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Pre-Construction Investigation Report
Proposed Maintenance and Storage Buildings

Hudson Valley Regional Airport Site
18 Griffith Way
Town of Wappinger
Dutchess County, New York
NYSDEC Site #C314129

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"I, Mark Williams, certify that I am currently a Licensed Professional Geologist in New York and that this work plan was prepared in accordance with applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10)."

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PRE-CONSTRUCTION INVESTIGATION REPORT

PROPOSED MAINTENANCE AND STORAGE BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT SITE
18 GRIFFITH WAY
TOWN OF WAPPINGER, DUTCHESS COUNTY

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Acronyms

Above Mean Sea Level (AMSL)
Aircraft Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE)
Ambient Water Quality Standards (AWQS)
Aqueous Film-Forming Foam (AFFF)
Area of Concern (AOC)
Associated Aircraft Group (AAG)
Brownfield Cleanup Program (BCP)
Community Air Monitoring Program (CAMP)
Construction Disturbance Area (CDA)
Core Down Drilling, Inc. (CDD)
C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male)
Commercial Use Interim Guidance Values for PFAS (CU IGV)
Commercial Use Soil Cleanup Objectives (CU SCO)
Federal Aviation Administration (FAA)
Field Evidence of Contamination (FEC)
Hollow Stem Auger (HSA)
Inactive Hazardous Waste Disposal Site (IHWDS)
Interim Guidance Value (IGV)
Interim Remedial Measures Work Plan (IRMWP)
Matrix Spike (MS)
Matrix Spike Duplicate (MSD)
Micrograms per Cubic Meter ($\mu g/m^3$)
Micrograms per Kilogram (µg/kg)
Micrograms per Liter (µg/L)
Milligrams per Kilogram (mg/kg)
Milligrams per Liter (mg/L)
Nanograms per Liter (ng/L)
New York State (NYS)
New York State Department of Environmental Conservation (NYSDEC)
New York State Department of Health (NYSDOH)
New York State Department of Transportation (NYSDOT)-
New York State Geological Survey (NYSGS)
NYS Licensed Professional Land Surveyor (LPLS)
Oil / Water Separator (OWS)
Parts Per Million (ppm)
Parts Per Billion (ppb)
Per- and Polyfluoroalkyl substances (PFAS)
Perfluorooctanoic Acid (PFOA)
Perfluorooctane Sulfonic Acid (PFOS)

Acronyms ***(Continued)***

PCI Work Plan (PCIWP)
Polychlorinated Biphenyls (PCBs)
Pre-Construction Investigation (PCI)
Protection of Groundwater Use Interim Guidance Values for PFAS (PG IGV)
Protection of Groundwater Use Soil Cleanup Objectives (PG SCO)
PVE, LLC (PVE)
Quality Assurance / Quality Control (QA/QC)
Remedial Investigation (RI)
Remedial Investigation Report (RIR)
Semi-Volatile Organic Compounds (SVOCs)
Site Characterization (SC)
Site Characterization Investigation (SCI)
Site Characterization Report (SCR)
Soil Investigation Report (SIR)
Site Management Plan (SMP)
Standards Criteria and Guidance (SCGs)
Target Analyte List (TAL)
Target Compound List (TCL)
Technical and Operational Guidance Series (TOGS 1.1.1)
Test Pit Investigation (TPI)
United States Department of Agriculture (USDA)
United States Geological Survey (USGS)
Unrestricted Use Soil Cleanup Objectives (UU SCO)
Unrestricted Use Interim Guidance Value for PFAS (UU IGV)
Volatile Organic Compounds (VOCs)

1.0 INTRODUCTION

This document constitutes a report summarizing the Pre-Construction Investigation (PCI) conducted on a small portion of the Hudson Valley Regional Airport property located at 18 Griffith Way, in the Town of Wappinger, Dutchess County, New York (the Site). Refer to Figure 1 – Site Location Map. The Site is approximately 510.8 acres and is identified with the Dutchess County parcel number 135689-6259-03-225301-0000. The Site is operated by the Dutchess County Department of Public Works (the County). The New York State Department of Environmental Conservation (NYSDEC) accepted the Site into its Brownfield Cleanup Program (BCP No. C314129) on October 15, 2024 to address the discovery of the per- and polyfluoroalkyl substances (PFAS), more particularly perfluorooctanoic acid (PFOA) and perfluoro-octane sulfonic acid (PFOS) detected in May 2016 in an on-site drinking water supply well.

This report details the findings of the PCI completed on October 16, 2025, by C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male). The PCI focused on a limited project area comprised of two proposed building footprints: an equipment storage building, a building to store salt and urea, and buffer areas immediately adjacent to these footprints. This is a construction project, which will be referred to as the "Proposed Maintenance and Storage Buildings project area" or as the "proposed project area" (refer to Figure 2: Project Area and Vicinity Map and Figure 3: Pre-Construction Investigation Overview Map for the location of the proposed Maintenance and Storage Buildings). The County plans to begin this construction project in 2026, before a NYSDEC-approved Remedial Investigation (RI) of the Site is completed. Since the RI has not been initiated in the Maintenance and Storage Building project area, the NYSDEC requested that information be obtained to characterize environmental conditions at the Proposed Maintenance and Storage Buildings project area. The goal of the PCI was to investigate the potential presence of contaminants in soil, soil gas, and ambient air at this location prior to construction.

A Draft PCI Work Plan (PCIWP) was submitted to the NYSDEC for review and comment in January 2025. Regulatory comments to the PCIWP were satisfactorily addressed and the PCIWP was approved by NYSDEC on September 15, 2025.

The PCI included community air monitoring during soil sampling; the advancement of shallow soil borings to assess and define subsurface soil conditions; laboratory analysis of surface, near-surface and subsurface soil samples; collection of one (1) soil gas sample and one (1) outdoor ambient air sample for laboratory analysis; and, a GPS survey of all PCI sampling locations within and in the vicinity of the Proposed Maintenance and Storage Buildings project area.

The PCI data was used in conjunction with data obtained from the 2019 Site Characterization Investigation (SCI) of the Site, completed by C.T. Male, and a PFAS Test Pit Investigation at the Proposed Maintenance and Storage Buildings project area completed by C.T. Male in 2024. Data

from these investigations is incorporated into this PCI report to provide a rigorous environmental assessment of the Proposed Maintenance and Storage Buildings project area.

This PCI Report consists of five (5) sections. Section 1 contains an introduction, which presents the purpose of the project and background information including the project work tasks, Site description, Site history, and discussion of previous Site investigations and evaluations. Section 2 relates to the study area investigation and provides a description of the various investigative tasks performed. Section 3 presents the physical characteristics of the Proposed Maintenance and Storage Buildings project area based on historical and PCI investigation data and includes an overview of the physical setting and presentation of the critical stratigraphy, hydrology, and hydrogeology of the Site and vicinity. Section 4 discusses the nature and extent of the contaminants of concern in the Proposed Maintenance and Storage Buildings project area and compares the analytical results to applicable regulatory standards, criteria, and guidance (SCG), as available. Section 5 presents a summary of the PCI findings, conclusions, and recommendations.

1.1 Modifications to the Work Plan

No modifications were made to the NYSDEC-approved PCIWP.

1.2 Purpose

The purpose of the PCI was to characterize the nature and extent of contamination that may be present in various media within the proposed building footprints and buffer areas of the proposed Maintenance and Storage buildings project area. The purpose of this PCI Report is to evaluate the data collected, identify the horizontal and vertical extent of impacted media within the area of anticipated construction impact, present the findings, and make recommendations for remediation, if necessary.

The PCI results will also be incorporated into the future site-wide Remedial Investigation (RI). This PCI Report will be appended to the RI Report (RIR) and Final Engineering Report (FER).

1.3 Site Background

1.3.1 Site Description and Features

The Site is located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York. The Site is approximately 510.8 acres and is identified as Dutchess County Tax Map Number 135689-6259-03-225301-0000 (see Figures 1 and 2).

The dimensions of the proposed equipment storage building are approximately 100 feet by 30 feet. The dimensions of the proposed salt / urea storage building are approximately 85 feet by

30 feet. An asphalt apron is proposed around the eastern portion of the equipment storage building and the northern portion of the salt / urea storage building. Proposed building foundations are expected to include slab-on-grade construction with typical spread footing foundations as depicted on Sheets S-101 and S-102 of Exhibit 1. The anticipated depth of foundation excavation proposed on contract drawing is limited to the upper six (6) to eight (8) feet. The proposed buildings are expected to be constructed of a combination of wood, concrete, and metal. One building will be an open shed style three-sided building used to house airport maintenance equipment, and the second building will be half open and half enclosed and will be used to store salt and urea. Neither building will be continuously occupied, and no septic systems are proposed for either building. Utility service to both buildings will be limited to electricity only, provided by an existing buried electrical service line located between the two proposed buildings. Silt fencing and/or silt filter sock(s) will be installed per Sheet CG-101 of Exhibit 1.

Contract specifications will direct the selected contractor to control dust, mud, and runoff resulting from construction operations in accordance with the CAMP, Fugitive Dust Mitigation Plan (per DER-10 Appendix 1B as applicable and as required) and the Stormwater Pollution Prevention Plan (SWPPP), as applicable. It is understood that the Contractor will be responsible for installing and maintaining all erosion control measures at access, fill areas, and staging areas during construction in accordance with the SWPPP.

According to the United States Geological Survey (USGS) Topographic Map of Poughkeepsie and Wappinger Falls, New York (2016), the Proposed Maintenance and Storage Buildings project area lies at approximately 150 feet Above Mean Sea Level (AMSL). The Proposed Maintenance and Storage Buildings project area slopes gently from east to west-northwest, with a steep drop-off adjacent to and west of the proposed equipment storage building. Surrounding land usage outside of the site consists of a mixture of residential dwellings and light industrial/commercial properties.

1.3.2 Site History

The proposed Maintenance and Storage Buildings project area is located directly west and south of the Aircraft Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE) building in the Hudson Valley Regional Airport (HVRA). The HVRA uses two (2) call signs: KPOU for its International Civil Aviation Organization code and POU for its International Air Transport Association and Federal Aviation Administration codes. It is a publicly owned, public-use, general aviation facility, serving the aviation needs of Dutchess County, metropolitan New York City area, and the southeastern region of New York State.

Based on review of historical aerial photographs, the Site was developed as an airport between 1936 and 1940. The Site has undergone several improvements since 1940, such as a runway

extension and the addition of hangars and various service buildings. Prior to being developed, most of the Site appears to have been used for agricultural purposes.

The airfield was originally established by the United States Department of Commerce to be used as an emergency field for air mail runs along the east coast. The field was taken over by the US Army Air Corps at the start of World War II. During that time, a control tower was added to the field, and the property was used primarily for training. In 1947, the field was deeded to Dutchess County, and the airport was managed under contract with limited development until 1975 when the Dutchess County Department of Aviation was created and a Commissioner was appointed to manage the airport.

1.3.3 Previous Investigations and Evaluation History

This section summarizes environmental investigations that have been conducted at the proposed project area since execution of the Order on Consent in March 2018. The investigations were conducted from 2018 to 2024 and focused primarily on the presence of the PFAS in various media. The following summarizes the two (2) pertinent previous investigations conducted at the Site.

Site Characterization Report, prepared by C.T. Male Associates, December 2019, Revised October 2021, August 2022, May, June, and October 2023, which is presented as Exhibit 2.

In general, the Site Characterization Investigation (SCI) included collection of surface soil, near-surface soil, subsurface soil, sediment, groundwater, stormwater, surface water, and potable drinking water samples from seven (7) Areas of Concern (AOCs) identified within the Site. The SCI also included the collection for laboratory analyses for PFAS of potable drinking water samples from on-site and off-site private potable water wells. The AOCs are depicted in Figure 2.

No surface soil, shallow soil or subsurface soil samples were collected from within the proposed Maintenance and Storage Building project work area as part of the SCI. The closest data to this proposed project area was obtained from boring MW-101 (refer to Figure 3), which revealed an estimated concentration of PFOA in subsurface soil (1.5 to 2 feet bgs, 1 to 2 feet bgs, and 8 to 9 feet bgs) as 0.132, 0.451, and 0.057 micrograms per kilogram (µg/kg) or parts per billion (ppb), respectively. These PFOA concentrations were below the current Unrestricted Use Interim Guidance Value (IGV) for PFOA in soil (0.66 ppb) (Exhibit 2, Table 10A and Figure 4). PFOS in shallow and deep subsurface soil at MW-101 (same intervals as above) was 2.27, 11.3, and 1.12 ppb, respectively. PFOS in shallow subsurface soils at this location exceeded the current Protection of Groundwater IGV, which is 1 ppb (Exhibit 2, Table 10A and Figure 4). No pesticides, PCBs or inorganic analytes in subsurface soil exceeded Unrestricted Use SCOs at boring MW-101).

Surface water and sediment was collected from Outfall 002, which is located approximately 350 feet northwest and downgradient of the proposed project work area (refer to Figure 2). PFOA and PFOS in surface water was 2.39 nanograms per liter (ng/l) or parts per trillion (ppt) and 13.4 ppt, respectively (Exhibit 2, Table 42, and Figure 8). The current ambient water guidance value for PFOA and PFOS in surface water are 6.7 ppt and 2.7 ppt, respectively. PFOA and PFOS in sediment were estimated at 0.109 µg/kg or ppb and 1.09 ppb, respectively (Exhibit 2, Table 42A and Figure 10). New York State does not currently have any sediment standards for PFAS.

No groundwater analytical results were obtained from the proposed Maintenance and Storage Building project work area because proposed construction is not anticipated to reach groundwater depth. A groundwater sample that was collected from monitoring well MW-101 in AOC-4, located approximately 500 feet south of the proposed project work area during the SC, exhibited PFOA and PFOS in groundwater at 11.3 ppt and 68.1 ppt, respectively (Exhibit 2, Table 10 and Figure 6). The current ambient water guidance value for PFOA and PFOS in groundwater are 6.7 ppt and 2.7 ppt, respectively. Although non-detect for pesticides and PCBs at MW-101, the localized presence of iron (7,690 ppb) and manganese (1,657 ppb) in groundwater exceeded their combined groundwater standard of 300 ppb (Exhibit 2, Table 13, and Figure 7).

Summary Report – PFAS Test Pit Investigation at Proposed Maintenance and Storage Buildings, prepared by C.T. Male Associates, February 7, 2024, which is presented as Exhibit 3.

The investigation in the vicinity of the Maintenance and Storage Building, north of AOC-4, included the advancement of five (5) test pits to aid in the collection of five (5) shallow and two (2) subsurface soil grab samples for laboratory analyses of PFAS. Although PFAS detections were encountered, PFOS and PFOA detections in the soil samples did not exceed Unrestricted Use IGVs.

It is noted that during this previous test pit investigation within the Maintenance and Storage Building project area, water was observed at a shallow depth. This water was interpreted to be perched water associated with the adjacent stormwater catch basin and/or roof drain leaders from the adjacent ARFF/SRE building and is not characteristic of true groundwater.

1.3.4 Contaminants of Concern

The objective of this PCI is to define the nature and extent of soil, soil gas, and groundwater (if encountered) contaminants within the area of anticipated construction for the proposed buildings, as depicted on project design drawings (Exhibit 1). Groundwater is not anticipated to be affected by the proposed construction excavation work unless perched groundwater is encountered. Perched groundwater was not encountered during this PCI. Based on the findings of the test pit investigation, the potential primary contaminants of concern for the proposed

project area have been identified as PFAS in surface soil, shallow soil, and groundwater, if encountered.

2.0 STUDY AREA INVESTIGATION

2.1 Pre-Construction Investigation

The PCI was conducted on October 16, 2025, in accordance with the NYSDEC-approved PCIWP.

2.1.1 Summary of Investigative Tasks

The following table (Table 2.1.1) presents a summary of the completed PCI tasks.

TABLE 2.1.1: SUMMARY OF PCI TASKS

PCI Task	Summary
Collection of Surface Soil Samples	Ten (10) surface soil samples were collected from 0.0 to 0.17 feet below ground surface (bgs) within the proposed project work area. The surface soil samples were screened for subjective Field Evidence of Contamination (FEC) and submitted for subsequent laboratory analyses. See Section 2.1.2 for a detailed summary.
Advancement of Soil Borings	Eleven soil borings were completed within the proposed project work area to assess subsurface conditions, to aid in the collection of soil samples for subjective FEC screening and laboratory analyses, and one (1) soil boring served as the pilot borehole for the installation of a soil gas monitoring point. Subsurface Exploration Logs and Organic Vapor Headspace Analysis Logs are provided in Appendices A and B, respectively. See Section 2.1.3 for a detailed summary.
Subsurface Soil Sampling	Ten (10) shallow soil and thirteen (13) subsurface soil samples were collected for subjective FEC screening and potential laboratory analyses from the on-site soil borings. See Section 2.1.4 for a detailed summary.
Soil Gas Assessment	One (1) soil gas and one (1) ambient air sample were collected for laboratory analysis. See Section 2.1.5 for a detailed summary.
Survey of Sampling Locations	A horizontal GPS survey was completed to locate and apply appropriate coordinates of the various PCI environmental monitoring points listed above. See Section 2.1.6 for a detailed summary.
Investigation Derived Wastes (IDW)	PCI IDW was placed in New York State Department of Transportation (NYSDOT)-approved 55-gallon drums and will be disposed of off-Site at a permitted disposal facility. See Section 2.1.9 for a detailed summary.

2.1.2 Surface Soil Sampling

Ten (10) surface soil samples (0.0 – 0.17 feet bgs) were collected at locations shown as B-30 to B-39 on Figure 3. The sampling scheme was developed to assess soil conditions in the proposed construction footprint and have been distributed across the project area to provide representative coverage across the proposed work area and adjacent buffer areas. Sampling locations B-30 to B-39 were advanced to facilitate the collection of soil samples and to characterize the local geology and environmental quality of soils within the proposed work area. A surface soil sample was collected from soil boring location PCI-B-01, at the proposed Contractor staging/spoils area (as depicted on Figure 2), during the previous PCI completed

for the nearby Sky Harbour North Hangar project. The analytical results for the surface soil sample collected at PCI-B-01 reported no PFAS exceedances.

The intent of the surface soil sampling was to characterize surface soil located immediately beneath the vegetative layer of the proposed construction area. The spatial distribution of the sampling locations was selected to provide an overall assessment of the environmental quality of surface soils potentially disturbed during construction activities, including PFAS.

The surface soil samples were collected from 0 to 2-inches below the vegetative layer from borings completed by Core Down Drilling, Inc. (CDD) via direct push Geoprobe® techniques and 5-foot-Macro-Core® sampler, with the exception of B-34 and B-35, which were collected using a field decontaminated (Alconox and PFAS-free water wash followed by a PFAS-free water rinse) stainless steel hand auger. The surface soil samples were screened and evaluated in the field for subjective FEC and placed in laboratory supplied sampling containers and the containers were placed in a laboratory provided cooler containing wet ice. A chain-of-custody form was completed and accompanied the samples throughout transport to the analytical laboratory.

Quality Assurance / Quality Control (QA/QC) samples were also collected. The QA/QC samples consisted of a duplicate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), and equipment rinse blank. The analytical laboratory reports are provided in Appendix C.

2.1.3 Advancement of Soil Borings

Eleven PCI soil borings (B-30 to B-39 and SG-1) were completed via Geoprobe® and hand auger techniques within the proposed project work area (Table 2.1.3). The local subsurface geology, hydrogeology, and environmental quality of subsurface soils were characterized via logging, FEC screening, and subsequent laboratory analyses of select soil samples. The location of the borings is presented in Figure 3.

On October 16, 2025, CDD completed ten (10) soil borings via direct-push Geoprobe® with a 5-foot-Macro-Core® sampler, and two (2) soil borings by hand auger. Subsurface soil was collected at each Geoprobe soil boring location at five-foot intervals with a five-foot long stainless-steel Macro-Core® sampler fitted with disposable acetate liners. At B-34 and B-35, soil samples were collected in one-foot intervals via a decontaminated stainless-steel hand auger. Each recovered soil sample was assessed and screened for subjective FEC. The subsurface soil descriptions are presented in the Subsurface Exploration Logs in Appendix A. The FEC screening results are presented in the Organic Vapor Headspace Analysis Logs in Appendix B. Soil classifications and sample collection methods were in general accordance with the PCIWP.

Table 2.1.3 summarizes the PCI soil boring program.

TABLE 2.1.3: PCI SOIL BORING PROGRAM			
Boring ID	**Boring Depth (feet bgs) ***	**Drilling Method**	**Comments**
B-30	10	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-31	10	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-32	7	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-33	5	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-34	2	Hand Auger	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-35	2	Hand Auger	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-36	5	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-37	5	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-38	5	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
B-39	5	Direct-Push	Fill and native soil samples were collected for subjective FEC and laboratory analyses.
SG-1	5	Direct-Push	Fill and native soil samples were collected for subjective FEC.

* "feet bgs" denotes feet below ground surface.

2.1.4 Shallow Soil and Subsurface Soil Sampling

Shallow soil (0.17 – 1.0 feet bgs) and subsurface fill and native soil samples (greater than 1.0 foot bgs) were continuously collected from grade to the termination depths of the soil borings B-30 through B-39 and SG-1, to evaluate the environmental quality of subsurface fill materials and native soil to further characterize subsurface conditions. Subsurface soil samples collected from B-30 (9 – 10′ bgs) and B-32 (6 – 7′ bgs) were analyzed for:

- Target Compound List (TCL) Volatile Organic Compounds (VOCs) plus 10 Tentatively Identified Compounds (TICs), TCL Semi-Volatile Organic Compounds (SVOCs) plus 20 TICs, pesticides, and Polychlorinated Biphenyls (PCBs);
- Target Analyte List (TAL) metals (including trivalent chromium and hexavalent chromium);
- Cyanide;
- 1,4-Dioxane; and,
- PFAS.

The above analyses will collectively be referred to as the "Full Suite of Parameters."

Subsurface samples collected from the 1 to 2-foot intervals at each soil boring location were collected, transported to the analytical laboratory, and held for PFAS laboratory analysis depending on the results of the overlying surface and/or shallow soil samples. Eight (8) of the ten (10) samples held did not require analysis based on the analytical results of the overlying soil samples. Subsurface samples collected at B-34 (1.0 to 2.0-foot interval) and B-35 (1.0 to 2.0-foot interval) were analyzed for PFAS based on the results of the overlying surface and shallow soil samples collected from their respective borings.

The samples were collected in accordance with the PCIWP. Table 2.1.4 summarizes soil sampling intervals and the laboratory analyses performed for each sampled interval.

TABLE 2.1.4: PCI SOIL SAMPLING PROGRAM

Boring ID	Sample Depth (Feet bgs)	Media Sampled	Laboratory Analyses Performed
B-30	0.0 - 0.17	Surface Soil (just below vegetation)	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
	9.0 - 10.0	Subsurface Soil	Full Suite of Parameters (excluding PFAS)
B-31	0.0 – 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
	9.0 - 10.0	Subsurface Soil	Collected and PFAS Held
B-32	0.0 – 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
	6.0 - 7.0	Subsurface Soil	Full Suite of Parameters (excluding PFAS)
B-33	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
B-34	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	PFAS
B-35	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	PFAS
B-36	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
B-37	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
B-38	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held
B-39	0.0 - 0.17	Surface Soil	PFAS
	0.17 - 1.0	Shallow Soil	PFAS
	1.0 - 2.0	Subsurface Soil	Collected and PFAS Held

TABLE 2.1.4: PCI SOIL SAMPLING PROGRAM			
Boring ID	**Sample Depth (Feet bgs)**	**Media Sampled**	**Laboratory Analyses Performed**
SG-1	5.0	Soil Gas	VOCs

Boring details (including total depth, maximum photoionization detector (PID) readings/field observations of contamination (FEC)) and their purpose are summarized in Table 2.1.4a. Groundwater was not encountered during the advancement of soil borings for this PCI.

TABLE 2.1.4a: PCI SOIL BORING DETAILS			
Boring ID	**Boring Depth (feet bgs)**	**Maximum PID Reading /FEC Observation**	**Proposed Area Use**
B-30	10	0.1 ppm / NS	Characterize Equipment Storage Building Footprint
B-31	10	0.1 ppm / NS	Characterize Equipment Storage Building Footprint
B-32	7	0.0 ppm / NS	Characterize Salt / Urea Storage Building Footprint
B-33	5	0.1 ppm / NS	Characterize Southern Buffer of Equipment Storage Building Footprint
B-34	2	0.0 ppm / NS	Characterize Western Buffer of Equipment Storage Building Footprint and Silt Fence / Filter Sock Installation Area
B-35	2	0.0 ppm / NS	Characterize Western Buffer Storage Building Footprint and Silt Fence / Filter Sock Installation Area
B-36	5	0.1 ppm / NS	Characterize Southern Buffer of Equipment Storage Building Footprint and Silt Fence / Filter Sock Installation Area
B-37	5	0.0 ppm / NS	Characterize Western Buffer of Salt / Urea Storage Building and Silt Fence / Filter Sock Installation Area
B-38	5	0.1 ppm / NS	Characterize Southern Buffer of Salt / Urea Building Footprint and Silt Fence / Filter Sock Installation Area
B-39	5	0.0 ppm / NS	Characterize Eastern Buffer of Salt / Urea Storage Building and Silt Fence / Filter Sock Installation Area
SG-1	5	0.0 ppm / NS	Characterize Soil Gas

Feet bgs denotes feet below ground surface.
NS = No odor, no staining.

2.1.5 Soil Gas Assessment

The soil gas assessment included the collection of one (1) soil gas sample within the proposed Salt/Urea Storage Building footprint (the only partially enclosed building) and the collection of one (1) outdoor ambient air sample. No soil gas sample was taken with the footprint of the proposed Equipment Storage Building, as it is not an enclosed structure (only three (3) sided). The sampling identifications and sampling locations are depicted in Table 2.1.5 below, and in Figure 3.

TABLE 2.1.5: PCI SOIL GAS ASSESSMENT PROGRAM

Sampling Location	Soil Gas Sample Identification	Outdoor Air Sample Identification
SG-1	SG-1	---
Outdoor Ambient	---	SG-2

Both samples were collected over a 24-hour sampling period and submitted to the laboratory for analysis for VOCs by EPA Method TO-15. The analytical laboratory reports are provided in Appendix C. The Soil Gas Point Construction Log and Ambient Air Sampling Log are presented in Appendix D.

2.1.6 Survey of Sampling Locations

Locations of soil borings and the soil gas monitoring point were located in the field via GPS.

