JPC	EET RI	04/29/25 12:08

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Laboratory: Eurofins Rhode Island

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	7165.01	01-31-27
Connecticut	State	PH-0824	06-30-26
Maine	State	RI00100	05-09-25
Massachusetts	State	M-RI907	06-30-25
New Hampshire	NELAP	2245	09-17-25
New Jersey	NELAP	RI008	06-30-25
New York	NELAP	11393	03-31-26
Rhode Island	State	LAI00368	12-31-25

Method Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET RI
3005A	Preparation, Total Metals	SW846	EET RI
Filtration	Sample Filtration	None	EET RI

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET RI = Eurofins Rhode Island, 646 Camp Ave, North Kingstown, RI 02852, TEL (413)789-9018

Sample Summary

Client: Groundwater & Environmental Services Inc
Job ID: 620-25512-1
Project/Site: GES - RIDEM MPA-48

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
620-25512-1	MW-105	Water	04/28/25 12:00	04/28/25 12:30
620-25512-2	MW-106	Water	04/28/25 10:50	04/28/25 12:30
620-25512-3	MW-107	Water	04/28/25 09:55	04/28/25 12:30
620-25512-4	MW-108	Water	04/28/25 09:05	04/28/25 12:30
620-25512-5	MW-106-DUP	Water	04/28/25 10:55	04/28/25 12:30

25512

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CHAIN OF CUSTODY RECORD

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Special Handling:

☑ Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed

Report To	Hannah Pallein
	Groundwater & Environmental Services, Inc
	100 Sebethe Drive, Unit A8
	Cromwell, CT 06416
Telephone #	800-220-6119, ext. 3544
Project Mgr	Hannah Pallein, hpallein@gesonline.com

Invoice To	Rachel Simpson, Rachel.simpson@dem.ri.gov
	Rhode Island Department of Environmental Management
	235 Promenade Street
	Providence, RI 02908
P O No	_____
Quote #	62004098

Project No	1525049
Site Name	Potter Hill Mill
Location	198 Potter Hill Rd, Westerly — State RI
Sampler(s)	Van Sawyer

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= none 12= _____

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= _____ X2= _____ X3= _____

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Total Arsenic	Dissolved Arsenic	Check if chlorinated
-1	MW-105	4/26/25	~~1005~~ 1200	G	GW				2	X	X	☐
-2	MW-106	4/26/25	1050	G	GW				2	X	X	☐
-3	MW-107	4/26/25	0955	G	GW				2	X	X	☐
-4	MW-108	4/28/25	0905	G	GW				2	X	X	☐
-5	MW-106-DUP	4/28/25	1055	G	GW				2	X	X	☐
												☐
												☐
												☐
												☐
												☐
												☐

List Preservative Code below: 4 | 11

620-25512 COC

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other _____
State-specific reporting standards

Lab to filter Arsenic.
GW Samples must meet
RIDEM GA Groundwater Objectives
INVOICE SHOULD USE MPA-48 RATES

Relinquished by:	Received by:	Date:	Time:
		4/28/25	1230

Temp °C: Observed 2.8 | Correction Factor +0.2 | Corrected 3.0

☐ EDD format
☑ E-mail to hpallein@gesonline.com, gesinbox@gesonline.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Sample Shipping Address: 126 Myron Street • West Springfield, MA 01089 • 413-789-9018
Lab Address: 646 Camp Ave • North Kingstown, RI 02852

www.EurofinsUS.com/Spectrum

Rev. Jan 2020

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5/2/2025

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 620-25512-1

Login Number: 25512
List Number: 1
Creator: Makhoul, Elie

List Source: Eurofins Rhode Island

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix G – Data Validation Summary

Data Validation Report – Former Potter Hill Mill

December 2024 Sampling Activities

Groundwater & Environmental Services, Inc.

Environmental Informatics Group

Bonnie Janowiak, Ph.D.

Principal Chemist

708 N Main St. Suite 201
Blacksburg, VA 24060

January 2025

Subject: **Stage 2A Data Validation -** Level II Data Deliverable Eurofins Lancaster Laboratories Environment Testing, LLC Jobs J22848-1, J22849-1, J22964-1, J23112-1

Site: **Former Potter Hill Mill – 198 Potter Hill Road, Westerly, Rhode Island**

Introduction

Groundwater and Environmental Services, Inc. (GES) is pleased to present the Tier 1 Stage 2A data validation results obtained from solid samples, groundwater samples, field duplicate samples, and trip blanks collected in December of 2024 as part of the RIDEM MPA-48 December 2024 Site sampling event. The analyses were performed at Eurofins Environment Testing in Rhode Island (Eurofins RI). The samples were analyzed for the following:

- EPA Methods 5030C/8260C – Selected Volatile Organic Compounds (VOCs**)**
- EPA Method 8270D/SIM – Selected Semivolatile Organic Compounds (SVOCs)
- EPA Method 8015D – Gas Range Organics (GRO) / Diesel Range Organics (DRO)
- EPA Method 8082A – Polychlorobiphenyls (PCBs)
- EPA Method 6010D – Metals
- EPA Method 7471B – Mercury

Executive Summary

The samples were handled, prepared, and measured in the same manner under similar prescribed conditions. Overall, based on the quality control (QC) parameters listed below, the data, as qualified, are usable for meeting project objectives per the specified analytical requirements for the project. Qualified data should be used within the limitations of the qualification.

The organic data were reviewed in accordance with the following guidelines:

- EPA Contract Laboratory Program's National Functional Guidelines for Organic Superfund Methods Data Review, November 2020 (EPA 540-R-20-005);
- Corrective Measures Implementation Work Plan, July 2018; and
- The pertinent methods referenced by the data package and professional judgment.

The inorganic data were reviewed in accordance with the following guidelines:

- EPA Contract Laboratory Program's National Functional Guidelines for Inorganic Superfund Methods Data Review, November 2020 (EPA 542-R-20-006);
- Corrective Measures Implementation Work Plan, July 2018; and
- The pertinent methods referenced by the data package and professional judgment.

The following samples were analyzed and validated at a Stage 2A level:

Table 1a: Laboratory Sample Cross Reference _Soils

Lab Sample ID	Client Sample ID
620-22849-1	SB-1 (0-2)
620-22849-2	MW-101 (0-2)
620-22849-3	SB-6 (2-4)
620-22849-4	MW-108 (0-2)
620-22849-5	SB-7 (4-5)
620-22849-6	MW-103 (0-2)
620-22849-7	MW-106 (0-2)
620-22849-8	SB-8 (4-5)
620-22849-9	SB-8 (4-5)-DUP
620-22849-10	MW-105 (0-2)
620-22849-11	SB-5 (0-2)
620-22849-12	MW-104 (0-2)
620-22849-13	SB-3 (0-2)
620-22849-14	Trip Blank
620-22848-1	SB-4 (0-2)
620-22848-2	SB-2 (0-2)
620-22848-3	MW-102 (0-2)
620-22848-4	MW-101 (5-6)
620-22848-5	MW-102 (13-15)
620-22848-6	MW-107 (13-15)
620-22848-7	MW-108 (13-15)
620-22848-8	MW-108 (13-15)-DUP
620-22848-9	Trip Blank
620-22964-1	MW-103 (11-13)
620-22964-2	MW-103 (11-13) DUP

Lab Sample ID	Client Sample ID
620-22964-3	MW-105 (9-11)
620-22964-4	MW-106 (9-11)
620-22964-5	MW-104 (7-9)
620-22964-6	SB-3 (7-9)
620-22964-7	SB-4 (13-15)
620-22964-8	SB-2 (9-11)
620-22964-9	Trip Blank

Table 1b: Laboratory Sample Cross Reference - Water

Lab Sample ID	Client Sample ID
620-22849-1	SB-1 (0-2)
620-22849-2	MW-101 (0-2)
620-22849-3	SB-6 (2-4)
620-22849-4	MW-108 (0-2)
620-22849-5	SB-7 (4-5)
620-22849-6	MW-103 (0-2)
620-22849-7	MW-106 (0-2)
620-22849-8	SB-8 (4-5)
620-22849-9	SB-8 (4-5)-DUP
620-22849-10	MW-105 (0-2)