2.1.7 Data Usability Summary Report

Each Data Usability Summary Report (DUSR) was prepared by a certified data validator, Environmental Data Services, Inc. (EDS). Analytical data obtained during this PCI was evaluated for conformance to data quality standards for decision-making purposes. The DUSRs indicate that no data packages were rejected, so this data meets proposed use criteria. The DUSRs for each laboratory package are provided in Appendix E. Data qualifiers have been included in Table 2 as applicable.

2.1.8 Community Air Monitoring

Community Air Monitoring was conducted in accordance with the Community Air Monitoring Program (CAMP) and included the measurement of airborne particulates and organic vapors during completion of the soil borings.

Two (2) DustTrak 8530 dust monitors were used to measure airborne particulates during the drilling activities, which occurred on October 16, 2025. One (1) dust monitor was placed in the

vicinity of the ARFF/SRE building, and one (1) dust monitor was south of the proposed Salt / Urea Storage Building footprint. During the drilling activities, these monitors also functioned as upwind and downwind monitoring stations.

The particulate action level of 150 $\mu g/m^3$ was not exceeded in either of the dust monitors during any of the continuous 15-minute averaging periods of drilling activities. Excel spreadsheets documenting dust monitoring readings at one (1) minute intervals during ground intrusive work are retained in C.T. Male's electronic project directory and are included as Appendix F.

Organic vapors in ambient outdoor air were continuously monitored at the two (2) CAMP stations. Elevated organic vapors were not identified during the ground intrusive work.

2.1.9 Investigation Derived Wastes

Investigation Derived Wastes (IDW) from the PCI included decontamination water generated from decontamination of drilling equipment during soil boring advancement. This water was containerized within one (1) NYSDOT approved 55-gallon steel drum, labeled as required. The PCI IDW were sampled by collecting a disposal characterization sample from the decontamination water. This waste will remain on-site pending off-Site disposal during the upcoming RI. Waste disposal manifests will be provided to NYSDEC upon removal and disposal of this waste.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

3.1 Results of the Study Area Investigation

C.T. Male completed multiple investigative tasks to characterize the proposed project work area. The results of the PCI tasks are supplemented with data contained in the 2019 Site Characterization Report and the 2024 TPI Report which are presented as Exhibits 2 and 3, respectively. Subsurface conditions at the proposed project work area were also characterized utilizing published literature including soil, bedrock, and aquifer mapping to further assess the physical characteristics of the proposed project work area, which are summarized in the following sections.

3.1.1 Surface Features

The proposed project work area is currently improved with one (1) office/storage building referred to as the Aircraft Rescue and Fire Fighting / Snow Removal Equipment Building (ARFF/SRE building) in the mid-northeaster portion of the proposed project work area and paved parking and driveway areas adjacent/west and south of the building (Figure 3). The building, constructed in 2019, is occupied by HVRA staff.

According to the United States Geological Survey (USGS) Topographic Map, the proposed project work area lies at approximately 150 feet AMSL (Figure 1). The proposed work area is flat and the surrounding area slopes gently from west to northwest with a steep drop-off adjacent to /west of the proposed Equipment Storage Building.

3.1.2 Surface Water Bodies and Wetlands

There are no water bodies and/or wetlands within the proposed project work area. Wappinger Creek is located approximately 400 feet northwest of the proposed project work area and flows south-southwest, away from the proposed project work area, towards the Hudson River (Figures 1 and 2).

3.1.3 Surface Drainage Patterns

Precipitation infiltrates vegetated areas of the proposed project work area. Stormwater catch basins are present within the paved areas surrounding the ARFF/SRE building and are connected to an outfall located northwest of the ARFF/SRE building and northeast of the proposed Equipment Storage Building (Figure 3). Surface drainage is directed towards an existing stormwater drainage swale located to the south of the proposed project work area.

3.1.4 Site Soils and Bedrock

Local soils are mapped by the United States Department of Agriculture (USDA) Web Soil Survey primarily as udorthents, or gravelly loam, derived from glaciofluvial sand or glaciofluvial sand and gravel (outwash) soils deposited along the ice margin. Udorthents are described by the USDA as well-drained soils that have often been disturbed or reworked by cutting or filling in areas that are covered by buildings or pavement. The Wappinger loam and Pawling Silt loam are both mapped by the USDA in the proposed project work area and are siltier, fine-grained loams that are derived from alluvial, glaciofluvial, and glaciolacustrine sediments.

The proposed project area expresses variations in both overburden soils and bedrock. A summary of the Critical Site Stratigraphy (CSS), as encountered during the PCI, is summarized in Table 3.1.4.

TABLE 3.1.4: SUMMARY OF CRITICAL SITE STRATIGRAPHY

Boring I.D.	Fill (Reworked Glaciofluvial Stratified Sand)	Glaciofluvial Stratified Sand	Fill (Reworked Glacial Till)	Glacial Till
B-30	0.0 – 6.0′ [6.0′]	---	---	6.0 – >10.0′ [>4.0′]
B-31	0.0 – 0.5′ [0.5′]	---	0.5 – 6.0 [5.5′]	6.0 – >10.0 [>4.0′]
B-32	0.0 – 0.5′ [0.5′]	0.5 – 4.5′ [4.0′]	---	4.5 – >7.0′ [>2.5′]
B-33	0.0 – 0.5′ [0.5′]	0.5 – >5.0′ [>4.5′]	---	---
B-34	0.0 – >2.0′ [>2.0′]	---	---	---
B-35	0.0 – >2.0′ [>2.0′]	---	---	---
B-36	0.0 – 1.0′ [1.0′]	1.0 – >5.0′ [>4.0′]	---	---
B-37	0.0 – >5.0′ [>5.0′]	---	---	---
B-38	0.0 – >5.0′ [5.0′]	---	---	---
B-39	0.0 – >5.0′ [>5.0′]	---	---	---
SG-1	0.0 – >5.0′ [>5.0′]	---	---	---

Note: Unit thickness reflected in brackets.

Overburden soil primarily consists of native and reworked well sorted, stratified, and loose to medium dense glaciofluvial-derived sands. Gravelly and/or silty sections of the glaciofluvial sand unit also exist but are less extensive. The reworked glaciofluvial unit was encountered in each PCI boring while the glaciofluvial sand unit was greater than four (4) feet in thickness at three (3) of the deeper PCI borings (B-32, -33, and -36) as its base was not encountered at two (2) of the PCI borings (B-33 and -34). No glaciofluvial stratified sands were observed in shallow borings B-30, -31, -34, -35, -37, -38, -39, and SG-1. Deeper sections of soil beneath the glaciofluvial sand unit were identified at borings B-30, -31, and -32 consist of glacial till - a poorly sorted diamict of highly variable grain size within a silt and clay matrix. The glacial till appeared as weathered, dry, and only moderately dense in most instances.

The PCI soil borings were limited to overburden soil depths and bedrock was not encountered during on-site drilling.

3.1.5 Groundwater Occurrence

Groundwater was not encountered during the advancement of the 11 soil borings (Figure 3). The water table of the unconfined unconsolidated aquifer (shallow hydrogeologic unit) was not encountered during advancement of soil borings for the PCI. Groundwater flow is inferred to flow to the west-northwest toward Wappinger Creek.

According to the map entitled "Unconsolidated Aquifers in Upstate New York, Lower Hudson Sheet" (Edward F. Bugliosi and Ruth A. Trudell, 1988), the Site is not located within a primary aquifer. According to the USEPA Designated Sole Source Aquifers mapping, the property is not located in a mapped sole source aquifer.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 Proposed Project Area Contaminants

Analytical results indicate that impacts in the proposed project area are localized, primarily consisting of low concentrations of PFAS in surface soil, select metals in localized subsurface soils, and VOCs in soil gas in the vicinity of the proposed Salt/Urea storage building. In addition, low PFAS concentrations in shallow soil and subsurface soil in the vicinity of the proposed silt fence on the northwestern portion of the proposed project work area has been identified. A summary of soil sampling results is provided in Table 1. A map of metals and PFAS in soil exceeding applicable IGVs is included in Figure 5. A summary of soil gas and outdoor air sampling results are provided in Table 2, and soil gas detections are presented in Figure 6.

4.2 Determination of Project Standards, Criteria and Guidance (SCGs) and Interim Guidance Values (IGVs)

Project SCGs were established to evaluate analytical results for media types sampled during this PCI and during previous investigations. The media types include surface soil, shallow soil, subsurface soil, and soil gas.

Surface soil, shallow soil and subsurface soil sampling analytical results are compared to NYSDEC Soil Cleanup Objectives (SCOs) for Unrestricted Use (UUSCO), Commercial Use (CUSCO), and Protection of Groundwater (PGSCO) sites promulgated as NYSDEC 6 NYCRR Part 375 (effective December 31, 2025) where applicable, and NYSDEC guidance document CP-51 for applicable analytes. The PFAS compounds, PFOA and PFOS, are compared to Interim Guidance Values (IGVs) set forth for Unrestricted Use (UUIGV), Commercial Use (CUIGV), and Protection of Groundwater (PG IGV) for PFOA and PFOS as promulgated in the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs, Guidance Document, dated April 2023.

There are no regulatory guidance values applicable to the soil gas results obtained as part of the PCI.

4.3 Contaminants of Concern Per Media Type

The following Table 4.3 summarizes contaminants of concern for each media type sampled and includes:

- Contaminants of concern in surface soil, subsurface soil, and soil gas.

TABLE 4.3 SUMMARY OF CONTAMINANTS OF CONCERN PER MEDIA

Compound	Surface Soil	Shallow Soil	Subsurface Soil	Soil Gas
2-Butanone				✓
Acetone				✓
PFOS	✓	✓		
PFOA		✓	✓	
Copper			✓	
Nickel			✓	

4.4 Surface Soil Sampling

4.4.1 General

Ten (10) surface (0.0 - 0.17 feet bgs) soil samples were collected for laboratory analysis for PFAS. The sample locations are identified as B-30 to B-39 on Figure 3. One (1) localized PFOS exceedance of the Protection of Groundwater guidance value (PG IGV) was observed in surface soil at boring B-32 as summarized in Section 4.4.2. Analytical results for the remaining nine (9) surface soil samples were below the applicable PFAS IGVs.

An analytical summary is contained in Table 1 and the analytical laboratory report is provided in Appendix C.

4.4.2 PFAS Exceeding IGVs In Surface Soil

Analytes that exceed PFAS IGVs are shown in Figure 5 (Analytes in Soil Exceeding SCGs/IGVs Map). PFOS exceeded its respective IGV at one (1) surface soil sample location. At B-32 (0.0 - 0.17 feet bgs), the 1.43 ppb result exceeded the UU IGV of 0.88 ppb and the PG IGV of 1 ppb but not the CU IGV (440 ppb). It should be noted that the underlying shallow (0.17 – 1.0 feet bgs) soil sample collected at B-32 reported a PFOS result of 0.197 ppb, which is below its respective UU IGV of 0.88 ppb.

4.5 Shallow Soil Sampling

4.5.1 General

Ten (10) shallow (0.17 – 1.0 feet bgs) soil samples were collected for PFAS laboratory analysis. The shallow soil samples were obtained from borings B-30 to B-39 (Figure 3). Analytical results for eight (8) of the 10 shallow soil samples were below PFAS IGVs.

Analytical summary tables are presented as Table 1 while the analytical laboratory report is provided in Appendix C.

4.5.2 Analytes Exceeding PFAS IGVs in Shallow Soil

Analytes that exceeded PFOA or PFOS IGVs are presented in Figure 5. PFOA exceeded its respective IGV at two (2) shallow soil sample locations (B-34, 0.17 – 1.0'; and B-35, 0.17 – 1.0') and PFOS exceeded its respective IGVs at one (1) shallow soil sample location (B-34, 0.17 – 1.0').

PFOA and PFOS exceeded IGVs in the shallow soil at boring B-34. PFOA and PFOS were detected at 0.841 ppb and 1.03 ppb, respectively, exceeding the PG IGVs for PFOA (0.8 ppb) and PFOS (1 ppb).

The PFOA detection in shallow soil collected from boring B-35 was 0.678 ppb, which slightly exceeded the UU IGV of 0.66 ppb for PFOA. PFOS in shallow soil was detected below the UU IGV at this location.

No other PFAS in shallow soil exceeded IGVs in the proposed project work area.

4.6 Subsurface Soil Sampling

4.6.1 General

Thirteen (13) subsurface soil samples (1.0 feet bgs or deeper) were held for PFAS analysis pending the results of the overlying soil samples. Ten (10) of the subsurface soil samples were collected from 1.0 to 2.0 feet bgs at each boring (B-30 to B-39) but eight (8) of these subsurface soil samples did not require laboratory analysis based on the overlying surface soil and/or shallow soil sample PFAS results.

Two (2) of the subsurface soil samples (B-30, 9.0 – 10.0 feet bgs and B-32, 6.0 – 7.0 feet bgs) were collected for laboratory analysis for the full suite of parameters while one (1) additional subsurface soil sample (B-31, 9.0 – 10.0 feet bgs) was collected for potential PFAS laboratory analyses only. Each of the three (3) subsurface samples held for PFAS analysis by the laboratory did not require further analysis. The analytical laboratory reports are provided in Appendix C.

4.6.2 Analytes Exceeding SCGs or IGVs In Subsurface Soil

Analytes that have exceeded the SCGs or IGVs are depicted in Figure 5 and are discussed below. No detections of PCBs, pesticides, or cyanide were reported in subsurface soil and there were no exceedances of VOCs or SVOCs in subsurface soil.

Metals Results

One (1) exceedance above the UU SCO for copper in subsurface soil was observed at B-32 (6 - 7 feet bgs). The UU SCO for copper is 50 ppm; the subject result was 51.8 ppm, which slightly exceeded its respective UU SCO but was below the PG SCO (1,720 ppm) and CU SCO (280 ppm) for copper.

One (1) exceedance above the UU SCO for nickel in subsurface soil was also identified at B-32 (6 - 7 feet bgs). The UU SCO for nickel is 30 ppm; the subject result at B-32 (6 - 7 feet bgs) for nickel was 42.2 ppm which is below its respective PG SCO (130 ppm) and CU SCO (320 ppm).

No other metals in subsurface soils collected from B-30 (9 – 10 feet bgs) or B-32 (6 – 7 feet bgs) exceeded SCOs in the proposed project work area.

PFAS Results

Eleven (11) of the 13 subsurface soil samples collected from B-30 through B-39 did not require analysis based on the analytical results of the overlying surface soils or shallow soils.

One (1) slight exceedance above the UU IGV for PFOA (0.66 ppb) was observed at subsurface soil sample B-34, 1 – 2 feet bgs. The PFOA result of 0.724 ppb was below its respective PG IGV (0.8 ppb) and Commercial/Industrial Use IGV (600 ppb) for PFOA.

The subsurface soil sample B-35, 1 – 2 feet bgs exhibited no detection of PFOS and a PFOA concentration of 0.202 ppb which is below the UU IGV for PFOA.

4.10 Soil Gas and Ambient Air

The soil gas assessment included the collection of one (1) soil gas sample from within the proposed project work area and the collection of one (1) outdoor ambient air sample. Soil gas data is useful for building the conceptual site model and identification of contaminants of concern for the Site but is not intended to eliminate soil vapor intrusion as a potential exposure pathway.

The soil gas sampling identifications and sampling locations are summarized in Table 4.10.1 below and are depicted in Figure 3. A soil gas sampling log, which includes tracer gas and seal testing information, for the PCI soil gas sample has been included in Appendix D, Soil Gas

Sampling Point Construction Log and Soil Gas Sampling Log. A summary of the soil gas and ambient air sample is included in Table 4.10.1 below and validated analytical results are summarized in Table 2 and depicted in Figure 6.

TABLE 4.10.1: SOIL GAS/AMBIENT AIR ASSESSMENT PROGRAM		
Sampling Location	**Soil Gas Sample Identification**	**Outdoor Air Sample Identification**
SG-1	SG-1	---
Outdoor Ambient	---	SG-2

One (1) soil gas point was installed on October 16, 2025, to an approximate depth of five (5) feet bgs, using Geoprobe® direct push methods. A new 6-inch stainless steel implant was installed approximately five (5) feet bgs and connected to new nylon tubing which extended above grade. Following installation, the soil gas point was given adequate time to equilibrate with the soil gas prior to sampling.

On October 17, 2025, a helium shroud was constructed at SG-1 using new materials including a 5-gallon HDPE bucket, 4-mil plastic sheeting, and moist VOC-free pottery clay. The laboratory supplied 6-liter (6L) SUMMA canister was equipped with a flow regulator and shut-in leak kits were used to confirm there was no pressure lost along the sample train. A 99.99% helium gas was introduced into the shroud, and the concentration was recorded from the shroud and sample tubing using an MGD-2002 helium leak detector. The concentration of helium was recorded in percent (parts per hundred) or ppm depending on the concentration recorded. The tracer gas concentration within the sample tubing was consistently below 10% of the shroud concentration as recommended in Section 2.7.5, paragraph 3 of the NYSDOH 2006 guidance document.

No soil gas standards or guidance values exist. A soil vapor intrusion assessment is not planned for the proposed buildings based on the buildings' configurations: the Equipment Storage Building is not enclosed and while the Salt / Urea Building is partially enclosed, that portion is not intended for human occupancy, as it will contain piles of salt and solid-state urea.

Accordingly, one (1) soil gas sample (SG-1) was collected within the proposed footprint of the Salt / Ureas Storage Building. Eighteen (18) VOCs were detected with the highest concentrations of 2-Butanone, acetone, ethanol, and tertiary butyl alcohol. In general, the VOCs detected at highest concentration in soil gas do not correlate to the VOC analytical results in soil or outdoor air.

TABLE 4.10.2: VOCs DETECTED IN SOIL GAS AND AMBIENT AIR		
Compound	**Soil Gas Concentration, Sample SG-1 (µg/m³)**	**Ambient Air Concentration, Sample SG-2 (µg/m³)**
VOCs		
1,3-Dichlorobenzene	1.85 – 1.93	ND
2,2,4-Trimethylpentane	11.1 – 11.6	ND
2-Butanone	1,020 – 1,150	ND
2-Hexanone	ND – 4.96	ND
Acetone	694 – 786	6.53
Benzene	2.78 – 3.01	ND
Carbon disulfide	3.11 – 3.58	ND
Chloromethane	0.601 – 0.789	1.01
Cyclohexane	1.75 – 1.78	ND
Dichlorodifluoromethane	1.98 – 2.04	2.24
Ethanol	166 – 230	ND
Heptane	3.17 – 4.63	ND
Isopropanol	3.64 – 4.62	7.01
n-Hexane	5.85 – 5.92	1.95
p/m-Xylene	ND – 1.76	ND
Tertiary butyl Alcohol	9.7 – 12.7	ND
Tetrachloroethene	ND – 2.03	ND
Toluene	7.12 J – 15.1 J	ND

ND denotes non-detect, as the analyte was not detected at or above the reporting limit.
J = analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated.

As depicted in the table above and in Table 2, 18 VOCs were detected in soil gas. Two (2) of these compounds, chloromethane and isopropanol, were detected at lower concentrations than detections in the ambient air sample (SG-2). Of note, the initial detection of 2-Butanone in SG-1 exceeded the range of calibration and required the sample to be re-extracted. The VOCs detected in soil gas were not detected in soil samples collected in the proposed project area, except for acetone which was detected in one (1) sample (B-30_9.0-10.0' bgs) at a concentration below UU SCOs. Additionally, no odor or elevated organic vapor headspace readings were noted for any of the soil samples screened.

Five (5) VOCs were detected in the outdoor air sample (SG-2), collected in accordance with the SOW. VOCs with the highest concentrations were acetone, isopropanol, and dichlorodifluoromethane. This sample exhibited markedly lower VOCs when compared to the soil gas results. For example, Total VOCs at SG-2 were 19 µg/m³ while the Total VOCs in soil gas ranged from 2,082 µg/m³ (FD01) to 2,093 µg/m³ (SG-1).

4.11 Data Usability Summary Report

The DUSRs for the PCI analytical data packages were completed by Environmental Data Services, Inc. There was one rejection of data associated with the field duplicate sample collected at B-30_9.0-10.0 for selenium (Laboratory Package L2566083). It is noteworthy that the parent sample did not have a rejection associated with the data. Therefore, this data rejection does not adversely affect the project data usability. The DUSRs for each laboratory package is provided in Appendix E.

4.12 Summary of Extent of Contaminants of Concern

Analytical results for surface soil, shallow soil, and subsurface soil are compared to applicable SCGs or IGVs summarized in Section 4.2. Table 4.12 lists those compounds or analytes that exceeded project specific SCGs or IGVs along with the frequency that the applicable SCG was exceeded per analyzed media. Since regulatory standards or guidance values for soil gas contaminants are not currently available, soil gas results were only reviewed qualitatively.

TABLE 4.12: ANALYTES EXCEEDING SCGs/IGVs PER MEDIA TYPE

Media	Class	Contaminant of Concern	Detected Concentration Range	Frequency of Exceeding SCG/IGV	Applicable SCG/IGV (1)
Surface Soil, [0.0 – 0.17′ bgs]	PFAS	PFOS	ND to 1.43 µg/kg (ppb)	1 of 10	Unrestricted Use = 0.88 µg/kg (ppb) Protection of Groundwater = 1 ppb
Shallow Soil / Shallow Subsurface Soil, [0.17 – 2.0′ bgs]	PFAS	PFOS	ND to 1.03 ppb	1 of 12	Unrestricted Use = 0.88 ppb Protection of Groundwater = 1 ppb
		PFOA	0.113 J to 0.841 ppb	3 of 12	Unrestricted Use = 0.66 ppb Protection of Groundwater = 0.8 ppb
Subsurface Soil, [>1.0′ bgs]	Metals	Copper, Total	22.2 J to 51.8 J mg/kg (ppm)	1 of 2	Unrestricted Use SCO = 50 mg/kg (ppm) Protection of Groundwater SCO = 1,720 ppm
		Nickel, Total	18.8 to 42.2 ppm	1 of 2	Unrestricted Use SCO = 30 ppm Protection of Groundwater SCO = 130 ppm

TABLE 4.12: ANALYTES EXCEEDING SCGs/IGVs PER MEDIA TYPE					
Media	**Class**	**Contaminant of Concern**	**Detected Concentration Range**	**Frequency of Exceeding SCG/IGV**	**Applicable SCG/IGV (1)**
Soil Gas	VOCs	2-Butanone Acetone Ethanol	1,020 to 1,150 µg/m^3 694 to 786 µg/m^3* 166 to 230 µg/m^3	NA	NA

Table Notes:

(1) *For Surface, Shallow and Subsurface Soils:* NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs, Subpart 375-6 Restricted (Unrestricted, Commercial, and Protection of Groundwater) Use Soil Cleanup Objectives for soils, effective December 31, 2025. Samples analyzed for PFAS are compared to Interim Guidance Values for Unrestricted Use, Protection of Groundwater, and Commercial Use.

For Soil Gas: No soil gas standards or guidance values exist.

J = analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated.

4.13 Interim Remedial Measure Work Plan

The nature and extent of COCs found in the project work area, as discussed in the preceding Sections 4.3 to 4.10, have been sufficiently characterized within the areas of anticipated disturbance for construction of the two (2) proposed buildings. The need for an Interim Remedial Measure (IRM) during construction was assessed, with consideration of the following:

- Contaminant concentrations detected.
- Configuration of proposed buildings: one (1) building is non-enclosed and one (1) building partially enclosed to store salt and urea with no human occupancy.
- Off-site disposal of soil from construction excavation is not anticipated, as excess soil excavated from building construction will be placed in the embankment fill area immediately northwest of the proposed Equipment Storage Building. A Request to Import/Reuse Fill or Soil form will be submitted for NYSDEC approval prior to the import or reuse of soil on the Site.
- The proposed project work area is inaccessible to the public as it is located within the secure airport maintenance facility.

Based on this assessment, an IRM Work Plan (IRMWP) is not proposed. Refer to Section 5.0 below for further details of this assessment.

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary

The PCI work tasks have been completed in conformance with the NYSDEC-approved Final PCIWP, dated May 29, 2025 (revised August 29, 2025). The following provides an overview of the PCI.

- The proposed Maintenance and Storage Buildings project area currently consists of vegetated areas in the western and southern portions and an asphalt parking area on the central portion. An existing office building (ARFF/SRE building) is located north and east of the proposed project area. Chain-link security fencing is installed around the northwestern and northern perimeters of the proposed project area. Future plans for the proposed project area include a construction area footprint consisting of the following proposed improvements:

    a) Two proposed buildings: one (1) Equipment Storage Building and one (1) Salt / Urea Storage Building.

    b) Installation of buried electric utility supply lines to each proposed building from an existing utility hole located between the proposed building footprints.

- The proposed project area is flat and the surrounding area slopes gently from east to west-northwest, with a steep drop-off adjacent to / west of the proposed Equipment Storage Building.

- Overburden soil primarily consists of native and reworked well sorted, stratified, and loose to medium dense glaciofluvial-derived sands. Gravelly and/or silty sections of the glaciofluvial sand unit also exist but are less extensive. The reworked glaciofluvial unit was encountered in each PCI boring while the glaciofluvial sand unit was greater than four (4) feet in thickness at three (3) of the deeper PCI borings (B-32, -33, and -36) as its base was not encountered at two (2) of the PCI borings (B-33 and -34). No glaciofluvial stratified sands were observed in shallow borings B-30, -31, -34, -35, -37, -38, -39, and SG-1. Deeper sections of soil beneath the glaciofluvial sand unit were identified at borings B-30, -31, and -32 consist of glacial till - a poorly sorted diamict of highly variable grain size within a silt and clay matrix. The glacial till appeared as weathered, dry, and only moderately dense in most instances.

- Boring logs for pre-existing monitoring wells installed by others which extended into the surface of bedrock in the vicinity of the proposed project work area indicate that the bedrock consists of shale with intermittent to abundant veins of quartz. One soil boring, B-32, encountered equipment refusal at approximately seven feet below grade, where

shale bedrock was encountered. The remaining PCI soil borings were limited to overburden soil depth and bedrock was not encountered during on-site drilling for the PCI. The bedrock beneath the proposed project area consists of graywackes and shales of the Middle Ordovician Austin Glen Formation.

- There are no water bodies and/or wetlands within the proposed project work area. Wappinger Creek is located approximately 400 feet northwest of the proposed project work area and flows south-southwest, away from the proposed project work area, towards the Hudson River.

- The water table of the unconfined unconsolidated aquifer (shallow hydrogeologic unit) was not encountered during advancement of soil borings. Groundwater flow is inferred to flow to the west-northwest toward Wappinger Creek.