Table 2: Validated Data

Sample I.D.	Analyte	Validation Qualifier*	Reason
MW-101 **MW-102** **MW-103** **MW-104** **MW-105** **MW-108** **MW-106 DUP**	Chlorobenzene 1,1,1,2-Tetrachloroethane	UJ	Low LCS/LCSD
MW-106 **MW-107**	1,1,1,2-Tetrachloroethane Bromoform Chloromethane 3,3'-Dichlorobenzidine bis (2-chloroisopropyl) ether Benzo[a]anthracene	UJ	Low LCS/LCSD
MW-106 (9-11) **MW-104 (7-9)** **SB-3 (7-9)** **SB-4 (13-15)** **MW-108 (0-2)** **SB-7 (4-5)** **MW-103 (0-2)** **MW-106 (0-2)** **SB-8 (4-5)** **SB-8 (4-5)-DUP** **MW-105 (0-2)** **SB-5 (0-2)** **MW-104 (0-2)** **SB-3 (0-2)** **SB-1(0-2)** **MW-101 (0-2)** **SB-6(2-4)** **MW-102 (13-15)** **MW-107 (13-15)** **MW-108 (13-15)** **MW-108 (13-15) DUP**	Benzidine (a poor performing analyte)	UJ	Low LCS/LCSD
MW-103 (11-13) MW-103 (11-13)	Nickel Zinc	J	Field RPD > 50%
MW-108 (13-15) MW-108 (13-15) DUP	**Benzo[a]anthracene** **Benzo[a]pyrene** **Benzo[b]fluoranthene** **Benzo[k]fluoranthene** **Chrysene** **Fluoranthene** **Phenanthrene** **Pyrene** **C10-C28** **Chromium** **Copper** **Lead**	J	Field RPD > 50%

Sample I.D.	Analyte	Validation Qualifier*	Reason
SB-4 (0-2)	Mercury	J-	Low MSMSD
MW-105 (0-2)	PCB 1254 OCB-1260	J+	High Surrogate recovery
SB-3 (0-2)	GRO	J-	Low Surrogate recovery
MW-106 (0-2)	DRO	J	Surrogate <10%, analyte detected
SB-8 (4-5) **SB-8 (4-5) Dup**	Benzo(a)pyrene	J	Field RPD > 50%

* Validation qualifiers definitions are in Attachment 1 at the end of this report.

Organic Compounds

Samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), gasoline range organics (GRO), diesel range organics (DRO) and polychlorobiphenyls (PCBs). The areas of data review are listed below:

- Overall Assessment
- Holding Time
- Method Blank, Trip Blank, Field Blank
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample
- Surrogate
- Field Duplicate

Overall Assessment

The organic data reported in this package are considered usable for meeting project objectives.

Elevated detections limits were reported for SVOCs due to matrix issues:

- MW-101(0-2)
- MW-106 (0-2)
- MW-108 (13-15) DUP
- SB-4 (0-2)
- MW-102 (0-2)
- MW-101 (5-6)

Elevated detections limits were reported for DRO analysis due to matrix issues:

- SB-4 (0-2)
- MW-102 (0-2)
- MW-101 (5-6)
- MW-108 (13-15)-DUP

Completeness

The organic data reported in the data packages associated with the December 2024 sampling event are usable for meeting project objectives. The results are valid and the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated, but does not include data qualified as rejected) to the total number of analytical results requested on samples submitted for analysis for the project is 98%%.

Holding Time and Preservation

The holding time for a preserved water sample (pH < 2) for VOC, and SVOC analyses is 14 days from collection to analysis. The holding time for an unpreserved water sample for VOC samples is 7 days from collection to analysis. Samples were stored and preserved appropriately.

Method Blank, Trip Blank

Trip blanks and method blanks accompanied the analytical sample data. Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were analyzed with each analytical batch. There were no positive detections in either field- or laboratory-generated blanks.

Matrix Spike/Matrix Spike Duplicate

The MS/MSD for VOCs utilizing SB-3 (7-9) reported high recoveries in multiple analytes. No detections were reported and no data were affected.

The MS/MSD pairs for SVOCs utilizing SB-3 (7-9) and SB-2 (9-11) reported high recoveries in multiple analytes. No detections were reported and no data were affected.

The MS/MSD for GRO utilizing SB-4 (13-15) reported high recoveries in multiple analytes. No detections were reported and no data were affected.

Laboratory Control Sample (LCS)

LCS/LCSD were analyzed for organics at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples, or one per analytical batch). The recovery results for the LCS samples were within the laboratory specified acceptance criteria with the exception:

- Vinyl chloride recovery was high out-of-specification in the LCS associated with batch 42931. There were no associated detections reported from this analytical batch, no qualifiers were required.
- Chlorobenzene and 1,1,2-tetrachloroethane recovered low in the LCS associated with batch 42931. Associated sample data (non-detect) is qualified as estimated non-detect (UJ).
- Chloromethane, 1,1,2-tetrachloroethane, and bromoform recovered low in the LCS/LCSD associated with analytical batch 42972. Associated sample data (non-detect) is qualified as estimated non-detect (UJ).
- 2,4-Dinitrophenol, 4,6-dinitro-2-methylphenol and benzoic acid recoveries were high out-of-specification in the LCS associated with batch 42978. There were no associated detections reported from this analytical batch.

- 3 3,3'-Dichlorobenzidine, benzo[a]anthracene and bis (2-chloroisopropyl) ether recovered low in the LCS/LCSD for batch 42978. Associated sample data (non-detect) is qualified as estimated non-detect (UJ).

- Benzidine recovered low in batch 42700, 42474, and 42656. Associated sample data (non-detect) is qualified as estimated non-detect (UJ).

Surrogates

Surrogates for the VOC analyses recovered within criteria with the following exception:

- VOC surrogate for MW-104(7-9) recovered high. There were no detections reported and data is not affected.

Surrogates for the SVOC analyses:
Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base surrogate to be out of compliance without re-extraction.

Surrogates for the GRO and DRO analysis recovered within criteria with the exception of the following:

- GRO surrogate for MW-108 (13-15)) recovered high. There were no GRO detections reported and data is not affected.

- GRO surrogate for SB-3 recovered low, data is qualified as estimated with a possible low bias. (J-)

- DRO surrogate for MW-106 (0-2) recovered low (<10%). Data is qualified as estimated.

Surrogates for the PCB analyses for multiple samples showed matrix interference on one column, but the other column recovered within criteria. Data for these samples are usable, extraction was performed correctly and there is no bias.

Surrogate recovery for MW-108(0-2) and MW-105 (0-2) reported high. For detected analytes, data is qualified as estimated with a possible high bias.

Sensitivity

Elevated detections limits were reported for SVOCs due to matrix issues:

- MW-101(0-2)
- MW-106(0-2)
- MW-108(13-15) DUP

- SB-4(0-2)
- MW-102 (0-2)
- MW-101 (5-6)

Elevated detections limits were reported for DRO analysis due to matrix issues:

- SB-4 (0-2)
- MW-102 (0-2)
- MW-101 (5-6)
- MW-108 (13-15)-DUP

Metals by EPA 6010 and Mercury by 7471B

Samples were analyzed for metals and mercury using EPA Methodology . The areas of data review are listed below:

- Overall Assessment
- Holding Time
- Method Blank
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample
- Field Duplicate

Overall Assessment

The metal and mercury data reported in this package are considered usable for meeting project objectives.

MW-106 reported elevated metal detection limits due to matrix interference.

Completeness

The organic data reported in the data packages associated with the December 2024 sampling event are usable for meeting project objectives. The results are valid and the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated, but does not include data qualified as rejected) to the total number of analytical results requested on samples submitted for analysis for the project is 100%

Holding Time and Preservation

Metal and mercury samples were preserved appropriately and analyzed within holding time.

Method Blank

Method blanks accompanied the analytical sample data. Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were analyzed with each analytical batch. There were no positive detections in laboratory-generated blanks.

Matrix Spike/Matrix Spike Duplicate

SB-4 (0-2) reported low mercury recoveries in the MSD sample and RPD calculations were outside criteria.

All other metal and mercury MS/MSD recoveries were within criteria.

Laboratory Control Sample (LCS)

LCS/LCSD were analyzed for metals and mercury at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples, or one per analytical batch). The recovery results for the LCS samples were within the laboratory specified acceptance criteria.

Field Duplicates and Precision

Field duplicates were analyzed at multiple locations with the Site data. RPDs were calculated for analytes where concentration values were not qualified as ND and were >5x the RL, and are tabulated below. Values were considered valid if they met EPA acceptable precision criteria (RPD ≤30% for aqueous, RPD≤50% for solid).