PCI Findings – Soil Quality:

- No detections of PCBs, pesticides, or cyanide were reported.
- There were no exceedances of VOCs or SVOCs.
- One (1) exceedance above the UU SCO for copper was observed at B-32 (6 - 7 feet bgs). The UU SCO for copper is 50 ppm; the subject result was 51.8 ppm, which slightly exceeded its respective UU SCO but was below the PG SCO (1,720 ppm) and CU SCO (280 ppm) for copper.
- One (1) exceedance above the UU SCO for nickel was also identified at B-32 (6 - 7 feet bgs). The UU SCO for nickel is 30 ppm; the subject result at B-32 (6 - 7 feet bgs) for nickel was 42.2 ppm which is below its respective PG SCO (130 ppm) and CU SCO (320 ppm).
- No other metals, in samples collected from B-30 (9 – 10 feet bgs) or B-32 (6 – 7 feet bgs), exceeded SCOs in the proposed project work area.
- Two (2) PFOS results exceeded the respective IGV, summarized as follows:
    - PFOS exceedance was identified in a sample obtained from boring B-32, 0.0 - 0.17 feet bgs. The subject PFOS result was 1.43 ppb which exceeded the UUIGV (0.88 ppb) and PG IGV (1 ppb). The underlying shallow soil sample (0.17 – 1.0 feet bgs) collected from boring B-32 reported a PFOS result of 0.197 ppb which is below the UU IGV of 0.88 ppb.

      At B-34 (0.17 - 1.0 feet bgs), the PFOS in shallow soil result was 1.03 ppb which exceeded the PG IGV (1 ppb). The underlying soil at B-34 (1.0 – 2.0 feet bgs) reported a PFOS result of 0.77 ppb which is below the UU IGV for PFOS in soil.
- Three (3) PFOA results exceeded their respective IGV, summarized as follows:

- At B-34 (0.17 - 1.0 feet bgs), the PFOA result was 0.841 ppb which slightly exceeded the PG IGV (0.8 ppb). The underlying subsurface soil at B-34 (1.0 – 2.0 feet bgs) reported a PFOA result of 0.724 ppb which slightly exceeded the UU IGV of 0.66 ppb but was below the applicable PG IGV.
- At B-35 (0.17 - 1.0 feet bgs), the PFOA result was 0.678 ppb which exceeded the UU IGV (0.66 ppb). The underlying subsurface soil at B-35 (1.0 – 2.0 feet bgs) reported a PFOA result of 0.202 ppb, which is below the UU IGV.

PCI Findings – Soil Gas:

- Eighteen (18) VOCs were detected in the one (1) soil gas sample. VOCs detected with the highest concentrations in soil gas were 2-Butanone, acetone, ethanol, and tertiary butyl alcohol. VOCs in soil gas do not correlate to VOC analytical results in soil or outdoor air.
- The field duplicate soil gas sample results were similar to co-located results at soil gas sample SG-1.

PCI Findings – Outside Ambient Air:

- Five (5) VOCs were detected in the outdoor air sample (SG-2). VOCs with the highest concentrations detected in the outdoor air were acetone, isopropanol, and dichlorodifluoromethane.
- The outdoor air sample exhibited markedly lower VOCs when compared to the soil gas results. For example, Total VOCs at SG-2 were 19 $\mu g/m^3$ while the Total VOCs in soil gas ranged from 2,082 $\mu g/m^3$ (FD01) to 2,093 $\mu g/m^3$ (SG-1).

5.2 Conclusions

The following conclusions can be drawn from data collected during the PCI.

Soil

The soil affected by proposed excavation does not exhibit contaminant concentrations that prohibit on-site re-use. Soils that are not disturbed during construction activities will remain in place. Soil excavated during construction may be re-used on-site as backfill upon approval of the NYSDEC, if it does not exhibit FEC and if it exhibits suitable engineering characteristics for re-use as determined by the Project Engineer. The Contractor or project Engineer will submit a NYSDEC Request to Import/Reuse Fill or Soil form to the NYSDEC with PCI soil data attached for a reuse determination.

It is recommended that construction workers who may potentially contact project soil employ level D worker protection. Excavated soil should be stockpiled on plastic pending approval of on-site placement and re-use within the work area. Any excess soil generated on site that cannot be re-used as backfill should be sampled and characterized for off-site disposal at a permitted

disposal facility. Cleaning of excavation equipment within truck wash-down pad is recommended before equipment moves to other earthwork areas or off-site.

A summary of COC concentrations and proposed work in each of these areas is as follows:

- Surface soil in the vicinity of boring B-32 (northern central portion of excavation area for proposed Salt / Urea Storage building) exhibits a PFOS concentration that only slightly exceeds the PG IGV. This soil, when incorporated with surrounding and underlying soil during excavation for the proposed building foundation, is suitable for on-site re-use as backfill if it does not exhibit FEC, and if it exhibits suitable engineering characteristics, pending NYSDEC approval via the soil re-use form. Excess soil generated from excavation in this area that cannot be re-used on-site in the proposed embankment fill area west of the Equipment Storage Building should be sampled for off-site disposal at a permitted facility.

- Low concentrations of PFOS and PFOA were detected in shallow and subsurface soil samples collected from borings B-34 and B-35 (as depicted on Figure 3), where silt fence installation is proposed. These concentrations only slightly exceed the UU IGV for PFOA at B-35 and PFOA only slightly exceeds the PG IGV at boring B34. Based on these low contaminant levels located in an area where only erosion control measures are proposed, it is recommended that the project engineer evaluate/consider the use of filter sock installation as an erosion control measure on the embankment west of the proposed Equipment Storage Building, rather than silt fencing since filter sock installation does not require excavation. Filter socks are installed via hammered stakes. If silt fencing is the chosen erosion control measure, workers should employ level D PPE and decontaminated tools and equipment used for installation of the silt fencing in this area.

- Soil excavated for the remainder of the project area may be re-used on-site as backfill if it meets re-use criteria as described above. Excess soil generated during construction may be eligible for off-site re-use as backfill subject to approval by the NYSDEC via the NYSDEC soil reuse form. Excess soil generated site-wide that cannot be re-used on-site in the proposed embankment fill area west of the Equipment Storage Building should be sampled for off-site disposal at a permitted facility.

Soil Gas

The proposed building structures are to store equipment and salt/urea and will not be used for extended occupancy by workers, visitors, or others. One of the buildings, the Equipment Storage Building, is a non-enclosed three-sided structure. The second building, the Salt and Urea Storage Building, is only partially enclosed and will contain salt and urea.

Based upon the findings of this PCI and conclusions noted above, additional investigative or remedial activities are not warranted at this time, and construction should proceed in this area.

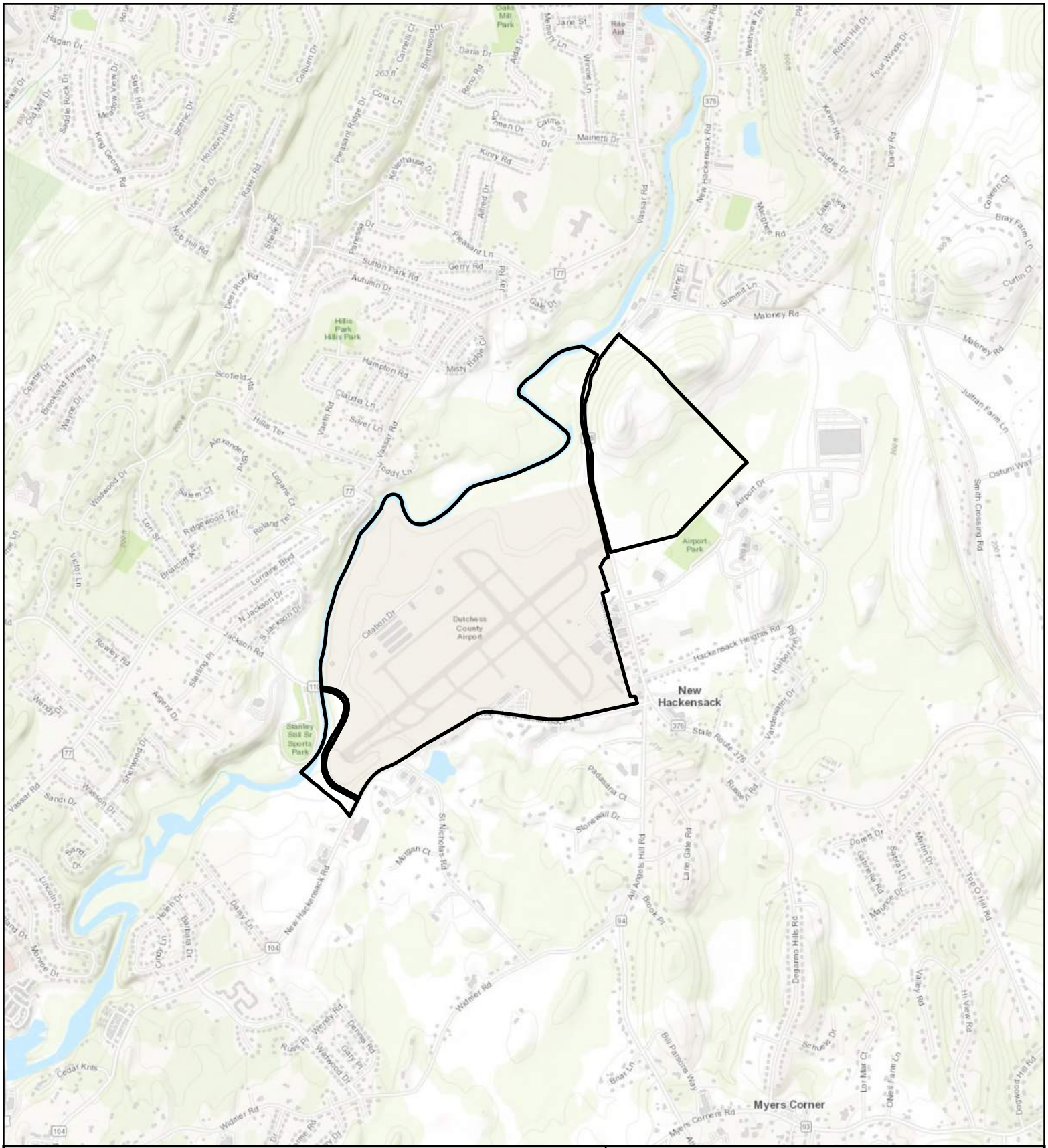
5.3 Recommendations

This PCI has adequately characterized COCs within the proposed Maintenance and Storage Buildings project area. The existing data is sufficient to allow for construction of the two proposed buildings. Excess soil from excavation may be placed on the adjacent embankment west of the proposed Equipment Storage Building if it does not exhibit FEC, if it exhibits suitable engineering characteristics as determined by the Project Engineer, and is approved by the NYDEC. If excess soil cannot be re-used on-site as proposed, it should be evaluated in accordance with DER-10 to determine appropriate off-site disposal options. A Health and Safety Plan, inclusive of Level D worker protection, and a community air monitoring program are recommended during ground intrusive work. An IRMWP is not recommended.

5.4 Data Limitations and Disclaimer

The PCI analytical data was independently validated in accordance with NYSDEC DUSR requirements. The DUSRs for each laboratory package is provided in Appendix E. Data collected for the PCI will be submitted to DER in the NYSDEC-approved electronic data deliverable (EDD).

FIGURES



Legend

JANUARY 2026

Approximate Site Location

N
W E
S

0 1,000 2,000 4,000 6,000 Feet

1 in =2,000 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: NAD 1983 StatePlane New York East FIPS 3101 (US Feet)
Date: July 21, 2025
File: 188090_HVRA_2025.aprx
GIS: C Bondi

FIGURE 1
SITE LOCATION MAP
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger **Dutchess County, NY**

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Legend

- Approximate Pre-Construction Investigation Area
- Parcel
- Brownfield Cleanup Program Boundary
- Area of Concern/Site Characterization
- Stream
- Surface Water Body
- Road
- Approximate Proposed Contractor Staging/Spoils Area
- Approximate Location of Outfall Designated During Site Characterization

0 500 1,000 2,000 3,000 Feet

1 in =600 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
C&S Engineers Grading Plan CG-101 (2024)
Projection: NAD 1983 StatePlane New York East FIPS 3101 (US Feet)
Date: November 25, 2025 (revised April 10, 2026)
File: 188090_HVRA_2025.aprx
GIS: C Bondi

JANUARY 2026

FIGURE 2
PROJECT AREA AND VICINITY MAP
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger **Dutchess County, NY**

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Area where on-site soil excavated from building footprints may be placed as fill subject to NYSDEC approval. Refer to Contract Drawing CG-101.

Outlet from storm water catch basins immediately west of ARFF/SRE Building. Refer to Contract Drawing CG-101.

Citation Drive

B-34
B-33
B-35
TP-21
B-30
TP-22
TP-23
B-36
B-31

Proposed Equipment Storage Building

ARFF/SRE Building

Precision Avionics/Aero Mechanics Building

B-37
TP-24
B-32
SG-1/SG-2

Proposed Salt/Urea Storage Building

B-38
TP-25
B-39

MW 101

Drainage Swale

Outlet from storm water catch basin immediately south of ARF/SRE Building. Refer to Contract Drawing CG-101.

AOC 4

Taxiway D

Legend

- Deep Test Pit Location (CTM 2024)
- Shallow Test Pit Location (CTM 2024)
- Soil Gas Location (CTM 2025)
- Drilled Soil Boring Location (CTM 2025)
- Hand Augered Soil Boring Location (CTM 2025)
- Approximate Proposed Building Footprint
- Area of Concern/Site Characterization
- Road
- Monitoring Well

0 30 60 120 180 240 Feet

1 in =60 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
C&S Engineers Grading Plan CG-101 (2024)
Projection: NAD 1983 StatePlane New York East FIPS 3101 (US Feet)
Date: November 26, 2025 (revised April 10, 2026)
File: 188090_HVRA_2025.aprx
GIS: C Bondi/M Loughlin

MARCH 2026

FIGURE 3
PRE-CONSTRUCTION INVESTIGATION OVERVIEW MAP
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger **Dutchess County, NY**

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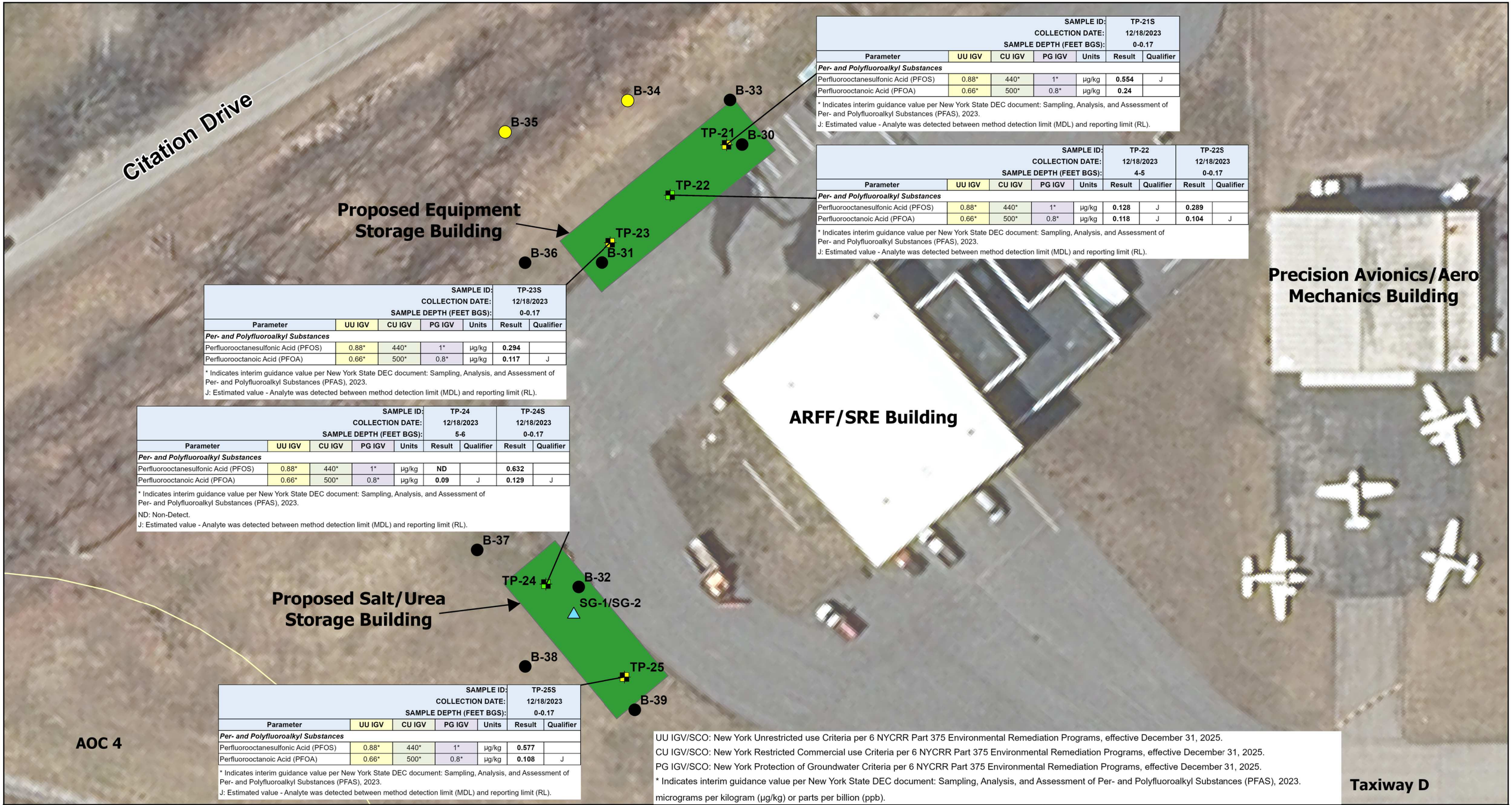

					SAMPLE ID:	TP-21S
					COLLECTION DATE:	12/18/2023
					SAMPLE DEPTH (FEET BGS):	0-0.17
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances						
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**0.554**	J
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.24**	

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

					SAMPLE ID:	TP-22	TP-22S
					COLLECTION DATE:	12/18/2023	12/18/2023
					SAMPLE DEPTH (FEET BGS):	4-5	0-0.17
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances								
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**0.128**	J	**0.289**	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.118**	J	**0.104**	J

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

					SAMPLE ID:	TP-23S
					COLLECTION DATE:	12/18/2023
					SAMPLE DEPTH (FEET BGS):	0-0.17
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances						
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**0.294**	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.117**	J

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

					SAMPLE ID:	TP-24	TP-24S
					COLLECTION DATE:	12/18/2023	12/18/2023
					SAMPLE DEPTH (FEET BGS):	5-6	0-0.17
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances								
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**ND**		**0.632**	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.09**	J	**0.129**	J

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
ND: Non-Detect.
J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

					SAMPLE ID:	TP-25S
					COLLECTION DATE:	12/18/2023
					SAMPLE DEPTH (FEET BGS):	0-0.17
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances						
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**0.577**	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.108**	J

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

UU IGV/SCO: New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
CU IGV/SCO: New York Restricted Commercial use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
PG IGV/SCO: New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
micrograms per kilogram (µg/kg) or parts per billion (ppb).

Legend

- Deep Test Pit Location (CTM 2024)
- Shallow Test Pit Location (CTM 2024)
- Soil Gas Location (CTM 2025)
- Drilled Soil Boring Location (CTM 2025)
- Hand Augered Soil Boring Location (CTM 2025)
- Approximate Proposed Building Footprint
- Area of Concern/Site Characterization
- Road

0 20 40 80 120 160 Feet

1 in = 40 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
C&S Engineers Grading Plan CG-101 (2024)
Projection: NAD 1983 StatePlane New York East FIPS 3101 (US Feet)
Date: November 26, 2025 (Revised March 24, 2026)
File: 188090_HVRA_2025.aprx
GIS: C Bondi/ M Loughlin

FIGURE 4
HISTORIC TEST PIT AND SOIL SAMPLING LOCATIONS MAP
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger — **Dutchess County, NY**

MARCH 2026

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518.786.7400 * FAX 518.786.7299

				SAMPLE ID:	B-35_0.17-1.0	
				COLLECTION DATE:	10/16/2025	
				SAMPLE DEPTH (FEET BGS):	0.17-1	
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances						
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.678**	

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

					SAMPLE ID:	B-34_0.17-1.0	B-34_1.0-2.0	
					COLLECTION DATE:	10/16/2025	10/16/2025	
					SAMPLE DEPTH (FEET BGS):	0.17-1	1-2	
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances								
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**1.03**		0.77	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	**0.841**		**0.724**	

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

				SAMPLE ID:	B-32_0.0-0.17	
				COLLECTION DATE:	10/16/2025	
				SAMPLE DEPTH (FEET BGS):	0-0.17	
Parameter	**UU IGV**	**CU IGV**	**PG IGV**	**Units**	**Result**	**Qualifier**
Per- and Polyfluoroalkyl Substances						
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	**1.43**	

* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

				SAMPLE ID:	B-32_6.0-7.0	
				COLLECTION DATE:	10/16/2025	
				SAMPLE DEPTH (FEET BGS):	6-7	
Parameter	**UU SCO**	**CU SCO**	**PG SCO**	**Units**	**Result**	**Qualifier**
Metals						
Copper, Total	50	270	1720	mg/kg	**51.8**	J
Nickel, Total	30	310	130	mg/kg	**42.2**	

J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

Citation Drive

Proposed Equipment Storage Building

Proposed Salt/Urea Storage Building

ARFF/SRE Building

Precision Avionics/Aero Mechanics Building

Taxiway D

AOC 4

B-34 B-33 B-35 TP-21 B-30 TP-22 TP-23 B-31 B-36 B-37 TP-24 B-32 SG-1 TP-25 B-38 B-39

UU IGV/SCO: New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
CU IGV/SCO: New York Restricted Commercial use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
PG IGV/SCO: New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.
* Indicates interim guidance value per New York State DEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.
micrograms per kilogram (µg/kg) or parts per billion (ppb).
milligrams per kilogram (mg/kg) or parts per million (ppm).

Legend

- Deep Test Pit Location (CTM 2024)
- Shallow Test Pit Location (CTM 2024)
- Soil Gas Location (CTM 2025)
- Approximate Proposed Building Footprint
- Road
- Area of Concern/Site Characterization
- Boring - PFAS (Drilled)
- Boring - PFAS (Augered)
- Boring - Full Suite (Drilled)

0 20 40 80 120 160 Feet

1 in = 40 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
C&S Engineers Grading Plan CG-101 (2024)
Projection: NAD 1983 StatePlane New York East FIPS 3101 (US Feet)
Date: November 26, 2025 (Revised March 24, 2026)
File: 188090_HVRA_2025.aprx
GIS: C Bondi/ M Loughlin

MARCH 2026

FIGURE 5
ANALYTES IN SOIL EXCEEDING SCGs MAP
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger **Dutchess County, NY**

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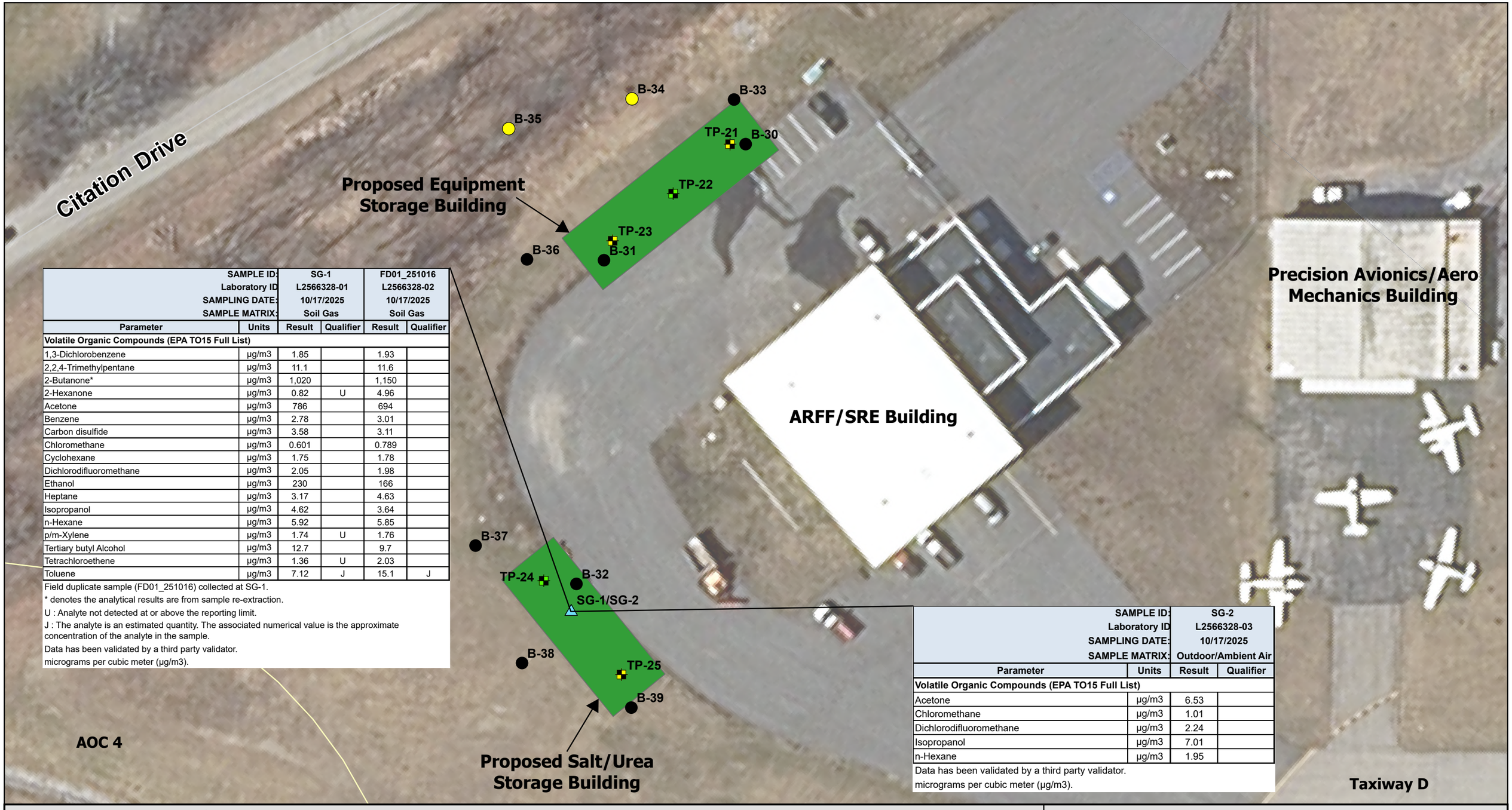

SAMPLE ID:	SG-1		FD01_251016	
Laboratory ID	L2566328-01		L2566328-02	
SAMPLING DATE:	10/17/2025		10/17/2025	
SAMPLE MATRIX:	Soil Gas		Soil Gas	
Parameter	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**
Volatile Organic Compounds (EPA TO15 Full List)					
1,3-Dichlorobenzene	µg/m3	1.85		1.93	
2,2,4-Trimethylpentane	µg/m3	11.1		11.6	
2-Butanone*	µg/m3	1,020		1,150	
2-Hexanone	µg/m3	0.82	U	4.96	
Acetone	µg/m3	786		694	
Benzene	µg/m3	2.78		3.01	
Carbon disulfide	µg/m3	3.58		3.11	
Chloromethane	µg/m3	0.601		0.789	
Cyclohexane	µg/m3	1.75		1.78	
Dichlorodifluoromethane	µg/m3	2.05		1.98	
Ethanol	µg/m3	230		166	
Heptane	µg/m3	3.17		4.63	
Isopropanol	µg/m3	4.62		3.64	
n-Hexane	µg/m3	5.92		5.85	
p/m-Xylene	µg/m3	1.74	U	1.76	
Tertiary butyl Alcohol	µg/m3	12.7		9.7	
Tetrachloroethene	µg/m3	1.36	U	2.03	
Toluene	µg/m3	7.12	J	15.1	J

Field duplicate sample (FD01_251016) collected at SG-1.