Precision Calculations

Analyte	SB-8 (4-5)	SB-8 (4-5) DUP	RPD	Acceptable
Anthracene	106	ND	NC	A
Benzo[a]anthracene	268	157	NC	A
Benzo[a]pyrene	304	158	63.2	J
Benzo[b]fluoranthene	325	168	NC	A
Benzo[g,h,i]perylene	217	106	NC	A
Benzo[k]fluoranthene	310	154	NC	A
Chrysene	297	158	NC	A
Dibenz(a,h)anthracene	86.0	ND	NC	A
Fluoranthene	583	348	NC	A
Indeno[1,2,3-cd]pyrene	206	104	NC	A
Phenanthrene	360	173	NC	A
Pyrene	494	289	NC	A
C10-C28	ND	210	NC	A
Chromium	4.83	4.87	0.8	A
Copper	9.46	8.80	7.2	A
Lead	2.76	ND	NC	A
Nickel	2.04	ND	NC	A
Zinc	17.1	16.4	4.2	A

Precision Calculations

Analyte	MW-103 (11-13)	MW-103 (11-13) DUP	RPD	Acceptable
Chromium	11.2	7.43	40.5	A
Copper	15.9	12.5	23.9	A
Lead	2.93	2.18	29.4	A
Nickel	8.14	4.23	63.2	J
Zinc	27.6	13.9	66	J

mg/Kg-milligrams/kilogram
RPD - relative percent difference
NC: Not calculated – concentration too low.
A: Acceptable variance (<30%)
J: Data is qualified as an estimate

Precision Calculations

Analyte	MW-106	MW-106 DUP	RPD	Acceptable
Arsenic	ND	0.0133	NC!	A
Chromium	0.0132	ND	NC	A
Copper	0.0214	0.0165	25.9	A
Zinc	0.213	0.216	1.4	A

mg/Kg-milligrams/kilogram
RPD - relative percent difference
NC: Not calculated – concentration too low.
A: Acceptable variance (<30%)
J: Data is qualified as an estimate

Precision Calculations

Analyte	MW-108 (13-15)	MW-108 (13-15) DUP	RPD	Acceptable
1-Methylnaphthalene	389	ND	NC	A
2-Methylnaphthalene	472	ND	NC	A
Acenaphthene	ND	542	NC	A
Acenaphthylene	86.4	687	NC	A
Anthracene	209	1890	NC	A
Benzo[a]anthracene	446	5060	167.6	**J**
Benzo[a]pyrene	345	5040	174.4	J
Benzo[b]fluoranthene	345	5750	177.4	J
Benzo[g,h,i]perylene	221	3600	NC	A
Benzo[k]fluoranthene	324	4670	174.0	J
Benzoic acid	ND	3230	NC	A
Carbazole	ND	1250	NC	A
Chrysene	470	6550	173.2	J
Dibenz(a,h)anthracene	107	1370	NC	A
Fluoranthene	916	12200	172.1	J
Fluorene	ND	729	NC	A
Indeno[1,2,3-cd]pyrene	200	3300	NC	A
Naphthalene	427	515	18.7	A
Phenanthrene	880	10600	169.3	J
Pyrene	993	12000	169.4	J
C10-C28	62.5	393	145.1	J
Chromium	3.03	16.3	137.3	J
Copper	3.42	8.42	84.5	J
Lead	3.89	17.3	126.6	J
Nickel	3.62	3.18	12.9	A
Zinc	23.8	33.0	32.4	A

mg/Kg-milligrams/kilogram
RPD - relative percent difference
NC: Not calculated – concentration too low.
A: Acceptable variance (<30%)
J: Data is qualified as an estimate

VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference (Inorganic analysis only).

J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference (Inorganic analysis only).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to measure accurately and precisely the analyte in the sample.

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Data Validation Report – Former Potter Hill Mill

April 2025 Sampling Activities

Groundwater & Environmental Services, Inc.

Environmental Informatics Group

Bonnie Janowiak, Ph.D.
Principal Chemist
NRCC Environmental Chemist

202 North Main Street
Kent Square North, Suite 200
Blacksburg, VA 24060

May 2025

Subject: **Stage 2A Data Validation -** Level II Data Deliverable Eurofins Rhode Island, LLC Job 620-25512-1

Site: **Former Potter Hill Mill – 198 Potter Hill Road, Westerly, Rhode Island**

Introduction

Groundwater and Environmental Services, Inc. (GES) is pleased to present the Tier 1 Stage 2A data validation results obtained from 4 groundwater samples and afield duplicate sample collected in April of 2025 as part of the RIDEM MPA-48 April 2025 Site sampling event. The analyses were performed at Eurofins Environment Testing in Rhode Island (Eurofins RI). The samples were analyzed for the following:

- EPA Method 6010D – Metals

Executive Summary

The samples were handled, prepared, and measured in the same manner under similar prescribed conditions. Overall, based on the quality control (QC) parameters listed below, the data, as qualified, are usable for meeting project objectives per the specified analytical requirements for the project. Qualified data should be used within the limitations of the qualification.