* denotes the analytical results are from sample re-extraction.

U : Analyte not detected at or above the reporting limit.

J : The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Data has been validated by a third party validator.

micrograms per cubic meter (µg/m3).

SAMPLE ID:	SG-2		
Laboratory ID	L2566328-03		
SAMPLING DATE:	10/17/2025		
SAMPLE MATRIX:	Outdoor/Ambient Air		
Parameter	**Units**	**Result**	**Qualifier**
Volatile Organic Compounds (EPA TO15 Full List)			
Acetone	µg/m3	6.53	
Chloromethane	µg/m3	1.01	
Dichlorodifluoromethane	µg/m3	2.24	
Isopropanol	µg/m3	7.01	
n-Hexane	µg/m3	1.95	

Data has been validated by a third party validator.

micrograms per cubic meter (µg/m3).

Legend

- Deep Test Pit Location (CTM 2024)
- Shallow Test Pit Location (CTM 2024)
- Soil Gas Location (CTM 2025)
- Drilled Soil Boring Location (CTM 2025)
- Hand Augered Soil Boring Location (CTM 2025)
- Approximate Proposed Building Footprint
- Area of Concern/Site Characterization
- Road

0 20 40 80 120 160 Feet

1 in = 40 Feet

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
C&S Engineers Grading Plan CG-101 (2024)
Projection: NAD 1983 StatePlane
New York East FIPS 3101 (US Feet)
Date: November 26, 2025
File: 188090_HVRA_2025.aprx
GIS: C Bondi

JANUARY 2026

FIGURE 6
SOIL GAS ANALYTICAL RESULTS MAP (DETECTIONS ONLY)
HUDSON VALLEY REGIONAL AIRPORT

Town of Wappinger **Dutchess County, NY**

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
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TABLES

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

					B-30_0.0-0.17		B-30_0.17-1.0		B-30_9.0-10.0		FD01_251016 (B-30_9.0-10.0)		B-31_0.0-0.17		B-31_0.17-1.0		B-32_0.0-0.17		B-32_0.17-1.0		B-32_6.0-7.0	
				SAMPLE ID:																		
				LAB ID:	L2566083-01		L2566083-02		L2566083-04		L2566083-34		L2566083-05		L2566083-06		L2566083-09		L2566083-10		L2566083-12	
				COLLECTION DATE:	10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025	
				SAMPLE DEPTH (FEET BGS):	0-0.17		0.17-1		9-10		9-10		0-0.17		0.17-1		0-0.17		0.17-1		6-7	
				SAMPLE MATRIX:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Volatile Organic Compounds																						
Acetone	0.03	500	0.03	mg/kg	NA		NA		0.0062	J	0.011	U	NA		NA		NA		NA		0.012	U
Semi-Volatile Organic Compounds																						
Benzo(a)anthracene	1	37	1	mg/kg	NA		NA		0.044	J	0.1	U	NA		NA		NA		NA		0.1	U
Benzo(a)pyrene	1	3.7	22	mg/kg	NA		NA		0.048	J	0.14	U	NA		NA		NA		NA		0.14	U
Benzo(b)fluoranthene	1	37	2.1	mg/kg	NA		NA		0.07	J	0.1	U	NA		NA		NA		NA		0.1	U
Benzo(ghi)perylene	0.64	47	1,000	mg/kg	NA		NA		0.038	J	0.14	U	NA		NA		NA		NA		0.14	U
Chrysene	1	47	1	mg/kg	NA		NA		0.05	J	0.1	U	NA		NA		NA		NA		0.1	U
Fluoranthene	85	500	1,000	mg/kg	NA		NA		0.1		0.1	U	NA		NA		NA		NA		0.1	U
Indeno(1,2,3-cd)pyrene	0.5	37	6.6	mg/kg	NA		NA		0.039	J	0.14	U	NA		NA		NA		NA		0.14	U
Phenanthrene	1.1	47	1,000	mg/kg	NA		NA		0.039	J	0.1	U	NA		NA		NA		NA		0.1	U
Pyrene	64	500	1,000	mg/kg	NA		NA		0.074	J	0.1	U	NA		NA		NA		NA		0.1	U
Metals																						
Aluminum, Total	NS	NS	NS	mg/kg	NA		NA		11,000		11,200	J	NA		NA		NA		NA		16,800	
Arsenic, Total	13	16	16	mg/kg	NA		NA		5.35		5.87	J	NA		NA		NA		NA		11.4	
Barium, Total	410	410	820	mg/kg	NA		NA		35.6		38.9	J	NA		NA		NA		NA		38.4	
Beryllium, Total	4.4	670	47	mg/kg	NA		NA		0.432		0.457		NA		NA		NA		NA		0.82	
Cadmium, Total	2.5	3.7	7.5	mg/kg	NA		NA		0.119	J	0.803	U	NA		NA		NA		NA		0.301	J
Calcium, Total	NS	NS	NS	mg/kg	NA		NA		10,300	J	21,000	J	NA		NA		NA		NA		14,300	
Chromium, Total	NS	NS	NS	mg/kg	NA		NA		12.3		12.5	J	NA		NA		NA		NA		20.5	
Cobalt, Total	NS	NS	NS	mg/kg	NA		NA		8.64		9.08		NA		NA		NA		NA		20.8	
Copper, Total	50	280	1,720	mg/kg	NA		NA		26.4	J	22.2	J	NA		NA		NA		NA		**51.8**	J
Iron, Total	NS	NS	NS	mg/kg	NA		NA		21,900		23,000	J	NA		NA		NA		NA		36,800	
Lead, Total	63	1,000	450	mg/kg	NA		NA		14.6		15.3		NA		NA		NA		NA		16	
Magnesium, Total	NS	NS	NS	mg/kg	NA		NA		9,490		15,200	J	NA		NA		NA		NA		8,280	
Manganese, Total	1,600	10,000	2,000	mg/kg	NA		NA		830		1,000	J	NA		NA		NA		NA		407	
Nickel, Total	30	320	130	mg/kg	NA		NA		18.8		18.8	J	NA		NA		NA		NA		**42.2**	
Potassium, Total	NS	NS	NS	mg/kg	NA		NA		545		514	J	NA		NA		NA		NA		686	
Vanadium, Total	NS	NS	NS	mg/kg	NA		NA		12.4		12.2	J	NA		NA		NA		NA		19.6	
Zinc, Total	109	10,000	2,480	mg/kg	NA		NA		55.7	J	51.2		NA		NA		NA		NA		91.7	J
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**																			
Perfluorobutanoic Acid (PFBA)	NS	NS	NS	µg/kg	0.8	U	0.808	U	NA		0.803	U	0.796	U	0.789	U	0.807	U	0.789	U	NA	

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

				SAMPLE ID:	**B-30_0.0-0.17**		**B-30_0.17-1.0**		**B-30_9.0-10.0**		**FD01_251016 (B-30_9.0-10.0)**		**B-31_0.0-0.17**		**B-31_0.17-1.0**		**B-32_0.0-0.17**		**B-32_0.17-1.0**		**B-32_6.0-7.0**	
				LAB ID:	**L2566083-01**		**L2566083-02**		**L2566083-04**		**L2566083-34**		**L2566083-05**		**L2566083-06**		**L2566083-09**		**L2566083-10**		**L2566083-12**	
				COLLECTION DATE:	**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**	
				SAMPLE DEPTH (FEET BGS):	**0-0.17**		**0.17-1**		**9-10**		**9-10**		**0-0.17**		**0.17-1**		**0-0.17**		**0.17-1**		**6-7**	
				SAMPLE MATRIX:	**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Perfluorodecanoic Acid (PFDA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.07	J	0.036	J	0.099	J	0.075	J	NA	
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**																			
Perfluorododecanoic Acid (PFDoA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.199	U	0.197	U	0.075	J	0.038	J	NA	
Perfluoroheptanoic Acid (PFHpA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.199	U	0.197	U	0.202	U	0.197	U	NA	
Perfluorohexanesulfonic Acid (PFHxS)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.038	J	0.199	U	0.197	U	0.202	U	0.197	U	NA	
Perfluorohexanoic Acid (PFHxA)	NS	NS	NS	µg/kg	0.042	J	0.202	U	NA		0.201	U	0.038	J	0.047	J	0.036	J	0.197	U	NA	
Perfluorononanoic Acid (PFNA)	NS	NS	NS	µg/kg	0.074	J	0.202	U	NA		0.201	U	0.082	J	0.079	J	0.137	J	0.128	J	NA	
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	0.2	U	0.202	U	NA		0.078	J	0.689		0.197	U	**1.43**		0.197	U	NA	
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	0.11	J	0.113	J	NA		0.102	J	0.088	J	0.245		0.212		0.193	J	NA	
Perfluoropentanoic Acid (PFPeA)	NS	NS	NS	µg/kg	0.05	J	0.404	U	NA		0.401	U	0.398	U	0.041	J	0.05	J	0.395	U	NA	
Perfluorotetradecanoic Acid (PFTeDA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.199	U	0.197	U	0.202	U	0.197	U	NA	
Perfluorotridecanoic Acid (PFTrDA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.199	U	0.197	U	0.202	U	0.197	U	NA	
Perfluoroundecanoic Acid (PFUnA)	NS	NS	NS	µg/kg	0.2	U	0.202	U	NA		0.201	U	0.199	U	0.197	U	0.081	J	0.079	J	NA	
General Chemistry																						
Total Solids	NS	NS	NS	%	90.9		94.7		95.5		94.9		84.4		91.3		88.5		83.4		96.4	

Qualifiers and Notes:

NY-UU SCO: New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-CU SCO: New York Restricted Commercial use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-PG SCO: New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

* Indicates interim guidance value (IGV) per NYSDEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

UUIGV = Unrestricted Use IGV; CUIGV = Commercial Use IGV; and, Protection of Groundwater IGV (PGIGV).

J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

U: Analyte was not detected above the method detection limit (MDL).

BOLD: Analyte result exceeds SCGs.

NS: No standard.

NA indicates that the referenced parameter was not analyzed.

Data has been validated by third party validator.

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

				SAMPLE ID:	B-33_0.0-0.17		B-33_0.17-1.0		B-34_0.0-0.17		B-34_0.17-1.0		B-34_1.0-2.0		B-35_0.0-0.17		B-35_0.17-1.0		B-35_1.0-2.0		B-36_0.0-0.17	
				LAB ID:	L2573310-01		L2573310-02		L2573310-03		L2573310-04		L2575504-01		L2573310-05		L2573310-06		L2580685-01		L2566083-22	
				COLLECTION DATE:	10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025	
				SAMPLE DEPTH (FEET BGS):	0-0.17		0.17-1		0-0.17		0.17-1		1-2		0-0.17		0.17-1		1-2		0-0.17	
				SAMPLE MATRIX:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Volatile Organic Compounds																						
Acetone	0.03	500	0.03	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Semi-Volatile Organic Compounds																						
Benzo(a)anthracene	1	37	1	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	1	3.7	22	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(b)fluoranthene	1	37	2.1	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(ghi)perylene	0.64	47	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	47	1	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Fluoranthene	85	500	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	0.5	37	6.6	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	1.1	47	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Pyrene	64	500	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Metals																						
Aluminum, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Arsenic, Total	13	16	16	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Barium, Total	410	410	820	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Beryllium, Total	4.4	670	47	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Cadmium, Total	2.5	3.7	7.5	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Calcium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Cobalt, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper, Total	50	280	1,720	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Iron, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Lead, Total	63	1,000	450	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Magnesium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Manganese, Total	1,600	10,000	2,000	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel, Total	30	320	130	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Potassium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vanadium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Zinc, Total	109	10,000	2,480	mg/kg	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**																			
Perfluorobutanoic Acid (PFBA)	NS	NS	NS	µg/kg	0.813	U	0.791	U	0.115	J	0.431	J	0.802	U	0.785	U	0.154	J	0.787	U	0.155	J

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

				SAMPLE ID:	**B-33_0.0-0.17**		**B-33_0.17-1.0**		**B-34_0.0-0.17**		**B-34_0.17-1.0**		**B-34_1.0-2.0**		**B-35_0.0-0.17**		**B-35_0.17-1.0**		**B-35_1.0-2.0**		**B-36_0.0-0.17**	
				LAB ID:	**L2573310-01**		**L2573310-02**		**L2573310-03**		**L2573310-04**		**L2575504-01**		**L2573310-05**		**L2573310-06**		**L2580685-01**		**L2566083-22**	
				COLLECTION DATE:	**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**	
				SAMPLE DEPTH (FEET BGS):	**0-0.17**		**0.17-1**		**0-0.17**		**0.17-1**		**1-2**		**0-0.17**		**0.17-1**		**1-2**		**0-0.17**	
				SAMPLE MATRIX:	**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Perfluorodecanoic Acid (PFDA)	NS	NS	NS	µg/kg	0.071	J	0.198	U	0.133	J	0.182	J	0.148	J	0.071	J	0.202	U	0.197	U	0.089	J
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**																			
Perfluorododecanoic Acid (PFDoA)	NS	NS	NS	µg/kg	0.203	U	0.198	U	0.076	J	0.11	J	0.102	J	0.196	U	0.202	U	0.197	U	0.199	U
Perfluoroheptanoic Acid (PFHpA)	NS	NS	NS	µg/kg	0.203	U	0.198	U	0.082	J	0.332		0.235		0.196	U	0.128	J	0.071	J	0.199	U
Perfluorohexanesulfonic Acid (PFHxS)	NS	NS	NS	µg/kg	0.203	U	0.198	U	0.199	U	0.066	J	0.074	J	0.196	U	0.202	U	0.059	J	0.199	U
Perfluorohexanoic Acid (PFHxA)	NS	NS	NS	µg/kg	0.049	J	0.198	U	0.199	U	0.2		0.164	J	0.196	U	0.063	J	0.197	U	0.042	J
Perfluorononanoic Acid (PFNA)	NS	NS	NS	µg/kg	0.167	J	0.198	U	0.216		0.386		0.327		0.069	J	0.36		0.197	U	0.143	J
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	0.203	U	0.198	U	0.199	U	**1.03**		0.77		0.196	U	0.202	U	0.197	U	0.199	U
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	0.222		0.115	J	0.276		**0.841**		**0.724**		0.196	U	**0.678**		0.202		0.228	
Perfluoropentanoic Acid (PFPeA)	NS	NS	NS	µg/kg	0.067	J	0.057	J	0.06	J	0.338	J	0.223	J	0.393	U	0.097	J	0.089	J	0.05	J
Perfluorotetradecanoic Acid (PFTeDA)	NS	NS	NS	µg/kg	0.203	U	0.198	U	0.199	U	0.092	J	0.2	U	0.196	U	0.202	U	0.197	U	0.199	U
Perfluorotridecanoic Acid (PFTrDA)	NS	NS	NS	µg/kg	0.203	U	0.198	U	0.064	J	0.108	J	0.136	J	0.196	U	0.202	U	0.197	U	0.036	J
Perfluoroundecanoic Acid (PFUnA)	NS	NS	NS	µg/kg	0.085	J	0.198	U	0.171	J	0.292		0.21		0.079	J	0.202	U	0.197	U	0.091	J
General Chemistry																						
Total Solids	NS	NS	NS	%	93.7		90.7		75.4		77.4		77.6		88.2		91.9		82		91.5	

Qualifiers and Notes:

NY-UU SCO: New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-CU SCO: New York Restricted Commercial use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-PG SCO: New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

* Indicates interim guidance value (IGV) per NYSDEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

UUIGV = Unrestricted Use IGV; CUIGV = Commercial Use IGV; and, Protection of Groundwater IGV (PGIGV).

J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

U: Analyte was not detected above the method detection limit (MDL).

BOLD: Analyte result exceeds SCGs.

NS: No standard.

NA indicates that the referenced parameter was not analyzed.

Data has been validated by third party validator.

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

					B-36_0.17-1.0		B-37_0.0-0.17		B-37_0.17-1.0		B-38_0.0-0.17		B-38_0.17-1.0		B-39_0.0-0.17		B-39_0.17-1.0	
				SAMPLE ID:														
				LAB ID:	L2566083-23		L2566083-25		L2566083-26		L2566083-28		L2566083-29		L2566083-31		L2566083-32	
				COLLECTION DATE:	10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025		10/16/2025	
				SAMPLE DEPTH (FEET BGS):	0.17-1		0-0.17		0.17-1		0-0.17		0.17-1		0-0.17		0.17-1	
				SAMPLE MATRIX:	Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Volatile Organic Compounds																		
Acetone	0.03	500	0.03	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Semi-Volatile Organic Compounds																		
Benzo(a)anthracene	1	37	1	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	1	3.7	22	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Benzo(b)fluoranthene	1	37	2.1	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Benzo(ghi)perylene	0.64	47	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	47	1	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Fluoranthene	85	500	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	0.5	37	6.6	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	1.1	47	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Pyrene	64	500	1,000	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Metals																		
Aluminum, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Arsenic, Total	13	16	16	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Barium, Total	410	410	820	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Beryllium, Total	4.4	670	47	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Cadmium, Total	2.5	3.7	7.5	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Calcium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Chromium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Cobalt, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Copper, Total	50	280	1,720	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Iron, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Lead, Total	63	1,000	450	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Magnesium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Manganese, Total	1,600	10,000	2,000	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Nickel, Total	30	320	130	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Potassium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Vanadium, Total	NS	NS	NS	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Zinc, Total	109	10,000	2,480	mg/kg	NA		NA		NA		NA		NA		NA		NA	
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**															
Perfluorobutanoic Acid (PFBA)	NS	NS	NS	µg/kg	0.796	U	0.122	J	0.155	J	0.129	J	0.123	J	0.798	U	0.792	U

TABLE 1
PRE-CONSTRUCTION INVESTIGATION SOIL SAMPLING SUMMARY - DETECTIONS ONLY
MAINTENANCE AND STORAGE BUILDING PROJECT - HUDSON VALLEY REGIONAL AIRPORT
WAPPINGER, DUTCHESS COUNTY, NY

				SAMPLE ID:	**B-36_0.17-1.0**		**B-37_0.0-0.17**		**B-37_0.17-1.0**		**B-38_0.0-0.17**		**B-38_0.17-1.0**		**B-39_0.0-0.17**		**B-39_0.17-1.0**	
				LAB ID:	**L2566083-23**		**L2566083-25**		**L2566083-26**		**L2566083-28**		**L2566083-29**		**L2566083-31**		**L2566083-32**	
				COLLECTION DATE:	**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**		**10/16/2025**	
				SAMPLE DEPTH (FEET BGS):	**0.17-1**		**0-0.17**		**0.17-1**		**0-0.17**		**0.17-1**		**0-0.17**		**0.17-1**	
				SAMPLE MATRIX:	**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**		**Soil**	
Parameter	**NY-UU SCO**	**NY-CU SCO**	**NY-PG SCO**	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Perfluorodecanoic Acid (PFDA)	NS	NS	NS	µg/kg	0.199	U	0.11	J	0.117	J	0.077	J	0.201	U	0.074	J	0.198	U
Per- and Polyfluoroalkyl Substances	**NY-UU IGV**	**NY-CU IGV**	**NY-PG IGV**															
Perfluorododecanoic Acid (PFDoA)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.053	J	0.202	U	0.201	U	0.042	J	0.198	U
Perfluoroheptanoic Acid (PFHpA)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.109	J	0.103	J	0.201	U	0.2	U	0.198	U
Perfluorohexanesulfonic Acid (PFHxS)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.202	U	0.202	U	0.201	U	0.2	U	0.198	U
Perfluorohexanoic Acid (PFHxA)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.087	J	0.071	J	0.06	J	0.2	U	0.198	U
Perfluorononanoic Acid (PFNA)	NS	NS	NS	µg/kg	0.042	J	0.171	J	0.214		0.172	J	0.042	J	0.182	J	0.042	J
Perfluorooctanesulfonic Acid (PFOS)	0.88*	440*	1*	µg/kg	0.199	U	0.196	U	0.202	U	0.202	U	0.201	U	0.619		0.198	U
Perfluorooctanoic Acid (PFOA)	0.66*	500*	0.8*	µg/kg	0.159	J	0.21		0.381		0.467		0.275		0.148	J	0.196	J
Perfluoropentanoic Acid (PFPeA)	NS	NS	NS	µg/kg	0.06	J	0.067	J	0.105	J	0.075	J	0.056	J	0.048	J	0.396	U
Perfluorotetradecanoic Acid (PFTeDA)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.202	U	0.202	U	0.201	U	0.2	U	0.198	U
Perfluorotridecanoic Acid (PFTrDA)	NS	NS	NS	µg/kg	0.199	U	0.196	U	0.044	J	0.202	U	0.201	U	0.2	U	0.198	U
Perfluoroundecanoic Acid (PFUnA)	NS	NS	NS	µg/kg	0.199	U	0.116	J	0.137	J	0.085	J	0.201	U	0.08	J	0.198	U
General Chemistry																		
Total Solids	NS	NS	NS	%	93.1		86.3		87.7		94.6		93		90.7		92.3	

Qualifiers and Notes:

NY-UU SCO: New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-CU SCO: New York Restricted Commercial use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

NY-PG SCO: New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 31, 2025.

* Indicates interim guidance value (IGV) per NYSDEC document: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), 2023.

UUIGV = Unrestricted Use IGV; CUIGV = Commercial Use IGV; and, Protection of Groundwater IGV (PGIGV).

J: Estimated value - Analyte was detected between method detection limit (MDL) and reporting limit (RL).

U: Analyte was not detected above the method detection limit (MDL).

BOLD: Analyte result exceeds SCGs.

NS: No standard.

NA indicates that the referenced parameter was not analyzed.

Data has been validated by third party validator.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS - SOIL GAS
MAINTENANCE STORAGE BUILDING PROJECT
HUDSON VALLEY REGIONAL AIRPORT
TOWN OF WAPPINGER, DUTCHESS COUNTY, NY
OCTOBER 2025

SAMPLE ID:		SG-1		SG-1*		FD01_251016		FD01_251016*		SG-2	
SAMPLING DATE:		10/17/2025		10/17/2025		10/17/2025		10/17/2025		10/17/2025	
SAMPLE MATRIX:		Soil Gas		Soil Gas		Soil Gas		Soil Gas		Outdoor/Ambient Air	
Parameter	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Volatile Organic Compounds (EPA TO15 Full List)											
1,3-Dichlorobenzene	µg/m^3	1.85		NA		1.93		NA		1.2	U
2,2,4-Trimethylpentane	µg/m^3	11.1		NA		11.6		NA		0.934	U
2-Butanone	µg/m^3	979	E	1,020		961	E	1,150		1.47	U
2-Hexanone	µg/m^3	0.82	U	NA		4.96		NA		0.82	U
Acetone	µg/m^3	786		NA		694		NA		6.53	
Benzene	µg/m^3	2.78		NA		3.01		NA		0.639	U
Carbon disulfide	µg/m^3	3.58		NA		3.11		NA		0.623	U
Chloromethane	µg/m^3	0.601		NA		0.789		NA		1.01	
Cyclohexane	µg/m^3	1.75		NA		1.78		NA		0.688	U
Dichlorodifluoromethane	µg/m^3	2.05		NA		1.98		NA		2.24	
Ethanol	µg/m^3	230		NA		166		NA		9.42	U
Heptane	µg/m^3	3.17		NA		4.63		NA		0.82	U
Isopropanol	µg/m^3	4.62		NA		3.64		NA		7.01	
n-Hexane	µg/m^3	5.92		NA		5.85		NA		1.95	
p/m-Xylene	µg/m^3	1.74	U	NA		1.76		NA		1.74	U
Tertiary butyl Alcohol	µg/m^3	12.7		NA		9.7		NA		1.52	U
Tetrachloroethene	µg/m^3	1.36	U	NA		2.03		NA		1.36	U
Toluene	µg/m^3	7.12	J	NA		15.1	J	NA		0.754	U
Total VOCs	µg/m^3	2,093		NA		2,082		NA		19	

NOTES:

Field duplicate sample (FD01_251016) collected at SG-1.

* denotes the analytical results are from sample re-extraction.

Qualifier Column definitions as follows:

E : Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

U : Analyte not detected at or above the reporting limit.

J : The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

NA : Not analyzed as re-extraction was not required.

Data has been validated by a third party validator.