The metals data were reviewed in accordance with the following guidelines:

- EPA Contract Laboratory Program's National Functional Guidelines for Inorganic Superfund Methods Data Review, November 2020 (EPA 542-R-20-006);
- Corrective Measures Implementation Work Plan, July 2018; and
- The pertinent methods referenced by the data package and professional judgment.

The following samples were analyzed and validated at a Stage 2A level. There were no non-compliances noted and the data is usable without qualification.

Table 1b: Laboratory Sample Cross Reference - Water

Lab Sample ID	Client Sample ID
620-25512-1	MW-105
620-25512-2	MW-106
620-25512-3	MW-107
620-25512-4	MW-108
620-25512-5	MW-106-DUP

Metals by EPA 6010

Samples were analyzed for metals and mercury using EPA Methodology . The areas of data review are listed below:

- Overall Assessment
- Holding Time
- Method Blank
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample
- Field Duplicate

Overall Assessment

The metal data reported in this package are considered usable for meeting project objectives.

Completeness

The metals data reported in the data packages associated with the April 2025 sampling event are usable for meeting project objectives. The results are valid and the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated, but does not include data qualified as rejected) to the total number of analytical results requested on samples submitted for analysis for the project is 100%

Holding Time and Preservation

Metal samples were preserved appropriately and analyzed within holding time.

Method Blank

Method blanks accompanied the analytical sample data. Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were analyzed with each analytical batch. There were no positive detections in laboratory-generated blanks.

Matrix Spike/Matrix Spike Duplicate

All metal MS/MSD recoveries were within criteria.

Laboratory Control Sample (LCS)

LCS/LCSD were analyzed for metals at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples, or one per analytical batch). The recovery results for the LCS samples were within the laboratory specified acceptance criteria.

Field Duplicates and Precision

Neither the original or duplicate sample reported above RL concentrations of arsenic. No precision was calculated.

VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference (Inorganic analysis only).

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NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Appendix G – Certification Letters

Groundwater & Environmental Services, Inc.

100 Sebethe Drive, Unit A8
Cromwell, CT 06416

T. 800.220.6119

May 21, 2025

Ms. Rachel Simpson
Rhode Island Department of Environmental Management
Office of Land Revitalization and Sustainable Materials Management
235 Promenade Street
Providence, Rhode Island 02908-5767

Re: Certification of Site Investigation Report
Former Potter Hill Mill
198 Potter Hill Road
Westerly, Rhode Island 02891
Grant No. 4B-00A00985

Dear Ms. Simpson:

In accordance with Section 1.8 of the Rhode Island Department of Environmental Management (RIDEM) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the "Remediation Regulations"), Groundwater & Environmental Services, Inc. (GES) is providing you with certification that the above-referenced report is complete and accurate to the best of our knowledge.

Certification of the report by the Town of Westerly, Rhode Island is provided in a separate letter included with the Site Investigation Report. If you have any questions regarding the subject property, you may contact me at (800) 220-6119, extension 3616 or Mr. Shawn Lacey of the Town of Westerly at (401) 348-2530.

Sincerely,
Groundwater & Environmental Services, Inc.

Joel Walcott, PE
Principal Engineer

Cc: RIDEM file

Town of Westerly

Town Hall • 45 Broad Street • Westerly, Rhode Island 02891
TEL: (401) 348-2530 • www.WesterlyRI.gov

Office of the
Town Manager

May 29, 2025

Ms. Rachel Simpson
Rhode Island Department of Environmental Management
Office of Land Revitalization and Sustainable Materials Management
235 Promenade Street
Providence, Rhode Island 02908-5767

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Dear Ms. Simpson:

In accordance with Section 1.8 of the Rhode Island Department of Environmental Management (RIDEM) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the "Remediation Regulations"), the Town of Westerly, Rhode Island is providing you with certification that the above-referenced report is complete and accurate to the best of our knowledge.

Certification of the report by the environmental consultant, Groundwater & Environmental Services, Inc. (GES) is provided in a separate letter included with the Site Investigation Report. If you have any questions regarding the subject property, you may contact me at (401) 348-2530, or GES at (800) 220-6119.

Sincerely,

Shawn M. Lacey
Town Manager