APPENDICES

APPENDIX A

SUBSURFACE EXPLORATION LOGS

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-30
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	2.5	Dark brown fine to coarse SAND, Some Silt, trace coarse Gravel; dry [SW] ±2.5'	
4				Brown fine to coarse SAND, Some Silt, little fine and coarse Gravel; dry; poorly sorted; subangular to rounded [SW] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±6.0'	
6		2	3.5	Grey fine to coarse SAND, AND fine Gravel, little Silt; dry; angular to subangular [SW] ±7.0'	
8				Brown fine to coarse SAND, Some Silt, little fine Gravel; dry; angular to subangular [SM] ±8.0'	
10				Grey fine and coarse GRAVEL, Some fine to coarse Sand, little Silt; dry; angular [GM] [GLACIAL TILL] ±10.0'	
12				Boring terminated ±10.0' bgs	
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-31
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	2.5	Dark brown fine to coarse SAND, Some Silt, trace fine Gravel; moist; angular [SW] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±0.5'	
4				Brown fine to coarse SAND, Some Silt, little fine and coarse Gravel; dry; angular [SM] ±4.0'	Silt lens
6		2	3.5	Brown fine SAND, AND Silt, little fine Gravel; rounded to subangular; dry; poorly sorted [SM] [FILL: REWORKED GLACIAL TILL] ±6.0'	
8				Brown SILT, Some fine Sand, trace fine Gravel; dry; poorly sorted; subrounded [ML] ±8.0'	
10				Dark brown fine to coarse SAND, Some fine Gravel, little Silt; dry; angular to rounded; poorly sorted [SW] [GLACIAL TILL] ±10.0'	
12				Boring terminated ±10.0' bgs	
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-32
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	3.5	Dark brown fine and medium SAND, Some Silt, trace fine Gravel; moist; angular [SW] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±0.5'	
4				Light brown fine to coarse SAND, Some Silt, little fine Gravel; dry; subrounded to angular; poorly sorted [SW] [GLACIOFLUVIAL STRATIFIED SAND] ±4.5'	
6		2	1.25	Grey fine and coarse GRAVEL, Some fine to coarse Sand, little Silt; dry; angular [GM] [GLACIAL TILL] ±7.0'	Refusal at ±7.0' due to top of bedrock.
8				Boring terminated ±7.0' bgs	
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-33
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	'	Brown fine and medium SAND, Some Silt; moist; subrounded to subangular [SM] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±0.5'	
4				Brown fine to coarse SAND, Some Silt, little fine Gravel; dry; subrounded to angular; poorly sorted [SW] [GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	
6				Boring terminated ±5.0' bgs	
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-34
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Laughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	NA	Brown fine to coarse SAND, Some Silt, little fine Gravel; moist; poorly sorted; subrounded to angular [SW] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±2.0'	Hand augered
				Boring Terminated ±2.0' bgs	
4					
6					
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Stainless Steel Hand Auger
METHOD OF SAMPLING: One foot sections

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-35
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Laughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2	/	1	NA	Brown fine to coarse SAND, Some Silt, Some fine Gravel; moist; poorly sorted; rounded to subangular [SW] [FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±2.0'	Hand augered
				Boring Terminated ±2.0' bgs	
4					
6					
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Stainless Steel Hand Auger
METHOD OF SAMPLING: One foot sections

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.:	**B-36**		
ELEV.:		**DATUM:**	
START DATE:	**10/16/25**	**FINISH DATE:**	**10/16/25**
SHEET	**1 of 1**		

PROJECT:	Hudson Valley Regional Airport Site	CTM PROJECT NO.:	18.8090
LOCATION:	Wappinger, NY	CTM OBSERVER:	M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	2.5	Brown fine to coarse SAND, Some Silt, little fine Gravel; moist; poorly sorted; rounded to subangular [SM] ±1.0' Brown fine SAND, Some Silt, trace fine Gravel; dry; rounded to subangular; poorly sorted [SW]	
4				[FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	
6				Boring terminated ±5.0' bgs	
8					
10					
12					
14					
16					

DRILLING CONTRACTOR:	Core Down Drilling
DIRECT-PUSH TYPE:	Geoprobe
METHOD OF SAMPLING:	5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-37
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	3.5	Dark brown fine to coarse SAND, Some Silt, trace fine Gravel; moist; rounded to subrounded [SW] ±0.5'	
4				Brown fine to coarse SAND, Some Silt, little fine Gravel; dry; rounded to angular; poorly sorted [SW]	
6				[FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	
8				Boring terminated ±5.0' bgs	
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: B-38
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	3.75	Brown fine to coarse SAND, Some Silt; moist; subrounded to angular [SM] ±0.5'	
4				Light brown fine to coarse SAND, Some Silt, little fine Gravel; dry; subangular to angular; poorly sorted [SW]	
				[FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	
6				Boring terminated ±5.0' bgs	
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.:	**B-39**		
ELEV.:		**DATUM:**	
START DATE:	**10/16/25**	**FINISH DATE:**	**10/16/25**
SHEET	**1 of 1**		

PROJECT: Hudson Valley Regional Airport Site — CTM PROJECT NO.: 18.8090

LOCATION: Wappinger, NY — CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
2		1	4.0	Brown fine to coarse SAND, Some Silt, little fine Gravel; moist [SW] ±0.5' Brown fine to coarse SAND, Some Silt, trace fine Gravel; dry; angular; poorly sorted [SM]	
4				[FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	
6				Boring terminated ±5.0' bgs	
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling

DIRECT-PUSH TYPE: Geoprobe

METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: ML

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: SG-1
ELEV.: **DATUM:**
START DATE: 10/16/25 **FINISH DATE:** 10/16/25
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport Site CTM PROJECT NO.: 18.8090
LOCATION: Wappinger, NY CTM OBSERVER: M. Loughlin

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
0				Brown fine to medium SAND, Some Silt, trace fine Gravel; subangular; moist [SM] ±1.0'	±0.5 Asphalt Surface
2		1	4.0	Light brown fine to coarse SAND, Some Silt, trace fine Gravel; moist; poorly sorted; angular to rounded [SW]	
4				[FILL: REWORKED GLACIOFLUVIAL STRATIFIED SAND] ±5.0'	Temporary monitoring point SG-1 installed with S.S. implant at 4.5-5.0' bgs
6				Boring Terminated ±5.0' bgs	
8					
10					
12					
14					
16					

DRILLING CONTRACTOR: Core Down Drilling
DIRECT-PUSH TYPE: Geoprobe
METHOD OF SAMPLING: 5' Macro Core barrel with acetate liner

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY: RH

APPENDIX B

ORGANIC VAPOR HEADSPACE ANALYSIS LOGS

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	Hudson Valley Regional Airport Site		**PROJECT #:**	18.8090 - 250	**PAGE 1 OF 3**
CLIENT:	Dutchess County				**DATE**
LOCATION:	Wappinger, NY | Maintenance & Storage Buildings				**COLLECTED: 10/16/2025**
INSTRUMENT USED:	Mini-Rae 3000	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	10/16/2025	**BY:**	ML		**ANALYZED: 10/16/2025**
TEMPERATURE OF SOIL:	ambient				**ANALYST: ML**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
SG-1	1	0.0-2.5	Soil	0.0	0.0	NO NS
SG-1	2	2.5-5.0	Soil	0.0	0.0	NO NS
B-32	3	0.0-0.17	Soil	0.0	0.0	NO NS
B-32	4	0.17-1.0	Soil	0.0	0.0	NO NS
B-32	5	1.0-2.0	Soil	0.0	0.0	NO NS
B-32	6	2.0-4.0	Soil	0.0	0.0	NO NS
B-32	7	4.0-6.0	Soil	0.0	0.0	NO NS
B-32	8	6.0-8.0	Soil	0.0	0.0	NO NS
B-32	9	8.0-10.0	Soil	0.0	0.1	NO NS
B-39	10	0.0-0.17	Soil	0.0	0.1	NO NS
B-39	11	0.17-1.0	Soil	0.0	0.1	NO NS
B-39	12	1.0-2.0	Soil	0.0	0.1	NO NS
B-39	13	2.0-4.0	Soil	0.0	0.1	NO NS
B-39	14	4.0-5.0	Soil	0.0	0.1	NO NS
B-38	15	0.0-0.17	Soil	0.1	0.1	NO NS
B-38	16	0.17-1.0	Soil	0.1	0.1	NO NS
B-38	17	1.0-2.0	Soil	0.0	0.0	NO NS
B-38	18	2.0-4.0	Soil	0.0	0.0	NO NS
B-38	19	4.0-5.0	Soil	0.1	0.1	NO NS
B-37	20	0.0-0.17	Soil	0.0	0.0	NO NS
B-37	21	0.17-1.0	Soil	0.0	0.0	NO NS

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.
***FT represents depth of sample collected feet below ground surface
NO NS = No odor and No staining

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	Hudson Valley Regional Airport Site		**PROJECT #:**	18.8090 - 250	**PAGE 2 OF 3**
CLIENT:	Dutchess County				**DATE**
LOCATION:	Wappinger, NY | Maintenance & Storage Buildings				**COLLECTED: 10/16/2025**
INSTRUMENT USED:	Mini-Rae 3000	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	10/16/2025	**BY:**	ML		**ANALYZED: 10/16/2025**
TEMPERATURE OF SOIL:	ambient				**ANALYST: ML**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
B-37	22	1.0-2.0	Soil	0.0	0.0	NO NS
B-37	23	2.0-4.0	Soil	0.0	0.0	NO NS
B-37	24	4.0-5.0	Soil	0.0	0.0	NO NS
B-33	25	0.0-0.17	Soil	0.0	0.0	NO NS
B-33	26	0.17-1.0	Soil	0.1	0.1	NO NS
B-33	27	1.0-2.0	Soil	0.1	0.1	NO NS
B-33	28	2.0-4.0	Soil	0.1	0.1	NO NS
B-33	29	4.0-5.0	Soil	0.1	0.1	NO NS
B-30	30	0.0-0.17	Soil	0.1	0.1	NO NS
B-30	31	0.17-1.0	Soil	0.1	0.1	NO NS
B-30	32	1.0-2.0	Soil	0.1	0.1	NO NS
B-30	33	2.0-4.0	Soil	0.1	0.1	NO NS
B-30	34	4.0-6.0	Soil	0.0	0.0	NO NS
B-30	35	6.0-8.0	Soil	0.0	0.0	NO NS
B-30	36	8.0-10.0	Soil	0.0	0.0	NO NS
B-31	37	0.0-0.17	Soil	0.1	0.1	NO NS
B-31	38	0.17-1.0	Soil	0.1	0.1	NO NS
B-31	39	1.0-2.0	Soil	0.0	0.0	NO NS
B-31	40	2.0-4.0	Soil	0.0	0.0	NO NS
B-31	41	4.0-6.0	Soil	0.1	0.1	NO NS
B-31	42	6.0-8.0	Soil	0.1	0.1	NO NS

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.
***FT represents depth of sample collected feet below ground surface
NO NS = No odor and No staining

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	Hudson Valley Regional Airport Site	**PROJECT #:**	18.8090 - 250	**PAGE 3 OF 3**	
CLIENT:	Dutchess County			**DATE**	
LOCATION:	Wappinger, NY | Maintenance & Storage Buildings			**COLLECTED: 10/16/2025**	
INSTRUMENT USED:	Mini-Rae 3000	**LAMP**	10.6 **eV**	**DATE**	
DATE INSTRUMENT CALIBRATED:	10/16/2025	**BY:**	ML	**ANALYZED: 10/16/2025**	
TEMPERATURE OF SOIL:	ambient			**ANALYST: ML**	

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
B-31	43	8.0-10.0	Soil	0.0	0.0	NO NS
B-36	44	0.0-0.17	Soil	0.1	0.0	NO NS
B-36	45	0.17-1.0	Soil	0.0	0.1	NO NS
B-36	46	1.0-2.0	Soil	0.1	0.1	NO NS
B-36	47	2.0-4.0	Soil	0.1	0.1	NO NS
B-36	48	4.0-5.0	Soil	0.0	0.0	NO NS
B-34	49	0.0-0.17	Soil	0.0	0.0	NO NS
B-34	50	0.17-1.0	Soil	0.0	0.0	NO NS
B-34	51	1.0-2.0	Soil	0.0	0.0	NO NS
B-35	52	0.0-0.17	Soil	0.0	0.0	NO NS
B-35	53	0.17-1.0	Soil	0.0	0.0	NO NS
B-35	54	1.0-2.0	Soil	0.0	0.0	NO NS

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.
***FT represents depth of sample collected feet below ground surface
NO NS = No odor and No staining

APPENDIX C

ANALYTICAL LABORATORY REPORTS

ANALYTICAL REPORT

Lab Number:	L2566083
Client:	C.T. Male Associates 12 Raymond Ave. 2nd Floor Poughkeepsie, NY 12603
ATTN:	Eric White
Phone:	(885) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	11/12/25

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2566083-01	B-30_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 13:20	10/17/25
L2566083-02	B-30_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 13:23	10/17/25
L2566083-03	B-30_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 13:25	10/17/25
L2566083-04	B-30_9.0-10.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 13:35	10/17/25
L2566083-05	B-31_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 14:35	10/17/25
L2566083-06	B-31_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 14:38	10/17/25
L2566083-07	B-31_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 14:42	10/17/25
L2566083-08	B-31_9.0-10.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 14:45	10/17/25
L2566083-09	B-32_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:16	10/17/25
L2566083-10	B-32_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:18	10/17/25
L2566083-11	B-32_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:20	10/17/25
L2566083-12	B-32_6.0-7.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:25	10/17/25
L2566083-13	B-33_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 12:47	10/17/25
L2566083-14	B-33_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 12:50	10/17/25
L2566083-15	B-33_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 12:55	10/17/25
L2566083-16	B-34_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:16	10/17/25
L2566083-17	B-34_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:19	10/17/25
L2566083-18	B-34_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:22	10/17/25
L2566083-19	B-35_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:26	10/17/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2566083-20	B-35_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:28	10/17/25
L2566083-21	B-35_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:30	10/17/25
L2566083-22	B-36_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:06	10/17/25
L2566083-23	B-36_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:08	10/17/25
L2566083-24	B-36_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:10	10/17/25
L2566083-25	B-37_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:40	10/17/25
L2566083-26	B-37_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:42	10/17/25
L2566083-27	B-37_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:46	10/17/25
L2566083-28	B-38_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:20	10/17/25
L2566083-29	B-38_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:23	10/17/25
L2566083-30	B-38_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 10:25	10/17/25
L2566083-31	B-39_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:50	10/17/25
L2566083-32	B-39_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:52	10/17/25
L2566083-33	B-39_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 09:57	10/17/25
L2566083-34	FD01_251016	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 00:00	10/17/25
L2566083-35	FD02_251016	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 00:00	10/17/25
L2566083-36	M&S_EB01_251016	WATER	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 08:30	10/17/25
L2566083-37	M&S_EB01_251016	WATER	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 08:32	10/17/25
L2566083-38	M&S_IDW_DECONWATER	WATER	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 08:50	10/17/25
L2566083-39	TRIP BLANK	WATER	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/13/25 00:00	10/17/25

Project Name:	HVRA	**Lab Number:**	L2566083
Project Number:	18.8090	**Report Date:**	11/12/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HVRA **Lab Number:** L2566083
Project Number: 18.8090 **Report Date:** 11/12/25

Case Narrative (continued)

Report Submission
November 12, 2025: This final report includes the results of all requested analyses.
November 04, 2025: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt
The analyses performed were specified by the client.
L2566083-34: Sample containers for Volatile Organics, Semivolatile Organics, Pescticide, PCBs, Total Metals and Cyanide were received, but not listed on the chain of custody. At the client's request, the analyses were performed.
L2566083-39: A sample identified as "TRIP BLANK" was received, but not listed on the chain of custody. At the client's request, this sample was analyzed.

Volatile Organics
L2566083-38D: The sample has elevated detection limits due to the dilution required by the sample matrix (foam).

Perfluorinated Alkyl Acids by 1633
L2566083-01, -02, -05, -06, -09, -10, -22, -23, -25, -26, -28, -29, -31, -32, and -34: The analysis of Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA) exceeded the 3-day holding time recommended by the method for soil/sediment and tissue matrices.
L2566083-38: The Extracted Internal Standard recoveries were above the acceptance criteria for 1h,1h,2h,2h-perfluoro[1,2-13c2]hexanesulfonic acid (m2-4:2fts) (270%), 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (264%) and perfluoro[1,2-13c2]tetradecanoic acid (m2pfteda) (149%). Since the sample was non-detect to the RL for all associated target analytes, re-analysis was not required.

Project Name:	HVRA	**Lab Number:**	L2566083
Project Number:	18.8090	**Report Date:**	11/12/25

Case Narrative (continued)

Total Metals

L2566083-04, -12, and -34: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2131334-3/-4 MS/MSD recoveries performed on L2566083-04 do not apply for aluminum (MS 0%), calcium (0%/12%), iron (0%/0%), magnesium (0%/23%), and manganese (MS 0%) because the sample concentrations are greater than four times the spike amounts added.

The WG2131334-3/-4 MS/MSD recoveries performed on L2566083-04 are outside the acceptance criteria for antimony (42%/43%), copper (MS 74%), and zinc (MS 61%). A post digestion spike was performed and was within acceptance criteria.

Cyanide, Total

The WG2131948-2 LCS recovery associated with L2566083-04 is outside our in-house acceptance criteria for cyanide, total (71%), but within the vendor-certified acceptance limits. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 11/12/25

ORGANICS

VOLATILES

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 10/29/25 18:19

Analyst: AJK

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.7	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	0.25	J	ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.1	0.26	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.30	1
Tetrachloroethene	ND		ug/kg	0.57	0.22	1
Chlorobenzene	ND		ug/kg	0.57	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.6	0.79	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.29	1
1,1,1-Trichloroethane	ND		ug/kg	0.57	0.19	1
Bromodichloromethane	ND		ug/kg	0.57	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.31	1
cis-1,3-Dichloropropene	ND		ug/kg	0.57	0.18	1
Bromoform	ND		ug/kg	4.6	0.28	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.57	0.19	1
Benzene	ND		ug/kg	0.57	0.19	1
Toluene	ND		ug/kg	1.1	0.62	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Chloromethane	ND		ug/kg	4.6	1.1	1
Bromomethane	ND		ug/kg	2.3	0.66	1
Vinyl chloride	ND		ug/kg	1.1	0.38	1
Chloroethane	ND		ug/kg	2.3	0.52	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.27	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.16	1
Trichloroethene	ND		ug/kg	0.57	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.16	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.23	1
p/m-Xylene	ND		ug/kg	2.3	0.64	1
o-Xylene	ND		ug/kg	1.1	0.33	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.20	1
Styrene	ND		ug/kg	1.1	0.22	1
Dichlorodifluoromethane	ND		ug/kg	11	1.0	1
Acetone	6.2	J	ug/kg	11	5.5	1
Carbon disulfide	ND		ug/kg	11	5.2	1
2-Butanone	ND		ug/kg	11	2.5	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.5	1
2-Hexanone	ND		ug/kg	11	1.3	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.32	1
n-Butylbenzene	ND		ug/kg	1.1	0.19	1
sec-Butylbenzene	ND		ug/kg	1.1	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.13	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.4	1.1	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.6	0.74	1
n-Propylbenzene	ND		ug/kg	1.1	0.20	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	0.31	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.38	1
Methyl Acetate	ND		ug/kg	4.6	1.1	1
Cyclohexane	ND		ug/kg	11	0.62	1
Freon-113	ND		ug/kg	4.6	0.79	1
Methyl cyclohexane	ND		ug/kg	4.6	0.69	1

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND	ug/kg	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**137**	Q	70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	**139**	Q	70-130

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 10/29/25 17:59

Analyst: AJK

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.9	2.7	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.8	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.15	1
Dibromochloromethane	ND		ug/kg	1.2	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.31	1
Tetrachloroethene	ND		ug/kg	0.59	0.23	1
Chlorobenzene	ND		ug/kg	0.59	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.7	0.82	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.59	0.20	1
Bromodichloromethane	ND		ug/kg	0.59	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.32	1
cis-1,3-Dichloropropene	ND		ug/kg	0.59	0.18	1
Bromoform	ND		ug/kg	4.7	0.29	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.59	0.19	1
Benzene	ND		ug/kg	0.59	0.19	1
Toluene	ND		ug/kg	1.2	0.64	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Chloromethane	ND		ug/kg	4.7	1.1	1
Bromomethane	ND		ug/kg	2.3	0.68	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
Chloroethane	ND		ug/kg	2.3	0.53	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1
Trichloroethene	ND		ug/kg	0.59	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.17	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.24	1
p/m-Xylene	ND		ug/kg	2.3	0.66	1
o-Xylene	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
Styrene	ND		ug/kg	1.2	0.23	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	ND		ug/kg	12	5.6	1
Carbon disulfide	ND		ug/kg	12	5.3	1
2-Butanone	ND		ug/kg	12	2.6	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.5	1
2-Hexanone	ND		ug/kg	12	1.4	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.33	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	1.2	1
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.7	0.76	1
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	0.32	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.39	1
Methyl Acetate	ND		ug/kg	4.7	1.1	1
Cyclohexane	ND		ug/kg	12	0.64	1
Freon-113	ND		ug/kg	4.7	0.81	1
Methyl cyclohexane	ND		ug/kg	4.7	0.71	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	100		70-130

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 10/30/25 12:16

Analyst: RAW

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.15	1
Chloroform	0.28	J	ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.13	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.28	1
Tetrachloroethene	ND		ug/kg	0.53	0.21	1
Chlorobenzene	ND		ug/kg	0.53	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.74	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	0.18	1
Bromodichloromethane	ND		ug/kg	0.53	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.53	0.17	1
Bromoform	ND		ug/kg	4.3	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.53	0.18	1
Benzene	ND		ug/kg	0.53	0.18	1
Toluene	ND		ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.1	0.62	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.1	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1
Trichloroethene	ND		ug/kg	0.53	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.98	1
Acetone	ND		ug/kg	11	5.1	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
2-Hexanone	ND		ug/kg	11	1.3	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.1	0.13	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.69	1
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.36	1
Methyl Acetate	ND		ug/kg	4.3	1.0	1
Cyclohexane	ND		ug/kg	11	0.58	1
Freon-113	ND		ug/kg	4.3	0.74	1
Methyl cyclohexane	ND		ug/kg	4.3	0.64	1

Tentatively Identified Compounds				
Total TIC Compounds	10.7	J	ug/kg	1
Unknown	2.88	J	ug/kg	1
Cyclotrisiloxane, Hexamethyl-	3.06	NJ	ug/kg	1
Unknown	4.77	J	ug/kg	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	104		70-130

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 D
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 10/29/25 11:59
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	2.8	4
1,1-Dichloroethane	ND		ug/l	10	2.8	4
Chloroform	ND		ug/l	10	2.8	4
Carbon tetrachloride	ND		ug/l	2.0	0.54	4
1,2-Dichloropropane	ND		ug/l	4.0	0.55	4
Dibromochloromethane	ND		ug/l	2.0	0.60	4
1,1,2-Trichloroethane	ND		ug/l	6.0	2.0	4
Tetrachloroethene	ND		ug/l	2.0	0.72	4
Chlorobenzene	ND		ug/l	10	2.8	4
Trichlorofluoromethane	ND		ug/l	10	2.8	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
1,1,1-Trichloroethane	ND		ug/l	10	2.8	4
Bromodichloromethane	ND		ug/l	2.0	0.77	4
trans-1,3-Dichloropropene	ND		ug/l	2.0	0.66	4
cis-1,3-Dichloropropene	ND		ug/l	2.0	0.58	4
Bromoform	ND		ug/l	8.0	2.6	4
1,1,2,2-Tetrachloroethane	ND		ug/l	2.0	0.67	4
Benzene	ND		ug/l	2.0	0.64	4
Toluene	ND		ug/l	10	2.8	4
Ethylbenzene	ND		ug/l	10	2.8	4
Chloromethane	ND		ug/l	10	2.8	4
Bromomethane	ND		ug/l	10	2.8	4
Vinyl chloride	ND		ug/l	4.0	0.28	4
Chloroethane	ND		ug/l	10	2.8	4
1,1-Dichloroethene	ND		ug/l	2.0	0.68	4
trans-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Trichloroethene	ND		ug/l	2.0	0.70	4
1,2-Dichlorobenzene	ND		ug/l	10	2.8	4

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 D Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	10	2.8	4
1,4-Dichlorobenzene	ND		ug/l	10	2.8	4
Methyl tert butyl ether	ND		ug/l	10	0.66	4
p/m-Xylene	ND		ug/l	10	2.8	4
o-Xylene	ND		ug/l	10	2.8	4
cis-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Styrene	ND		ug/l	10	2.8	4
Dichlorodifluoromethane	ND		ug/l	20	4.0	4
Acetone	32		ug/l	20	5.8	4
Carbon disulfide	ND		ug/l	20	4.0	4
2-Butanone	ND		ug/l	20	7.8	4
4-Methyl-2-pentanone	ND		ug/l	20	4.0	4
2-Hexanone	ND		ug/l	20	4.0	4
1,2-Dibromoethane	ND		ug/l	8.0	2.6	4
n-Butylbenzene	ND		ug/l	10	2.8	4
sec-Butylbenzene	ND		ug/l	10	2.8	4
tert-Butylbenzene	ND		ug/l	10	2.8	4
1,2-Dibromo-3-chloropropane	ND		ug/l	10	2.8	4
Isopropylbenzene	ND		ug/l	10	2.8	4
p-Isopropyltoluene	ND		ug/l	10	2.8	4
Naphthalene	ND		ug/l	10	2.8	4
n-Propylbenzene	ND		ug/l	10	2.8	4
1,2,4-Trichlorobenzene	ND		ug/l	10	2.8	4
1,3,5-Trimethylbenzene	ND		ug/l	10	2.8	4
1,2,4-Trimethylbenzene	ND		ug/l	10	2.8	4
Methyl Acetate	ND		ug/l	8.0	0.94	4
Cyclohexane	ND		ug/l	40	1.1	4
Freon-113	ND		ug/l	10	2.8	4
Methyl cyclohexane	ND		ug/l	40	1.6	4

Tentatively Identified Compounds						
Total TIC Compounds	74.8	J	ug/l			4
Unknown	17.0	J	ug/l			4
Unknown	49.2	J	ug/l			4
Unknown Alkene	8.60	J	ug/l			4

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 D
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	116		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-39
Client ID: TRIP BLANK
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/13/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 10/27/25 15:55
Analyst: KAB

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-39 Date Collected: 10/13/25 00:00

Client ID: TRIP BLANK Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-39 Date Collected: 10/13/25 00:00

Client ID: TRIP BLANK Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	107		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/27/25 09:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 39 Batch: WG2133851-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/27/25 09:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 39 Batch: WG2133851-5					
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/27/25 09:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 39 Batch: WG2133851-5					
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	106		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:09
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2134489-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:09
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2134489-5					
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:09
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2134489-5					
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40
Tentatively Identified Compounds					
Total TIC Compounds	6.43	J	ug/l		
Unknown	6.43	J	ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	116		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:16
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 12 Batch: WG2134850-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.37	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:16
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 12 Batch: WG2134850-5					
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:16
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 12 Batch: WG2134850-5					
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60
Tentatively Identified Compounds					
Total TIC Compounds	5.66	J	ug/kg		
Unknown	5.66	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	97		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:12
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 04 Batch: WG2134890-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.81	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:12
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 04 Batch: WG2134890-5					
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/29/25 09:12
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 04 Batch: WG2134890-5					
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	126		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/25 09:41
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 34 Batch: WG2135210-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.77	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/25 09:41
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 34 Batch: WG2135210-5					
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 10/30/25 09:41
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 34 Batch: WG2135210-5					
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Tentatively Identified Compounds			
Total TIC Compounds	16.5	J	ug/kg
Unknown	3.48	J	ug/kg
Unknown	9.11	J	ug/kg
Cyclotrisiloxane, Hexamethyl-	3.87	NJ	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 39 Batch: WG2133851-3 WG2133851-4								
Methylene chloride	96		96		70-130	0		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		96		70-130	4		20
Carbon tetrachloride	88		84		63-132	5		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	100		88		63-130	13		20
1,1,2-Trichloroethane	120		99		70-130	19		20
Tetrachloroethene	110		83		70-130	**28**	Q	20
Chlorobenzene	96		90		75-130	6		20
Trichlorofluoromethane	94		93		62-150	1		20
1,2-Dichloroethane	100		110		70-130	10		20
1,1,1-Trichloroethane	94		92		67-130	2		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	110		89		70-130	**21**	Q	20
cis-1,3-Dichloropropene	85		85		70-130	0		20
Bromoform	73		89		54-136	20		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	99		96		70-130	3		20
Toluene	97		94		70-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 39 Batch: WG2133851-3 WG2133851-4								
Ethylbenzene	93		96		70-130	3		20
Chloromethane	89		89		64-130	0		20
Bromomethane	75		66		39-139	13		20
Vinyl chloride	100		100		55-140	0		20
Chloroethane	110		100		55-138	10		20
1,1-Dichloroethene	91		88		61-145	3		20
trans-1,2-Dichloroethene	92		94		70-130	2		20
Trichloroethene	93		95		70-130	2		20
1,2-Dichlorobenzene	93		85		70-130	9		20
1,3-Dichlorobenzene	92		88		70-130	4		20
1,4-Dichlorobenzene	92		86		70-130	7		20
Methyl tert butyl ether	78		84		63-130	7		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	90		110		70-130	20		20
cis-1,2-Dichloroethene	97		93		70-130	4		20
Styrene	95		105		70-130	10		20
Dichlorodifluoromethane	67		63		36-147	6		20
Acetone	120		120		58-148	0		20
Carbon disulfide	100		96		51-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 39 Batch: WG2133851-3 WG2133851-4								
2-Butanone	110		110		63-138	0		20
4-Methyl-2-pentanone	90		83		59-130	8		20
2-Hexanone	100		91		57-130	9		20
1,2-Dibromoethane	100		91		70-130	9		20
n-Butylbenzene	98		92		53-136	6		20
sec-Butylbenzene	93		87		70-130	7		20
tert-Butylbenzene	89		84		70-130	6		20
1,2-Dibromo-3-chloropropane	78		82		41-144	5		20
Isopropylbenzene	91		100		70-130	9		20
p-Isopropyltoluene	84		78		70-130	7		20
Naphthalene	81		83		70-130	2		20
n-Propylbenzene	98		91		69-130	7		20
1,2,4-Trichlorobenzene	76		74		70-130	3		20
1,3,5-Trimethylbenzene	96		89		64-130	8		20
1,2,4-Trimethylbenzene	96		89		70-130	8		20
Methyl Acetate	100		100		70-130	0		20
Cyclohexane	100		97		70-130	3		20
Freon-113	96		92		70-130	4		20
Methyl cyclohexane	86		85		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 39 Batch: WG2133851-3 WG2133851-4

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	116		116		70-130
Toluene-d8	108		105		70-130
4-Bromofluorobenzene	108		116		70-130
Dibromofluoromethane	103		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2134489-3 WG2134489-4								
Methylene chloride	91		96		70-130	5		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	97		100		70-130	3		20
Carbon tetrachloride	97		99		63-132	2		20
1,2-Dichloropropane	96		94		70-130	2		20
Dibromochloromethane	81		79		63-130	3		20
1,1,2-Trichloroethane	85		86		70-130	1		20
Tetrachloroethene	85		85		70-130	0		20
Chlorobenzene	92		91		75-130	1		20
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	100		110		70-130	10		20
1,1,1-Trichloroethane	99		100		67-130	1		20
Bromodichloromethane	90		86		67-130	5		20
trans-1,3-Dichloropropene	84		80		70-130	5		20
cis-1,3-Dichloropropene	85		85		70-130	0		20
Bromoform	69		70		54-136	1		20
1,1,2,2-Tetrachloroethane	82		83		67-130	1		20
Benzene	88		87		70-130	1		20
Toluene	92		94		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2134489-3 WG2134489-4								
Ethylbenzene	95		95		70-130	0		20
Chloromethane	96		100		64-130	4		20
Bromomethane	82		81		39-139	1		20
Vinyl chloride	98		100		55-140	2		20
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	97		100		61-145	3		20
trans-1,2-Dichloroethene	97		97		70-130	0		20
Trichloroethene	86		83		70-130	4		20
1,2-Dichlorobenzene	88		90		70-130	2		20
1,3-Dichlorobenzene	89		88		70-130	1		20
1,4-Dichlorobenzene	90		92		70-130	2		20
Methyl tert butyl ether	83		84		63-130	1		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	94		95		70-130	1		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	82		84		36-147	2		20
Acetone	120		130		58-148	8		20
Carbon disulfide	99		100		51-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2134489-3 WG2134489-4								
2-Butanone	100		110		63-138	10		20
4-Methyl-2-pentanone	88		92		59-130	4		20
2-Hexanone	100		110		57-130	10		20
1,2-Dibromoethane	84		84		70-130	0		20
n-Butylbenzene	89		92		53-136	3		20
sec-Butylbenzene	90		90		70-130	0		20
tert-Butylbenzene	89		89		70-130	0		20
1,2-Dibromo-3-chloropropane	75		70		41-144	7		20
Isopropylbenzene	87		88		70-130	1		20
p-Isopropyltoluene	88		93		70-130	6		20
Naphthalene	81		83		70-130	2		20
n-Propylbenzene	91		91		69-130	0		20
1,2,4-Trichlorobenzene	87		88		70-130	1		20
1,3,5-Trimethylbenzene	89		89		64-130	0		20
1,2,4-Trimethylbenzene	88		89		70-130	1		20
Methyl Acetate	110		100		70-130	10		20
Cyclohexane	98		96		70-130	2		20
Freon-113	100		100		70-130	0		20
Methyl cyclohexane	83		83		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2134489-3 WG2134489-4

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	119		120		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	101		98		70-130
Dibromofluoromethane	110		105		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 12 Batch: WG2134850-3 WG2134850-4								
Methylene chloride	95		95		70-130	0		30
1,1-Dichloroethane	92		92		70-130	0		30
Chloroform	92		93		70-130	1		30
Carbon tetrachloride	100		100		70-130	0		30
1,2-Dichloropropane	94		94		70-130	0		30
Dibromochloromethane	107		107		70-130	0		30
1,1,2-Trichloroethane	103		104		70-130	1		30
Tetrachloroethene	108		110		70-130	2		30
Chlorobenzene	105		106		70-130	1		30
Trichlorofluoromethane	**152**	Q	**152**	Q	70-139	0		30
1,2-Dichloroethane	89		89		70-130	0		30
1,1,1-Trichloroethane	100		100		70-130	0		30
Bromodichloromethane	92		94		70-130	2		30
trans-1,3-Dichloropropene	104		105		70-130	1		30
cis-1,3-Dichloropropene	95		96		70-130	1		30
Bromoform	101		99		70-130	2		30
1,1,2,2-Tetrachloroethane	104		105		70-130	1		30
Benzene	96		96		70-130	0		30
Toluene	104		105		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 12 Batch: WG2134850-3 WG2134850-4								
Ethylbenzene	106		106		70-130	0		30
Chloromethane	86		84		52-130	2		30
Bromomethane	123		117		57-147	5		30
Vinyl chloride	93		92		67-130	1		30
Chloroethane	98		97		50-151	1		30
1,1-Dichloroethene	99		100		65-135	1		30
trans-1,2-Dichloroethene	95		96		70-130	1		30
Trichloroethene	95		95		70-130	0		30
1,2-Dichlorobenzene	109		108		70-130	1		30
1,3-Dichlorobenzene	108		108		70-130	0		30
1,4-Dichlorobenzene	108		109		70-130	1		30
Methyl tert butyl ether	95		95		66-130	0		30
p/m-Xylene	105		107		70-130	2		30
o-Xylene	104		107		70-130	3		30
cis-1,2-Dichloroethene	94		94		70-130	0		30
Styrene	105		106		70-130	1		30
Dichlorodifluoromethane	89		87		30-146	2		30
Acetone	71		68		54-140	4		30
Carbon disulfide	100		99		59-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 12 Batch: WG2134850-3 WG2134850-4								
2-Butanone	94		90		70-130	4		30
4-Methyl-2-pentanone	103		100		70-130	3		30
2-Hexanone	99		100		70-130	1		30
1,2-Dibromoethane	107		108		70-130	1		30
n-Butylbenzene	112		112		70-130	0		30
sec-Butylbenzene	113		114		70-130	1		30
tert-Butylbenzene	110		110		70-130	0		30
1,2-Dibromo-3-chloropropane	105		104		68-130	1		30
Isopropylbenzene	112		111		70-130	1		30
p-Isopropyltoluene	111		111		70-130	0		30
Naphthalene	108		107		70-130	1		30
n-Propylbenzene	107		109		70-130	2		30
1,2,4-Trichlorobenzene	110		108		70-130	2		30
1,3,5-Trimethylbenzene	106		108		70-130	2		30
1,2,4-Trimethylbenzene	108		108		70-130	0		30
Methyl Acetate	91		90		51-146	1		30
Cyclohexane	106		106		59-142	0		30
Freon-113	110		109		50-139	1		30
Methyl cyclohexane	104		103		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 12 Batch: WG2134850-3 WG2134850-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		91		70-130
Toluene-d8	105		107		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	94		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 Batch: WG2134890-3 WG2134890-4								
Methylene chloride	99		91		70-130	8		30
1,1-Dichloroethane	105		98		70-130	7		30
Chloroform	104		97		70-130	7		30
Carbon tetrachloride	126		119		70-130	6		30
1,2-Dichloropropane	100		95		70-130	5		30
Dibromochloromethane	117		115		70-130	2		30
1,1,2-Trichloroethane	111		108		70-130	3		30
Tetrachloroethene	**132**	Q	126		70-130	5		30
Chlorobenzene	108		105		70-130	3		30
Trichlorofluoromethane	97		91		70-139	6		30
1,2-Dichloroethane	108		105		70-130	3		30
1,1,1-Trichloroethane	117		111		70-130	5		30
Bromodichloromethane	109		103		70-130	6		30
trans-1,3-Dichloropropene	110		106		70-130	4		30
cis-1,3-Dichloropropene	98		95		70-130	3		30
Bromoform	110		112		70-130	2		30
1,1,2,2-Tetrachloroethane	100		99		70-130	1		30
Benzene	103		98		70-130	5		30
Toluene	101		97		70-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 Batch: WG2134890-3 WG2134890-4								
Ethylbenzene	103		100		70-130	3		30
Chloromethane	102		99		52-130	3		30
Bromomethane	66		60		57-147	10		30
Vinyl chloride	85		83		67-130	2		30
Chloroethane	73		70		50-151	4		30
1,1-Dichloroethene	80		77		65-135	4		30
trans-1,2-Dichloroethene	104		99		70-130	5		30
Trichloroethene	113		108		70-130	5		30
1,2-Dichlorobenzene	107		104		70-130	3		30
1,3-Dichlorobenzene	111		108		70-130	3		30
1,4-Dichlorobenzene	107		104		70-130	3		30
Methyl tert butyl ether	89		86		66-130	3		30
p/m-Xylene	108		103		70-130	5		30
o-Xylene	103		99		70-130	4		30
cis-1,2-Dichloroethene	98		96		70-130	2		30
Styrene	107		103		70-130	4		30
Dichlorodifluoromethane	100		95		30-146	5		30
Acetone	100		96		54-140	4		30
Carbon disulfide	77		73		59-130	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 Batch: WG2134890-3 WG2134890-4								
2-Butanone	123		126		70-130	2		30
4-Methyl-2-pentanone	91		87		70-130	4		30
2-Hexanone	85		87		70-130	2		30
1,2-Dibromoethane	111		108		70-130	3		30
n-Butylbenzene	108		105		70-130	3		30
sec-Butylbenzene	104		103		70-130	1		30
tert-Butylbenzene	99		97		70-130	2		30
1,2-Dibromo-3-chloropropane	98		100		68-130	2		30
Isopropylbenzene	91		93		70-130	2		30
p-Isopropyltoluene	101		100		70-130	1		30
Naphthalene	88		90		70-130	2		30
n-Propylbenzene	102		99		70-130	3		30
1,2,4-Trichlorobenzene	104		103		70-130	1		30
1,3,5-Trimethylbenzene	101		99		70-130	2		30
1,2,4-Trimethylbenzene	100		98		70-130	2		30
Methyl Acetate	128		124		51-146	3		30
Cyclohexane	114		108		59-142	5		30
Freon-113	97		90		50-139	7		30
Methyl cyclohexane	93		90		70-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 Batch: WG2134890-3 WG2134890-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		110		70-130
Toluene-d8	102		99		70-130
4-Bromofluorobenzene	93		85		70-130
Dibromofluoromethane	109		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 34 Batch: WG2135210-3 WG2135210-4								
Methylene chloride	88		86		70-130	2		30
1,1-Dichloroethane	104		102		70-130	2		30
Chloroform	94		93		70-130	1		30
Carbon tetrachloride	106		106		70-130	0		30
1,2-Dichloropropane	99		100		70-130	1		30
Dibromochloromethane	98		100		70-130	2		30
1,1,2-Trichloroethane	98		99		70-130	1		30
Tetrachloroethene	101		100		70-130	1		30
Chlorobenzene	101		100		70-130	1		30
Trichlorofluoromethane	118		113		70-139	4		30
1,2-Dichloroethane	109		108		70-130	1		30
1,1,1-Trichloroethane	112		111		70-130	1		30
Bromodichloromethane	105		106		70-130	1		30
trans-1,3-Dichloropropene	102		103		70-130	1		30
cis-1,3-Dichloropropene	104		106		70-130	2		30
Bromoform	95		97		70-130	2		30
1,1,2,2-Tetrachloroethane	102		103		70-130	1		30
Benzene	102		100		70-130	2		30
Toluene	99		98		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 34 Batch: WG2135210-3 WG2135210-4								
Ethylbenzene	104		104		70-130	0		30
Chloromethane	94		86		52-130	9		30
Bromomethane	98		90		57-147	9		30
Vinyl chloride	111		103		67-130	7		30
Chloroethane	102		96		50-151	6		30
1,1-Dichloroethene	105		102		65-135	3		30
trans-1,2-Dichloroethene	102		100		70-130	2		30
Trichloroethene	105		106		70-130	1		30
1,2-Dichlorobenzene	99		98		70-130	1		30
1,3-Dichlorobenzene	100		99		70-130	1		30
1,4-Dichlorobenzene	99		98		70-130	1		30
Methyl tert butyl ether	103		102		66-130	1		30
p/m-Xylene	104		103		70-130	1		30
o-Xylene	104		104		70-130	0		30
cis-1,2-Dichloroethene	98		98		70-130	0		30
Styrene	110		109		70-130	1		30
Dichlorodifluoromethane	92		86		30-146	7		30
Acetone	113		110		54-140	3		30
Carbon disulfide	98		95		59-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 34 Batch: WG2135210-3 WG2135210-4								
2-Butanone	100		100		70-130	0		30
4-Methyl-2-pentanone	99		101		70-130	2		30
2-Hexanone	110		113		70-130	3		30
1,2-Dibromoethane	98		100		70-130	2		30
n-Butylbenzene	109		106		70-130	3		30
sec-Butylbenzene	106		105		70-130	1		30
tert-Butylbenzene	103		103		70-130	0		30
1,2-Dibromo-3-chloropropane	90		92		68-130	2		30
Isopropylbenzene	106		106		70-130	0		30
p-Isopropyltoluene	106		105		70-130	1		30
Naphthalene	99		100		70-130	1		30
n-Propylbenzene	108		108		70-130	0		30
1,2,4-Trichlorobenzene	101		99		70-130	2		30
1,3,5-Trimethylbenzene	106		104		70-130	2		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30
Methyl Acetate	94		98		51-146	4		30
Cyclohexane	112		110		59-142	2		30
Freon-113	109		107		50-139	2		30
Methyl cyclohexane	110		109		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 34 Batch: WG2135210-3 WG2135210-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		109		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	102		102		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2134890-6 WG2134890-7 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Methylene chloride	ND	102	83	82		78	85		70-130	7		30
1,1-Dichloroethane	ND	102	100	98		94	103		70-130	7		30
Chloroform	0.25J	102	90	89		85	93		70-130	6		30
Carbon tetrachloride	ND	102	130	**132**	Q	130	**138**	Q	70-130	6		30
1,2-Dichloropropane	ND	102	92	90		87	95		70-130	6		30
Dibromochloromethane	ND	102	97	96		92	100		70-130	6		30
1,1,2-Trichloroethane	ND	102	90	89		85	93		70-130	6		30
Tetrachloroethene	ND	102	130	130		130	**140**	Q	70-130	3		30
Chlorobenzene	ND	102	95	94		91	100		70-130	5		30
Trichlorofluoromethane	ND	102	110	104		100	110		70-139	6		30
1,2-Dichloroethane	ND	102	90	88		83	91		70-130	8		30
1,1,1-Trichloroethane	ND	102	120	121		120	127		70-130	6		30
Bromodichloromethane	ND	102	91	89		85	94		70-130	6		30
trans-1,3-Dichloropropene	ND	102	93	92		87	95		70-130	7		30
cis-1,3-Dichloropropene	ND	102	97	95		90	98		70-130	8		30
Bromoform	ND	102	97	95		92	100		70-130	6		30
1,1,2,2-Tetrachloroethane	ND	102	81	80		77	85		70-130	5		30
Benzene	ND	102	100	100		97	106		70-130	6		30
Toluene	ND	102	100	100		96	106		70-130	6		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2134890-6 WG2134890-7 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Ethylbenzene	ND	102	100	98		97	106		70-130	3		30
Chloromethane	ND	102	100	102		97	107		52-130	7		30
Bromomethane	ND	102	58	57		56	61		57-147	5		30
Vinyl chloride	ND	102	100	98		92	101		67-130	8		30
Chloroethane	ND	102	75	73		73	80		50-151	2		30
1,1-Dichloroethene	ND	102	92	90		86	95		65-135	7		30
trans-1,2-Dichloroethene	ND	102	110	107		100	111		70-130	8		30
Trichloroethene	ND	102	110	110		100	114		70-130	7		30
1,2-Dichlorobenzene	ND	102	79	78		75	82		70-130	6		30
1,3-Dichlorobenzene	ND	102	83	81		78	86		70-130	5		30
1,4-Dichlorobenzene	ND	102	80	78		74	82		70-130	7		30
Methyl tert butyl ether	ND	102	81	80		75	83		66-130	7		30
p/m-Xylene	ND	203	200	97		190	104		70-130	4		30
o-Xylene	ND	203	190	92		180	98		70-130	4		30
cis-1,2-Dichloroethene	ND	102	96	95		90	98		70-130	7		30
Styrene	ND	203	180	89		170	94		70-130	6		30
Dichlorodifluoromethane	ND	102	120	113		110	115		30-146	9		30
Acetone	6.2J	102	84	83		77	85		54-140	8		30
Carbon disulfide	ND	102	81	80		75	82		59-130	8		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2134890-6 WG2134890-7 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
2-Butanone	ND	102	110	105		100	110		70-130	7		30
4-Methyl-2-pentanone	ND	102	83	82		81	89		70-130	3		30
2-Hexanone	ND	102	81	80		77	85		70-130	4		30
1,2-Dibromoethane	ND	102	93	92		88	97		70-130	6		30
n-Butylbenzene	ND	102	90	89		92	101		70-130	2		30
sec-Butylbenzene	ND	102	100	98		100	112		70-130	2		30
tert-Butylbenzene	ND	102	99	97		99	108		70-130	0		30
1,2-Dibromo-3-chloropropane	ND	102	82	80		78	86		68-130	4		30
Isopropylbenzene	ND	102	100	100		100	109		70-130	2		30
p-Isopropyltoluene	ND	102	94	92		94	103		70-130	0		30
Naphthalene	ND	102	69	**68**	Q	61	**66**	Q	70-130	13		30
n-Propylbenzene	ND	102	100	98		98	107		70-130	2		30
1,2,4-Trichlorobenzene	ND	102	59	**58**	Q	56	**62**	Q	70-130	5		30
1,3,5-Trimethylbenzene	ND	102	91	90		89	98		70-130	2		30
1,2,4-Trimethylbenzene	ND	102	87	86		84	93		70-130	3		30
Methyl Acetate	ND	102	100	100		100	111		51-146	1		30
Cyclohexane	ND	102	140	137		130	**147**	Q	59-142	4		30
Freon-113	ND	102	100	102		98	107		50-139	6		30
Methyl cyclohexane	ND	102	110	109		110	122		70-130	0		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2134890-6 WG2134890-7 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		102		70-130
4-Bromofluorobenzene	91		93		70-130
Dibromofluoromethane	101		98		70-130
Toluene-d8	100		100		70-130

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-01
Client ID: B-30_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:20
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 10:10
Analyst: AC
Percent Solids: 91%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.104	1
Perfluoropentanoic Acid (PFPeA)	0.050	J	ng/g	0.400	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.154	1
Perfluorohexanoic Acid (PFHxA)	0.042	JF	ng/g	0.200	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.084	J	ng/g	0.200	0.034	1
Perfluorooctanoic Acid (PFOA)	0.110	J	ng/g	0.200	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034	1
Perfluorononanoic Acid (PFNA)	0.074	J	ng/g	0.200	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.228		ng/g	0.200	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.236	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.160	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.284	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-01 Date Collected: 10/16/25 13:20

Client ID: B-30_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.152	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.242	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.928	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.64	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-01 Date Collected: 10/16/25 13:20

Client ID: B-30_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	112		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	99		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	94		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	90		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	79		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	78		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-02
Client ID: B-30_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:23
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 10:19
Analyst: AC
Percent Solids: 95%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.808	0.105	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.404	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.202	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.808	0.156	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.202	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.202	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.202	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	0.057	J	ng/g	0.202	0.034	1
Perfluorooctanoic Acid (PFOA)	0.113	J	ng/g	0.202	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.808	0.115	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.202	0.034	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.202	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.115	J	ng/g	0.202	0.047	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.202	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.808	0.238	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.202	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.202	0.097	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.202	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.202	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.202	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.202	0.079	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.202	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.202	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.202	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.808	0.162	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.808	0.287	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-02 Date Collected: 10/16/25 13:23

Client ID: B-30_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.202	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.808	0.154	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.808	0.244	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.202	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.202	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.02	0.253	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.02	0.244	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.404	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.404	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.404	0.049	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.404	0.121	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.01	0.350	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.05	0.938	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.05	1.66	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-02 Date Collected: 10/16/25 13:23

Client ID: B-30_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	108		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	95		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	85		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	80		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	95		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	75		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	63		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	57		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04
Client ID: B-30_9.0-10.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 10/21/25 07:10
Analyst: IMK
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	170	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Fluoranthene	100		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachlorocyclopentadiene	ND		ug/kg	490	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	150	25.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	26.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	59.	1
Butyl benzyl phthalate	ND		ug/kg	170	43.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	58.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	36.	1
Benzo(a)anthracene	44	J	ug/kg	100	19.	1
Benzo(a)pyrene	48	J	ug/kg	140	42.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	70	J	ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	50	J	ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	38	J	ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	39	J	ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	39	J	ug/kg	140	24.	1
Pyrene	74	J	ug/kg	100	17.	1
Biphenyl	ND		ug/kg	390	22.	1
4-Chloroaniline	ND		ug/kg	170	31.	1
2-Nitroaniline	ND		ug/kg	170	33.	1
3-Nitroaniline	ND		ug/kg	170	32.	1
4-Nitroaniline	ND		ug/kg	170	71.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	32.	1
p-Chloro-m-cresol	ND		ug/kg	170	26.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	150	28.	1
2,4-Dimethylphenol	ND		ug/kg	170	57.	1
2-Nitrophenol	ND		ug/kg	370	64.	1
4-Nitrophenol	ND		ug/kg	240	70.	1
2,4-Dinitrophenol	ND		ug/kg	820	80.	1
4,6-Dinitro-o-cresol	ND		ug/kg	450	82.	1
Pentachlorophenol	ND		ug/kg	140	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Carbazole	ND		ug/kg	170	17.	1
Atrazine	ND		ug/kg	140	60.	1
Benzaldehyde	ND		ug/kg	230	46.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	170	52.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	170	35.	1
1,4-Dioxane	ND		ug/kg	26	7.9	1
Tentatively Identified Compounds						
Total TIC Compounds	1650	J	ug/kg			1
Unknown	205	J	ug/kg			1
Unknown PAH	151	J	ug/kg			1
Unknown	208	J	ug/kg			1
Unknown Organic Acid	374	J	ug/kg			1
Unknown	235	J	ug/kg			1
Unknown Organic Acid	306	J	ug/kg			1
Unknown Alkane	172	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	65		25-120
Phenol-d6	66		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	60		30-120
2,4,6-Tribromophenol	69		10-136
4-Terphenyl-d14	65		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-05
Client ID: B-31_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 14:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 10:28
Analyst: AC
Percent Solids: 84%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.796	0.104	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.398	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.796	0.153	1
Perfluorohexanoic Acid (PFHxA)	0.038	J	ng/g	0.199	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.199	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.078	J	ng/g	0.199	0.034	1
Perfluorooctanoic Acid (PFOA)	0.088	J	ng/g	0.199	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.796	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.034	1
Perfluorononanoic Acid (PFNA)	0.082	J	ng/g	0.199	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.689		ng/g	0.199	0.046	1
Perfluorodecanoic Acid (PFDA)	0.070	J	ng/g	0.199	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.796	0.235	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.096	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.199	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.796	0.159	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.796	0.283	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-05 Date Collected: 10/16/25 14:35

Client ID: B-31_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.796	0.151	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.796	0.241	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.249	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.241	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.996	0.344	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.98	0.924	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.98	1.63	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-05 Date Collected: 10/16/25 14:35

Client ID: B-31_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	93		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	103		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	85		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	73		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	96		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	78		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	76		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-06
Client ID: B-31_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 14:38
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 10:37
Analyst: AC
Percent Solids: 91%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.789	0.103	1
Perfluoropentanoic Acid (PFPeA)	0.041	J	ng/g	0.395	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.197	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.789	0.152	1
Perfluorohexanoic Acid (PFHxA)	0.047	J	ng/g	0.197	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.197	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.197	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	0.075	J	ng/g	0.197	0.034	1
Perfluorooctanoic Acid (PFOA)	0.245		ng/g	0.197	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.789	0.112	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.197	0.034	1
Perfluorononanoic Acid (PFNA)	0.079	J	ng/g	0.197	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.334		ng/g	0.197	0.045	1
Perfluorodecanoic Acid (PFDA)	0.036	J	ng/g	0.197	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.789	0.233	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.197	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.197	0.095	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.197	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.197	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.197	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.197	0.077	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.197	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.197	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.197	0.041	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.789	0.158	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.789	0.280	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-06 Date Collected: 10/16/25 14:38

Client ID: B-31_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.197	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.789	0.150	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.789	0.239	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.197	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.197	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.97	0.247	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.97	0.239	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.395	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.395	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.395	0.047	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.395	0.118	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.987	0.341	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.93	0.916	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.93	1.62	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-06 Date Collected: 10/16/25 14:38

Client ID: B-31_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	102		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	96		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	107		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	89		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	100		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	86		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	84		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	100		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	77		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-09
Client ID: B-32_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:16
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 11:21
Analyst: AC
Percent Solids: 89%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.807	0.105	1
Perfluoropentanoic Acid (PFPeA)	0.050	J	ng/g	0.404	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.202	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.807	0.155	1
Perfluorohexanoic Acid (PFHxA)	0.036	JF	ng/g	0.202	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.202	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.202	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	0.149	J	ng/g	0.202	0.034	1
Perfluorooctanoic Acid (PFOA)	0.212		ng/g	0.202	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.807	0.115	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.202	0.034	1
Perfluorononanoic Acid (PFNA)	0.137	J	ng/g	0.202	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	1.43		ng/g	0.202	0.046	1
Perfluorodecanoic Acid (PFDA)	0.099	J	ng/g	0.202	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.807	0.238	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.202	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.202	0.097	1
Perfluoroundecanoic Acid (PFUnA)	0.081	JF	ng/g	0.202	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.202	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.202	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.202	0.079	1
Perfluorododecanoic Acid (PFDoA)	0.075	J	ng/g	0.202	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.202	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.202	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.807	0.161	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.807	0.286	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-09 Date Collected: 10/16/25 09:16

Client ID: B-32_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.202	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.807	0.153	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.807	0.244	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.202	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.202	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.02	0.252	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.02	0.244	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.404	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.404	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.404	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.404	0.121	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.01	0.349	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.04	0.936	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.04	1.65	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-09 Date Collected: 10/16/25 09:16

Client ID: B-32_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	107		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	94		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	90		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	80		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	69		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	61		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	68		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	61		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	46		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	55		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	49		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-10
Client ID: B-32_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:18
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/24/25 11:30
Analyst: AC
Percent Solids: 83%

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.789	0.103	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.395	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.197	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.789	0.152	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.197	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.197	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.197	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	0.071	J	ng/g	0.197	0.034	1
Perfluorooctanoic Acid (PFOA)	0.193	J	ng/g	0.197	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.789	0.112	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.197	0.034	1
Perfluorononanoic Acid (PFNA)	0.128	J	ng/g	0.197	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.434		ng/g	0.197	0.045	1
Perfluorodecanoic Acid (PFDA)	0.075	J	ng/g	0.197	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.789	0.233	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.197	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.197	0.095	1
Perfluoroundecanoic Acid (PFUnA)	0.079	J	ng/g	0.197	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.197	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.197	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.197	0.077	1
Perfluorododecanoic Acid (PFDoA)	0.038	J	ng/g	0.197	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.197	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.197	0.041	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.789	0.158	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.789	0.280	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-10 Date Collected: 10/16/25 09:18

Client ID: B-32_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.197	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.789	0.150	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.789	0.239	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.197	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.197	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.97	0.247	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.97	0.239	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.395	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.395	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.395	0.047	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.395	0.118	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.987	0.341	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.93	0.916	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.93	1.62	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-10 Date Collected: 10/16/25 09:18

Client ID: B-32_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	112		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	94		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	94		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	88		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	86		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	102		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	77		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12
Client ID: B-32_6.0-7.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:25
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 10/20/25 18:35
Analyst: HNY
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	45.	1
2,4-Dinitrotoluene	ND		ug/kg	170	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Fluoranthene	ND		ug/kg	100	19.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachlorocyclopentadiene	ND		ug/kg	480	150	1
Hexachloroethane	ND		ug/kg	140	27.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	20.	1
Nitrobenzene	ND		ug/kg	150	25.	1
NDPA/DPA	ND		ug/kg	140	19.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	26.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	58.	1
Butyl benzyl phthalate	ND		ug/kg	170	43.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	57.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	36.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1
Benzo(a)pyrene	ND		ug/kg	140	41.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	100	28.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	16.	1
Phenanthrene	ND		ug/kg	100	20.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	380	22.	1
4-Chloroaniline	ND		ug/kg	170	31.	1
2-Nitroaniline	ND		ug/kg	170	33.	1
3-Nitroaniline	ND		ug/kg	170	32.	1
4-Nitroaniline	ND		ug/kg	170	70.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	200	20.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	32.	1
p-Chloro-m-cresol	ND		ug/kg	170	25.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	150	27.	1
2,4-Dimethylphenol	ND		ug/kg	170	56.	1
2-Nitrophenol	ND		ug/kg	360	64.	1
4-Nitrophenol	ND		ug/kg	240	69.	1
2,4-Dinitrophenol	ND		ug/kg	810	79.	1
4,6-Dinitro-o-cresol	ND		ug/kg	440	81.	1
Pentachlorophenol	ND		ug/kg	140	37.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	32.	1
Carbazole	ND		ug/kg	170	16.	1
Atrazine	ND		ug/kg	140	59.	1
Benzaldehyde	ND		ug/kg	220	46.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	170	51.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	170	34.	1
1,4-Dioxane	ND		ug/kg	25	7.8	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		25-120
Phenol-d6	67		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	60		30-120
2,4,6-Tribromophenol	73		10-136
4-Terphenyl-d14	67		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-22
Client ID: B-36_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:06
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 15:12
Analyst: ANH
Percent Solids: 92%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.155	J	ng/g	0.795	0.103	1
Perfluoropentanoic Acid (PFPeA)	0.050	J	ng/g	0.397	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.795	0.153	1
Perfluorohexanoic Acid (PFHxA)	0.042	JF	ng/g	0.199	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.199	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.048	J	ng/g	0.199	0.034	1
Perfluorooctanoic Acid (PFOA)	0.228		ng/g	0.199	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.795	0.113	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.034	1
Perfluorononanoic Acid (PFNA)	0.143	J	ng/g	0.199	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.489		ng/g	0.199	0.046	1
Perfluorodecanoic Acid (PFDA)	0.089	J	ng/g	0.199	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.795	0.234	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.095	1
Perfluoroundecanoic Acid (PFUnA)	0.091	J	ng/g	0.199	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	0.036	J	ng/g	0.199	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.795	0.159	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.795	0.282	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-22 Date Collected: 10/16/25 15:06

Client ID: B-36_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.795	0.151	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.795	0.240	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.248	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.240	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.397	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.397	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.397	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.397	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.994	0.344	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	0.922	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.63	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-22 Date Collected: 10/16/25 15:06

Client ID: B-36_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	75		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	64		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	71		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-23
Client ID: B-36_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:08
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 15:20
Analyst: ANH
Percent Solids: 93%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.796	0.103	1
Perfluoropentanoic Acid (PFPeA)	0.060	J	ng/g	0.398	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.796	0.153	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.199	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.199	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.044	J	ng/g	0.199	0.034	1
Perfluorooctanoic Acid (PFOA)	0.159	J	ng/g	0.199	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.796	0.113	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.034	1
Perfluorononanoic Acid (PFNA)	0.042	J	ng/g	0.199	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.189	J	ng/g	0.199	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.199	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.796	0.235	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.096	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.199	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.796	0.159	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.796	0.282	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-23 Date Collected: 10/16/25 15:08

Client ID: B-36_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.796	0.151	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.796	0.241	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.249	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.241	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.994	0.344	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	0.923	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.63	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-23 Date Collected: 10/16/25 15:08

Client ID: B-36_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	94		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	94		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	95		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	68		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-25
Client ID: B-37_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:40
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 15:29
Analyst: ANH
Percent Solids: 86%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.122	J	ng/g	0.786	0.102	1
Perfluoropentanoic Acid (PFPeA)	0.067	J	ng/g	0.393	0.039	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.196	0.035	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.786	0.151	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.196	0.033	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.196	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.196	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	0.051	J	ng/g	0.196	0.033	1
Perfluorooctanoic Acid (PFOA)	0.210		ng/g	0.196	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.786	0.112	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.196	0.033	1
Perfluorononanoic Acid (PFNA)	0.171	J	ng/g	0.196	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.501		ng/g	0.196	0.045	1
Perfluorodecanoic Acid (PFDA)	0.110	J	ng/g	0.196	0.031	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.786	0.232	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.196	0.092	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.196	0.094	1
Perfluoroundecanoic Acid (PFUnA)	0.116	J	ng/g	0.196	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.196	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.196	0.037	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.196	0.077	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.196	0.035	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.196	0.031	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.196	0.041	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.786	0.157	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.786	0.279	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-25 Date Collected: 10/16/25 10:40

Client ID: B-37_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.196	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.786	0.149	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.786	0.238	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.196	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.196	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.96	0.245	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.96	0.238	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.393	0.035	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.393	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.393	0.047	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.393	0.118	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.982	0.340	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.91	0.911	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.91	1.61	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-25 Date Collected: 10/16/25 10:40

Client ID: B-37_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	77		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	91		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	90		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	74		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	86		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-26
Client ID: B-37_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:42
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 15:38
Analyst: ANH
Percent Solids: 88%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.155	J	ng/g	0.807	0.105	1
Perfluoropentanoic Acid (PFPeA)	0.105	J	ng/g	0.404	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.202	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.807	0.155	1
Perfluorohexanoic Acid (PFHxA)	0.087	J	ng/g	0.202	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.202	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.109	J	ng/g	0.202	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	0.069	J	ng/g	0.202	0.034	1
Perfluorooctanoic Acid (PFOA)	0.381		ng/g	0.202	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.807	0.115	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.202	0.034	1
Perfluorononanoic Acid (PFNA)	0.214		ng/g	0.202	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.468		ng/g	0.202	0.046	1
Perfluorodecanoic Acid (PFDA)	0.117	J	ng/g	0.202	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.807	0.238	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.202	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.202	0.097	1
Perfluoroundecanoic Acid (PFUnA)	0.137	J	ng/g	0.202	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.202	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.202	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.202	0.079	1
Perfluorododecanoic Acid (PFDoA)	0.053	J	ng/g	0.202	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	0.044	J	ng/g	0.202	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.202	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.807	0.161	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.807	0.286	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-26 Date Collected: 10/16/25 10:42

Client ID: B-37_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.202	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.807	0.153	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.807	0.244	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.202	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.202	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.02	0.252	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.02	0.244	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.404	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.404	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.404	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.404	0.121	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.01	0.349	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.04	0.936	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.04	1.65	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-26 Date Collected: 10/16/25 10:42

Client ID: B-37_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	78		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	85		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	85		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	75		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	76		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	75		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	70		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	61		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	62		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-28
Client ID: B-38_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:20
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 16:09
Analyst: ANH
Percent Solids: 95%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.129	J	ng/g	0.809	0.105	1
Perfluoropentanoic Acid (PFPeA)	0.075	J	ng/g	0.405	0.041	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.202	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.809	0.156	1
Perfluorohexanoic Acid (PFHxA)	0.071	J	ng/g	0.202	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.202	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.103	J	ng/g	0.202	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	0.049	J	ng/g	0.202	0.034	1
Perfluorooctanoic Acid (PFOA)	0.467		ng/g	0.202	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.809	0.115	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.202	0.034	1
Perfluorononanoic Acid (PFNA)	0.172	J	ng/g	0.202	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.320		ng/g	0.202	0.047	1
Perfluorodecanoic Acid (PFDA)	0.077	J	ng/g	0.202	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.809	0.239	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.202	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.202	0.097	1
Perfluoroundecanoic Acid (PFUnA)	0.085	J	ng/g	0.202	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.202	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.202	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.202	0.079	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.202	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.202	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.202	0.043	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.809	0.162	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.809	0.287	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-28 Date Collected: 10/16/25 10:20

Client ID: B-38_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.202	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.809	0.154	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.809	0.245	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.202	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.202	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.02	0.253	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.02	0.245	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.405	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.405	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.405	0.049	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.405	0.121	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.01	0.350	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.06	0.939	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.06	1.66	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-28 Date Collected: 10/16/25 10:20

Client ID: B-38_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	81		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	78		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	82		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	57		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-29
Client ID: B-38_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:23
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 16:18
Analyst: ANH
Percent Solids: 93%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.123	J	ng/g	0.804	0.104	1
Perfluoropentanoic Acid (PFPeA)	0.056	J	ng/g	0.402	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.201	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.804	0.155	1
Perfluorohexanoic Acid (PFHxA)	0.060	J	ng/g	0.201	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.201	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.201	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.201	0.034	1
Perfluorooctanoic Acid (PFOA)	0.275		ng/g	0.201	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.804	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.201	0.034	1
Perfluorononanoic Acid (PFNA)	0.042	J	ng/g	0.201	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.110	J	ng/g	0.201	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.201	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.804	0.237	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.201	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.201	0.097	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.201	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.201	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.201	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.201	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.201	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.201	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.201	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.804	0.161	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.804	0.285	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-29 Date Collected: 10/16/25 10:23

Client ID: B-38_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.201	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.804	0.153	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.804	0.243	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.201	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.201	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.01	0.251	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.01	0.243	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.402	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.402	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.402	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.402	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.348	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.02	0.932	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.02	1.65	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-29 Date Collected: 10/16/25 10:23

Client ID: B-38_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	95		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	90		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	83		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	86		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	72		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	68		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	60		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-31
Client ID: B-39_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 16:27
Analyst: ANH
Percent Solids: 91%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.798	0.104	1
Perfluoropentanoic Acid (PFPeA)	0.048	J	ng/g	0.399	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.798	0.154	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.070	J	ng/g	0.200	0.034	1
Perfluorooctanoic Acid (PFOA)	0.148	J	ng/g	0.200	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.798	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034	1
Perfluorononanoic Acid (PFNA)	0.182	J	ng/g	0.200	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.619		ng/g	0.200	0.046	1
Perfluorodecanoic Acid (PFDA)	0.074	J	ng/g	0.200	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.798	0.235	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096	1
Perfluoroundecanoic Acid (PFUnA)	0.080	J	ng/g	0.200	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078	1
Perfluorododecanoic Acid (PFDoA)	0.042	J	ng/g	0.200	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.798	0.160	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.798	0.283	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-31 Date Collected: 10/16/25 09:50

Client ID: B-39_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.798	0.152	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.798	0.241	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.249	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.241	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.399	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.399	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.399	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.399	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.998	0.345	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.99	0.926	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.99	1.64	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-31 Date Collected: 10/16/25 09:50

Client ID: B-39_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	87		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	92		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	89		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	82		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	95		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	88		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	80		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	67		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-32
Client ID: B-39_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:52
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 16:36
Analyst: ANH
Percent Solids: 92%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.792	0.103	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.396	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.198	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.792	0.152	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.198	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.198	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.198	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	0.164	J	ng/g	0.198	0.034	1
Perfluorooctanoic Acid (PFOA)	0.196	J	ng/g	0.198	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.792	0.113	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.198	0.034	1
Perfluorononanoic Acid (PFNA)	0.042	J	ng/g	0.198	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.188	J	ng/g	0.198	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.198	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.792	0.234	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.198	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.198	0.095	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.198	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.198	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.198	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.198	0.077	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.198	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.198	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.198	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.792	0.158	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.792	0.281	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-32 Date Collected: 10/16/25 09:52

Client ID: B-39_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.198	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.792	0.150	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.792	0.239	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.198	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.198	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.98	0.247	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.98	0.239	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.396	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.396	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.396	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.396	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.989	0.342	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.95	0.918	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.95	1.62	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-32 Date Collected: 10/16/25 09:52

Client ID: B-39_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	78		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	96		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	78		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 10/30/25 20:01
Analyst: HNY
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 10/27/25 04:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	170	35.	1
2,6-Dinitrotoluene	ND		ug/kg	170	30.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	60.	1
Butyl benzyl phthalate	ND		ug/kg	170	44.	1
Di-n-butylphthalate	ND		ug/kg	170	33.	1
Di-n-octylphthalate	ND		ug/kg	170	59.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	36.	1
Benzo(a)anthracene	ND		ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	42.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	400	22.	1
4-Chloroaniline	ND		ug/kg	170	32.	1
2-Nitroaniline	ND		ug/kg	170	33.	1
3-Nitroaniline	ND		ug/kg	170	33.	1
4-Nitroaniline	ND		ug/kg	170	72.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	170	26.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	170	57.	1
2-Nitrophenol	ND		ug/kg	380	65.	1
4-Nitrophenol	ND		ug/kg	240	71.	1
2,4-Dinitrophenol	ND		ug/kg	830	81.	1
4,6-Dinitro-o-cresol	ND		ug/kg	450	83.	1
Pentachlorophenol	ND		ug/kg	140	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Carbazole	ND		ug/kg	170	17.	1
Atrazine	ND		ug/kg	140	61.	1
Benzaldehyde	ND		ug/kg	230	47.	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	170	53.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	170	35.	1
1,4-Dioxane	ND		ug/kg	26	8.0	1
Tentatively Identified Compounds						
Total TIC Compounds	648	J	ug/kg			1
Unknown	162	J	ug/kg			1
Unknown	166	J	ug/kg			1
Unknown	167	J	ug/kg			1
Unknown	153	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	95		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	83		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 10/23/25 17:03
Analyst: ANH
Percent Solids: 95%

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.803	0.104	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.401	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.201	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.803	0.154	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.201	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.201	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.201	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.038	J	ng/g	0.201	0.034	1
Perfluorooctanoic Acid (PFOA)	0.102	J	ng/g	0.201	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.803	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.201	0.034	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.201	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.078	J	ng/g	0.201	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.201	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.803	0.237	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.201	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.201	0.096	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.201	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.201	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.201	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.201	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.201	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.201	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.201	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.803	0.160	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.803	0.285	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.201	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.803	0.152	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.803	0.243	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.201	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.201	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.01	0.251	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.01	0.243	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.401	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.401	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.401	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.401	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.347	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.02	0.931	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.02	1.64	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	93		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	97		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	84		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	61		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	92		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-36
Client ID: M&S_EB01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:30
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 168,1633A
Analytical Date: 10/30/25 08:23
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/22/25 08:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	5.81	2.16	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.90	0.537	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.45	0.465	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.81	1.35	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.45	0.348	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.45	0.334	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.45	0.450	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.45	0.247	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.45	0.363	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.81	2.95	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.45	0.450	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.45	0.218	1
Perfluorooctanesulfonic Acid (PFOS)	0.421	J	ng/l	1.45	0.247	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.45	0.378	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.81	2.77	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.45	0.218	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.45	1.04	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.45	0.348	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.45	0.247	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.45	0.290	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.45	0.668	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.45	0.406	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.45	0.247	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.45	0.174	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.81	0.857	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.81	1.13	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-36 Date Collected: 10/16/25 08:30

Client ID: M&S_EB01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.45	0.305	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.81	0.639	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.81	0.436	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.45	0.566	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.45	0.421	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.5	1.54	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.5	1.28	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.90	0.131	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.90	0.755	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.90	0.363	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.90	0.857	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.26	1.87	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.3	10.4	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.3	11.0	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-36 Date Collected: 10/16/25 08:30

Client ID: M&S_EB01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		5-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	73		40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	99		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		40-200
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	74		40-200
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	74		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	69		40-300
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	56		40-170
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76		30-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	54		25-135
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		10-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		10-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	74		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		10-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	71		10-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E
Analytical Date: 10/21/25 04:09
Analyst: SMZ

Extraction Method: EPA 3510C
Extraction Date: 10/19/25 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.39	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.8	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.54	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.84	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.39	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.24	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.40	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.84	1
Hexachlorocyclopentadiene	ND		ug/l	20	1.2	1
Isophorone	ND		ug/l	5.0	0.86	1
Nitrobenzene	ND		ug/l	2.0	0.20	1
NDPA/DPA	ND		ug/l	2.0	0.92	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.91	1
Bis(2-ethylhexyl)phthalate	5.8		ug/l	3.0	1.4	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.6	1
Di-n-butylphthalate	ND		ug/l	5.0	0.96	1
Di-n-octylphthalate	ND		ug/l	5.0	2.3	1
Diethyl phthalate	ND		ug/l	5.0	0.76	1
Dimethyl phthalate	ND		ug/l	5.0	0.92	1
Biphenyl	ND		ug/l	2.0	0.20	1
4-Chloroaniline	ND		ug/l	5.0	0.47	1
2-Nitroaniline	ND		ug/l	5.0	1.0	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.4	1
Dibenzofuran	ND		ug/l	2.0	0.40	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.24	1
Acetophenone	ND		ug/l	5.0	0.92	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	2.1	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.61	1
2-Chlorophenol	ND		ug/l	2.0	0.65	1
2,4-Dichlorophenol	ND		ug/l	5.0	1.7	1
2,4-Dimethylphenol	ND		ug/l	5.0	2.0	1
2-Nitrophenol	ND		ug/l	10	2.0	1
4-Nitrophenol	ND		ug/l	10	1.4	1
2,4-Dinitrophenol	ND		ug/l	20	5.4	1
4,6-Dinitro-o-cresol	ND		ug/l	10	2.3	1
Phenol	1.8	J	ug/l	5.0	0.35	1
2-Methylphenol	ND		ug/l	5.0	2.3	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	2.1	1
Carbazole	ND		ug/l	2.0	0.31	1
Atrazine	ND		ug/l	10	1.0	1
Benzaldehyde	ND		ug/l	5.0	1.1	1
Caprolactam	ND		ug/l	10	1.2	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	2.2	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	359	J	ug/l			1
Unknown Alkane	9.10	J	ug/l			1
Unknown Organic Acid	33.8	J	ug/l			1
Unknown	11.1	J	ug/l			1
Unknown	36.5	J	ug/l			1
Unknown Amide	13.6	J	ug/l			1
Unknown	27.1	J	ug/l			1
Unknown Organic Acid	24.6	J	ug/l			1
Unknown	14.9	J	ug/l			1
Unknown Organic Acid	25.5	J	ug/l			1
Unknown	9.80	J	ug/l			1
Unknown Organic Acid	12.2	J	ug/l			1
Unknown Organic Acid	51.2	J	ug/l			1
Unknown	11.7	J	ug/l			1
Unknown	28.9	J	ug/l			1
Unknown	48.6	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	36		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	61		15-120
2,4,6-Tribromophenol	68		10-120
4-Terphenyl-d14	74		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 10/21/25 18:55
Analyst: DMC

Extraction Method: EPA 3510C
Extraction Date: 10/20/25 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270E-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	288	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	36		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 10/26/25 20:38
Analyst: MRG
Extraction Method: EPA 3510C
Extraction Date: 10/19/25 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.02	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.03	J	ug/l	0.10	0.03	1
Hexachlorobutadiene	ND		ug/l	0.50	0.02	1
Naphthalene	0.06	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.10	0.03	1
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03	1
Chrysene	ND		ug/l	0.10	0.03	1
Acenaphthylene	ND		ug/l	0.10	0.02	1
Anthracene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.02	1
Fluorene	ND		ug/l	0.10	0.03	1
Phenanthrene	0.07	J	ug/l	0.10	0.04	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02	1
Pyrene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.03	1
Pentachlorophenol	0.18	J	ug/l	0.80	0.06	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.02	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	46		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	99		10-120
4-Terphenyl-d14	83		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 168,1633A
Analytical Date: 10/30/25 08:31
Analyst: AC
Extraction Method: EPA 1633
Extraction Date: 10/22/25 08:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.21		ng/l	5.96	2.22	1
Perfluoropentanoic Acid (PFPeA)	10.8		ng/l	2.98	0.551	1
Perfluorobutanesulfonic Acid (PFBS)	1.34	J	ng/l	1.49	0.477	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.96	1.38	1
Perfluorohexanoic Acid (PFHxA)	16.1		ng/l	1.49	0.357	1
Perfluoropentanesulfonic Acid (PFPeS)	0.387	JF	ng/l	1.49	0.342	1
Perfluoroheptanoic Acid (PFHpA)	2.08		ng/l	1.49	0.462	1
Perfluorohexanesulfonic Acid (PFHxS)	1.58		ng/l	1.49	0.253	1
Perfluorooctanoic Acid (PFOA)	3.23		ng/l	1.49	0.372	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.96	3.02	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.49	0.462	1
Perfluorononanoic Acid (PFNA)	0.774	J	ng/l	1.49	0.223	1
Perfluorooctanesulfonic Acid (PFOS)	3.78		ng/l	1.49	0.253	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.49	0.387	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.96	2.84	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.49	0.223	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.49	1.07	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.49	0.357	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.49	0.253	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.49	0.298	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.49	0.685	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.49	0.417	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.49	0.253	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.49	0.179	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.96	0.879	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.96	1.16	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.49	0.313	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.96	0.655	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.96	0.447	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.49	0.581	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.49	0.432	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.9	1.58	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	2.01	J	ng/l	14.9	1.31	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.98	0.134	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.98	0.774	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	2.98	0.372	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.98	0.879	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.45	1.92	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.2	10.7	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.2	11.2	1

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87		5-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	75		40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	**270**	Q	40-200
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	**264**	Q	40-200
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	98		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	138		40-300
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	74		40-170
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		30-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	123		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	51		25-135
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84		10-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	**149**	Q	10-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	112		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	112		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	117		10-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	114		10-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/18/25 12:54
Analyst: LJG

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2129462-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.39
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.8
2,4-Dinitrotoluene	ND		ug/l	5.0	0.54
2,6-Dinitrotoluene	ND		ug/l	5.0	0.84
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.39
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.24
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.40
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.84
Hexachlorocyclopentadiene	ND		ug/l	20	1.2
Isophorone	ND		ug/l	5.0	0.86
Nitrobenzene	ND		ug/l	2.0	0.20
NDPA/DPA	ND		ug/l	2.0	0.92
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.91
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.4
Butyl benzyl phthalate	ND		ug/l	5.0	2.6
Di-n-butylphthalate	ND		ug/l	5.0	0.96
Di-n-octylphthalate	ND		ug/l	5.0	2.3
Diethyl phthalate	ND		ug/l	5.0	0.76
Dimethyl phthalate	ND		ug/l	5.0	0.92
Biphenyl	ND		ug/l	2.0	0.20
4-Chloroaniline	ND		ug/l	5.0	0.47
2-Nitroaniline	ND		ug/l	5.0	1.0
3-Nitroaniline	ND		ug/l	5.0	1.2
4-Nitroaniline	ND		ug/l	5.0	1.4

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/18/25 12:54
Analyst: LJG

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2129462-1					
Dibenzofuran	ND		ug/l	2.0	0.40
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.24
Acetophenone	ND		ug/l	5.0	0.92
2,4,6-Trichlorophenol	ND		ug/l	5.0	2.1
p-Chloro-m-cresol	ND		ug/l	2.0	0.61
2-Chlorophenol	ND		ug/l	2.0	0.65
2,4-Dichlorophenol	ND		ug/l	5.0	1.7
2,4-Dimethylphenol	ND		ug/l	5.0	2.0
2-Nitrophenol	ND		ug/l	10	2.0
4-Nitrophenol	ND		ug/l	10	1.4
2,4-Dinitrophenol	ND		ug/l	20	5.4
4,6-Dinitro-o-cresol	ND		ug/l	10	2.3
Phenol	ND		ug/l	5.0	0.35
2-Methylphenol	ND		ug/l	5.0	2.3
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4
2,4,5-Trichlorophenol	ND		ug/l	5.0	2.1
Carbazole	ND		ug/l	2.0	0.31
Atrazine	ND		ug/l	10	1.0
Benzaldehyde	ND		ug/l	5.0	1.1
Caprolactam	ND		ug/l	10	1.2
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	2.2

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/18/25 12:54
Analyst: LJG

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2129462-1					
Tentatively Identified Compounds					
Total TIC Compounds	129	J	ug/l		
Unknown Alcohol	6.90	J	ug/l		
Unknown	8.20	J	ug/l		
Unknown Alkane	5.50	J	ug/l		
Unknown	6.10	J	ug/l		
Unknown	7.90	J	ug/l		
Unknown	7.30	J	ug/l		
Unknown Organic Acid	12.9	J	ug/l		
Unknown	14.0	J	ug/l		
Unknown	5.70	J	ug/l		
Unknown	15.6	J	ug/l		
Unknown	14.9	J	ug/l		
Unknown Organic Acid	5.30	J	ug/l		
Unknown	6.00	J	ug/l		
Unknown Alkane	8.50	J	ug/l		
Unknown	4.40	J	ug/l		

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/18/25 12:54
Analyst: LJG

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 38 Batch: WG2129462-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	39		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	60		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	70		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 10/19/25 02:53
Analyst: CSN

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 38 Batch: WG2129463-1					
Acenaphthene	ND		ug/l	0.10	0.02
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.03
Hexachlorobutadiene	ND		ug/l	0.50	0.02
Naphthalene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.10	0.03
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03
Chrysene	ND		ug/l	0.10	0.03
Acenaphthylene	ND		ug/l	0.10	0.02
Anthracene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.02
Fluorene	ND		ug/l	0.10	0.03
Phenanthrene	ND		ug/l	0.10	0.04
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02
Pyrene	ND		ug/l	0.10	0.04
2-Methylnaphthalene	ND		ug/l	0.10	0.03
Pentachlorophenol	ND		ug/l	0.80	0.06
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.02

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 10/19/25 02:53
Analyst: CSN

Extraction Method: EPA 3510C
Extraction Date: 10/18/25 05:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 38 Batch: WG2129463-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	41		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	90		15-120
2,4,6-Tribromophenol	**139**	Q	10-120
4-Terphenyl-d14	78		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/20/25 14:03
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04,12 Batch: WG2129697-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/20/25 14:03
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04,12 Batch: WG2129697-1					
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	21.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/20/25 14:03
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04,12 Batch: WG2129697-1					
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	44.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.
1,4-Dioxane	ND		ug/kg	25	7.6

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/20/25 14:03
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/19/25 01:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04,12 Batch: WG2129697-1					
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	72		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 10/21/25 08:10
Analyst: DMC

Extraction Method: EPA 3510C
Extraction Date: 10/20/25 11:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270E-SIM - Mansfield Lab for sample(s): 38 Batch: WG2130029-1					
1,4-Dioxane	ND		ng/l	300	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/24/25 07:18
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-02,05-06,09-10 Batch: WG2130808-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.104
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.040
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.154
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.034
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072
Perfluorohexanesulfonic Acid (PFHxS)	0.036	J	ng/g	0.200	0.034
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.044
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.114
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.024
Perfluorooctanesulfonic Acid (PFOS)	0.046	J	ng/g	0.200	0.046
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.032
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.236
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.056
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.036

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/24/25 07:18
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-02,05-06,09-10 Batch: WG2130808-1					
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.032
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.042
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.160
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.284
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.152
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.242
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.036
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.052
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.048
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.120
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.928
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.64

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/24/25 07:18
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/21/25 18:20
Cleanup Method: EPA 1633
Cleanup Date: 10/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-02,05-06,09-10 Batch: WG2130808-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	109		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	90		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	94		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	79		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	89		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	62		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	81		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		15-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/30/25 05:48
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/22/25 08:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 36,38 Batch: WG2130878-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	2.38
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.592
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.512
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.49
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.384
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.368
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.496
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.272
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.400
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	3.25
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.496
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.240
Perfluorooctanesulfonic Acid (PFOS)	0.304	J	ng/l	1.60	0.272
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.416
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	3.06
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.240
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	1.15
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.384
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.272
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.320
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.736
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.448
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.272

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/30/25 05:48
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/22/25 08:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 36,38 Batch: WG2130878-1					
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.192
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.944
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.25
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.336
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	0.704
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	0.480
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.624
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.464
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	1.70
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.41
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.144
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.832
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.400
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	0.944
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.06
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	11.5
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	12.1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/30/25 05:48
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 10/22/25 08:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 36,38 Batch: WG2130878-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	92		5-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	107		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		40-200
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	91		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	98		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87		40-200
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	73		40-300
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	59		40-170
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	74		30-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	57		25-135
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		10-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		10-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	67		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73		10-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		10-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/23/25 14:18
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.104
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.040
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.154
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.034
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072
Perfluorohexanesulfonic Acid (PFHxS)	0.034	J	ng/g	0.200	0.034
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.044
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.114
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.024
Perfluorooctanesulfonic Acid (PFOS)	0.058	J	ng/g	0.200	0.046
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.032
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.236
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.056
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.036

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/23/25 14:18
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-1					
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.032
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.042
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.160
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.284
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.152
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.242
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.036
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.052
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.048
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.120
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.928
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.64

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
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Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 10/23/25 14:18
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 10/22/25 17:50
Cleanup Method: EPA 1633
Cleanup Date: 10/22/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	75		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	78		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	77		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	83		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	89		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	74		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	75		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	71		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	54		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67		15-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
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Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/27/25 20:58
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/27/25 04:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 34 Batch: WG2133011-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/27/25 20:58
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/27/25 04:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 34 Batch: WG2133011-1					
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	21.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/27/25 20:58
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/27/25 04:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 34 Batch: WG2133011-1					
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	44.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.
1,4-Dioxane	ND		ug/kg	25	7.6

Project Name: HVRA
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Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 10/27/25 20:58
Analyst: HNY

Extraction Method: EPA 3546
Extraction Date: 10/27/25 04:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 34 Batch: WG2133011-1					
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	61		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	74		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2129462-2 WG2129462-3								
Bis(2-chloroethyl)ether	70		82		40-140	16		30
3,3'-Dichlorobenzidine	68		84		40-140	21		30
2,4-Dinitrotoluene	99		103		48-143	4		30
2,6-Dinitrotoluene	77		85		40-140	10		30
4-Chlorophenyl phenyl ether	83		91		40-140	9		30
4-Bromophenyl phenyl ether	82		93		40-140	13		30
Bis(2-chloroisopropyl)ether	62		68		40-140	9		30
Bis(2-chloroethoxy)methane	72		82		40-140	13		30
Hexachlorocyclopentadiene	44		55		40-140	22		30
Isophorone	84		91		40-140	8		30
Nitrobenzene	82		93		40-140	13		30
NDPA/DPA	88		94		40-140	7		30
n-Nitrosodi-n-propylamine	80		87		29-132	8		30
Bis(2-ethylhexyl)phthalate	107		122		40-140	13		30
Butyl benzyl phthalate	99		112		40-140	12		30
Di-n-butylphthalate	93		100		40-140	7		30
Di-n-octylphthalate	103		118		40-140	14		30
Diethyl phthalate	89		98		40-140	10		30
Dimethyl phthalate	77		84		40-140	9		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2129462-2 WG2129462-3								
Biphenyl	66		76		40-140	14		30
4-Chloroaniline	64		60		40-140	6		30
2-Nitroaniline	89		100		52-143	12		30
3-Nitroaniline	90		97		25-145	7		30
4-Nitroaniline	102		117		51-143	14		30
Dibenzofuran	80		88		40-140	10		30
1,2,4,5-Tetrachlorobenzene	60		72		2-134	18		30
Acetophenone	79		88		39-129	11		30
2,4,6-Trichlorophenol	85		96		30-130	12		30
p-Chloro-m-cresol	94		**100**	Q	23-97	6		30
2-Chlorophenol	82		92		27-123	11		30
2,4-Dichlorophenol	85		92		30-130	8		30
2,4-Dimethylphenol	78		88		30-130	12		30
2-Nitrophenol	90		104		30-130	14		30
4-Nitrophenol	78		**86**	Q	10-80	10		30
2,4-Dinitrophenol	54		40		20-130	30		30
4,6-Dinitro-o-cresol	78		73		20-164	7		30
Phenol	48		54		12-110	12		30
2-Methylphenol	82		90		30-130	9		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 38 Batch: WG2129462-2 WG2129462-3								
3-Methylphenol/4-Methylphenol	75		86		30-130	14		30
2,4,5-Trichlorophenol	90		104		30-130	14		30
Carbazole	86		94		55-144	9		30
Atrazine	76		88		40-140	15		30
Benzaldehyde	127		137		40-140	8		30
Caprolactam	42		35		10-130	18		30
2,3,4,6-Tetrachlorophenol	91		100		40-140	9		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		72		21-120
Phenol-d6	48		51		10-120
Nitrobenzene-d5	81		88		23-120
2-Fluorobiphenyl	64		76		15-120
2,4,6-Tribromophenol	84		103		10-120
4-Terphenyl-d14	89		98		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab	Associated sample(s): 38		Batch:		WG2129463-2	WG2129463-3		
Acenaphthene	93		112		40-140	19		40
2-Chloronaphthalene	96		117		40-140	20		40
Fluoranthene	95		109		40-140	14		40
Hexachlorobutadiene	69		94		40-140	31		40
Naphthalene	72		92		40-140	24		40
Benzo(a)anthracene	110		128		40-140	15		40
Benzo(a)pyrene	119		138		40-140	15		40
Benzo(b)fluoranthene	117		133		40-140	13		40
Benzo(k)fluoranthene	117		139		40-140	17		40
Chrysene	110		126		40-140	14		40
Acenaphthylene	105		126		40-140	18		40
Anthracene	112		131		40-140	16		40
Benzo(ghi)perylene	114		132		40-140	15		40
Fluorene	98		115		40-140	16		40
Phenanthrene	92		108		40-140	16		40
Dibenzo(a,h)anthracene	120		139		40-140	15		40
Indeno(1,2,3-cd)pyrene	125		**145**	Q	40-140	15		40
Pyrene	92		106		40-140	14		40
2-Methylnaphthalene	84		105		40-140	22		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab	Associated sample(s): 38		Batch:	WG2129463-2	WG2129463-3			
Pentachlorophenol	136		**152**	Q	40-140	11		40
Hexachlorobenzene	116		137		40-140	17		40
Hexachloroethane	62		84		40-140	30		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44		59		21-120
Phenol-d6	45		55		10-120
Nitrobenzene-d5	96		115		23-120
2-Fluorobiphenyl	89		106		15-120
2,4,6-Tribromophenol	**160**	Q	**186**	Q	10-120
4-Terphenyl-d14	78		90		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 Batch: WG2129697-2 WG2129697-3								
Acenaphthene	65		80		31-137	21		50
Hexachlorobenzene	63		79		40-140	23		50
Bis(2-chloroethyl)ether	70		88		40-140	23		50
2-Chloronaphthalene	65		80		40-140	21		50
3,3'-Dichlorobenzidine	48		55		40-140	14		50
2,4-Dinitrotoluene	81		101		40-132	22		50
2,6-Dinitrotoluene	80		98		40-140	20		50
Fluoranthene	66		82		40-140	22		50
4-Chlorophenyl phenyl ether	61		76		40-140	22		50
4-Bromophenyl phenyl ether	63		79		40-140	23		50
Bis(2-chloroisopropyl)ether	99		125		40-140	23		50
Bis(2-chloroethoxy)methane	74		90		40-117	20		50
Hexachlorobutadiene	58		74		40-140	24		50
Hexachlorocyclopentadiene	58		71		40-140	20		50
Hexachloroethane	72		89		40-140	21		50
Isophorone	77		94		40-140	20		50
Naphthalene	63		77		40-140	20		50
Nitrobenzene	76		95		40-140	22		50
NDPA/DPA	67		82		36-157	20		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 Batch: WG2129697-2 WG2129697-3								
n-Nitrosodi-n-propylamine	79		98		32-121	21		50
Bis(2-ethylhexyl)phthalate	76		93		40-140	20		50
Butyl benzyl phthalate	73		89		40-140	20		50
Di-n-butylphthalate	78		97		40-140	22		50
Di-n-octylphthalate	79		96		40-140	19		50
Diethyl phthalate	72		89		40-140	21		50
Dimethyl phthalate	68		82		40-140	19		50
Benzo(a)anthracene	67		82		40-140	20		50
Benzo(a)pyrene	72		87		40-140	19		50
Benzo(b)fluoranthene	73		87		40-140	18		50
Benzo(k)fluoranthene	65		82		40-140	23		50
Chrysene	68		84		40-140	21		50
Acenaphthylene	66		81		40-140	20		50
Anthracene	66		82		40-140	22		50
Benzo(ghi)perylene	65		81		40-140	22		50
Fluorene	67		83		40-140	21		50
Phenanthrene	64		79		40-140	21		50
Dibenzo(a,h)anthracene	66		81		40-140	20		50
Indeno(1,2,3-cd)pyrene	73		90		40-140	21		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 Batch: WG2129697-2 WG2129697-3								
Pyrene	66		81		35-142	20		50
Biphenyl	65		80		37-127	21		50
4-Chloroaniline	62		73		40-140	16		50
2-Nitroaniline	83		101		47-134	20		50
3-Nitroaniline	59		67		26-129	13		50
4-Nitroaniline	73		89		41-125	20		50
Dibenzofuran	63		78		40-140	21		50
2-Methylnaphthalene	67		83		40-140	21		50
1,2,4,5-Tetrachlorobenzene	64		79		40-117	21		50
Acetophenone	75		95		14-144	24		50
2,4,6-Trichlorophenol	75		93		30-130	21		50
p-Chloro-m-cresol	75		91		26-103	19		50
2-Chlorophenol	75		94		25-102	22		50
2,4-Dichlorophenol	77		96		30-130	22		50
2,4-Dimethylphenol	77		94		30-130	20		50
2-Nitrophenol	98		122		30-130	22		50
4-Nitrophenol	93		**120**	Q	11-114	25		50
2,4-Dinitrophenol	96		118		4-130	21		50
4,6-Dinitro-o-cresol	101		123		10-130	20		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 Batch: WG2129697-2 WG2129697-3								
Pentachlorophenol	57		70		17-109	20		50
Phenol	71		88		26-90	21		50
2-Methylphenol	75		91		30-130	19		50
3-Methylphenol/4-Methylphenol	80		98		30-130	20		50
2,4,5-Trichlorophenol	74		91		30-130	21		50
Carbazole	67		82		54-128	20		50
Atrazine	88		107		40-140	19		50
Benzaldehyde	64		81		40-140	23		50
Caprolactam	95		117		15-130	21		50
2,3,4,6-Tetrachlorophenol	74		91		40-140	21		50
1,4-Dioxane	51		63		40-140	21		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		88		25-120
Phenol-d6	75		87		10-120
Nitrobenzene-d5	80		94		23-120
2-Fluorobiphenyl	62		71		30-120
2,4,6-Tribromophenol	75		88		10-136
4-Terphenyl-d14	64		75		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270E-SIM - Mansfield Lab	Associated sample(s): 38		Batch: WG2130029-2		WG2130029-3			
1,4-Dioxane	120		123		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	25		26		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	92		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	98		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	92		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	92		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	88		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	84		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	92		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	92		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	98		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	90		-		65-155	-		
Perfluorononanoic Acid (PFNA)	92		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	104		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	100		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	86		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	128		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	88		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-2 LOW LEVEL								
Perfluorodecanesulfonic Acid (PFDS)	80		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	90		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	92		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	84		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	70		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	96		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	94		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	98		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	71		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	100		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	95		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	88		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	90		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	96		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	88		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	85		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-2 LOW LEVEL								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	82		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	90		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	92		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	78		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	90		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	86		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	106				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	97				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	92				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	98				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	95				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	77				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	97				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	78				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	76				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	83				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-3								
Perfluorobutanoic Acid (PFBA)	95		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	93		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	84		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	90		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	90		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	96		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	86		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	90		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	100		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	101		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	83		-		65-155	-		
Perfluorononanoic Acid (PFNA)	91		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	85		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	84		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	92		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	81		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	96		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	90		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-3								
Perfluorodecanesulfonic Acid (PFDS)	73		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	88		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	90		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	65		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	86		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	90		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	97		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	62		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	86		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	79		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	88		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	94		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	91		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	86		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	88		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-3								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	83		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	85		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	90		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	87		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	91		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	88		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-02,05-06,09-10 Batch: WG2130808-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	102				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	80				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	108				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	102				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	96		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	102		-		65-135	-		
Perfluorobutanesulfonic Acid (PFBS)	98		-		60-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	90		-		70-145	-		
Perfluorohexanoic Acid (PFHxA)	95		-		70-145	-		
Perfluoropentanesulfonic Acid (PFPeS)	122		-		65-140	-		
Perfluoroheptanoic Acid (PFHpA)	114		-		70-150	-		
Perfluorohexanesulfonic Acid (PFHxS)	100		-		65-145	-		
Perfluorooctanoic Acid (PFOA)	88		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	108		-		65-155	-		
Perfluoroheptanesulfonic Acid (PFHpS)	106		-		70-150	-		
Perfluorononanoic Acid (PFNA)	98		-		70-150	-		
Perfluorooctanesulfonic Acid (PFOS)	107		-		55-150	-		
Perfluorodecanoic Acid (PFDA)	91		-		70-140	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	96		-		60-150	-		
Perfluorononanesulfonic Acid (PFNS)	78		-		65-145	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	114		-		50-140	-		
Perfluoroundecanoic Acid (PFUnA)	96		-		70-145	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-2 LOW LEVEL								
Perfluorodecanesulfonic Acid (PFDS)	81		-		60-145	-		
Perfluorooctanesulfonamide (PFOSA)	104		-		70-145	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	96		-		70-145	-		
Perfluorododecanoic Acid (PFDoA)	98		-		70-140	-		
Perfluorotridecanoic Acid (PFTrDA)	99		-		65-140	-		
Perfluorotetradecanoic Acid (PFTeDA)	102		-		60-140	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	96		-		70-140	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	102		-		65-145	-		
Perfluorododecanesulfonic Acid (PFDoS)	72		-		50-145	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	97		-		70-155	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	86		-		55-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	102		-		60-150	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	97		-		65-145	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	102		-		70-145	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	100		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		55-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-2 LOW LEVEL								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	100		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	89		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	88		-		50-150	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	86		-		65-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	94		-		70-135	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	72		-		50-145	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	93				5-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	81				40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	109				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93				40-200
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	96				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	94				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97				40-200
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	76				40-300
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	59				40-170
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	70				30-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	72				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	57				25-135
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	62				10-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59				10-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69				10-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-3								
Perfluorobutanoic Acid (PFBA)	98		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	92		-		65-135	-		
Perfluorobutanesulfonic Acid (PFBS)	103		-		60-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	91		-		70-145	-		
Perfluorohexanoic Acid (PFHxA)	94		-		70-145	-		
Perfluoropentanesulfonic Acid (PFPeS)	98		-		65-140	-		
Perfluoroheptanoic Acid (PFHpA)	93		-		70-150	-		
Perfluorohexanesulfonic Acid (PFHxS)	92		-		65-145	-		
Perfluorooctanoic Acid (PFOA)	89		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	95		-		65-155	-		
Perfluoroheptanesulfonic Acid (PFHpS)	92		-		70-150	-		
Perfluorononanoic Acid (PFNA)	93		-		70-150	-		
Perfluorooctanesulfonic Acid (PFOS)	95		-		55-150	-		
Perfluorodecanoic Acid (PFDA)	95		-		70-140	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	107		-		60-150	-		
Perfluorononanesulfonic Acid (PFNS)	85		-		65-145	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	95		-		50-140	-		
Perfluoroundecanoic Acid (PFUnA)	97		-		70-145	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-3								
Perfluorodecanesulfonic Acid (PFDS)	81		-		60-145	-		
Perfluorooctanesulfonamide (PFOSA)	96		-		70-145	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	105		-		70-145	-		
Perfluorododecanoic Acid (PFDoA)	92		-		70-140	-		
Perfluorotridecanoic Acid (PFTrDA)	94		-		65-140	-		
Perfluorotetradecanoic Acid (PFTeDA)	99		-		60-140	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	102		-		70-140	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	86		-		65-145	-		
Perfluorododecanesulfonic Acid (PFDoS)	85		-		50-145	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	98		-		70-155	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	92		-		55-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	99		-		60-150	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	99		-		65-145	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	97		-		70-145	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	95		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	100		-		55-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L2566083
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-3								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	94		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	82		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	80		-		50-150	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	85		-		65-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	96		-		70-135	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	71		-		50-145	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 36,38 Batch: WG2130878-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79				5-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	67				40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	69				40-200
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	79				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	76				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	81				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	73				40-200
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	73				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	78				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	60				40-300
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	55				40-170
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	72				30-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	56				25-135
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66				10-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65				10-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	63				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65				10-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	67				10-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	108		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	105		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	119		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	101		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	106		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	105		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	96		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	111		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	120		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	132		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	104		-		65-155	-		
Perfluorononanoic Acid (PFNA)	96		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	112		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	103		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	99		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	106		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-2 LOW LEVEL								
Perfluorodecanesulfonic Acid (PFDS)	94		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	106		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	112		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	96		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	74		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	98		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	101		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	112		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	90		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	115		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	96		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	118		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	102		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	100		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	102		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	106		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-2 LOW LEVEL								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	106		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	97		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	107		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	97		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	93		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	87		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	90				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	81				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	90				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	86				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	74				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-3								
Perfluorobutanoic Acid (PFBA)	98		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	103		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	95		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	108		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	100		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	94		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	98		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	96		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	93		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	98		-		65-155	-		
Perfluorononanoic Acid (PFNA)	100		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	100		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	101		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	113		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	97		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	104		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	100		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-3								
Perfluorodecanesulfonic Acid (PFDS)	83		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	97		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	110		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	97		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	76		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	104		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	100		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	104		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	85		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	88		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	106		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	102		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	102		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	102		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	96		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

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Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-3								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	107		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	111		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	116		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	103		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	102		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	93		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 Batch: WG2131351-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	90				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	87				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	88				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	83				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	93				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	60				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	73				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 34 Batch: WG2133011-2 WG2133011-3								
Acenaphthene	96		82		31-137	16		50
Hexachlorobenzene	99		81		40-140	20		50
Bis(2-chloroethyl)ether	100		84		40-140	17		50
2-Chloronaphthalene	89		77		40-140	14		50
3,3'-Dichlorobenzidine	71		66		40-140	7		50
2,4-Dinitrotoluene	126		103		40-132	20		50
2,6-Dinitrotoluene	106		89		40-140	17		50
Fluoranthene	94		79		40-140	17		50
4-Chlorophenyl phenyl ether	93		75		40-140	21		50
4-Bromophenyl phenyl ether	96		79		40-140	19		50
Bis(2-chloroisopropyl)ether	106		89		40-140	17		50
Bis(2-chloroethoxy)methane	104		89		40-117	16		50
Hexachlorobutadiene	73		60		40-140	20		50
Hexachlorocyclopentadiene	62		49		40-140	23		50
Hexachloroethane	97		80		40-140	19		50
Isophorone	94		81		40-140	15		50
Naphthalene	88		76		40-140	15		50
Nitrobenzene	105		87		40-140	19		50
NDPA/DPA	100		84		36-157	17		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 34 Batch: WG2133011-2 WG2133011-3								
n-Nitrosodi-n-propylamine	103		87		32-121	17		50
Bis(2-ethylhexyl)phthalate	117		97		40-140	19		50
Butyl benzyl phthalate	113		100		40-140	12		50
Di-n-butylphthalate	103		94		40-140	9		50
Di-n-octylphthalate	116		100		40-140	15		50
Diethyl phthalate	109		85		40-140	25		50
Dimethyl phthalate	90		78		40-140	14		50
Benzo(a)anthracene	89		75		40-140	17		50
Benzo(a)pyrene	98		81		40-140	19		50
Benzo(b)fluoranthene	93		82		40-140	13		50
Benzo(k)fluoranthene	94		77		40-140	20		50
Chrysene	91		80		40-140	13		50
Acenaphthylene	92		78		40-140	16		50
Anthracene	95		84		40-140	12		50
Benzo(ghi)perylene	92		78		40-140	16		50
Fluorene	102		80		40-140	24		50
Phenanthrene	95		78		40-140	20		50
Dibenzo(a,h)anthracene	92		77		40-140	18		50
Indeno(1,2,3-cd)pyrene	93		80		40-140	15		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 34 Batch: WG2133011-2 WG2133011-3								
Pyrene	94		81		35-142	15		50
Biphenyl	90		77		37-127	16		50
4-Chloroaniline	78		64		40-140	20		50
2-Nitroaniline	120		99		47-134	19		50
3-Nitroaniline	107		94		26-129	13		50
4-Nitroaniline	121		95		41-125	24		50
Dibenzofuran	97		80		40-140	19		50
2-Methylnaphthalene	90		76		40-140	17		50
1,2,4,5-Tetrachlorobenzene	82		70		40-117	16		50
Acetophenone	106		86		14-144	21		50
2,4,6-Trichlorophenol	88		77		30-130	13		50
p-Chloro-m-cresol	99		88		26-103	12		50
2-Chlorophenol	**105**	Q	86		25-102	20		50
2,4-Dichlorophenol	105		85		30-130	21		50
2,4-Dimethylphenol	104		86		30-130	19		50
2-Nitrophenol	118		99		30-130	18		50
4-Nitrophenol	**141**	Q	110		11-114	25		50
2,4-Dinitrophenol	**158**	Q	125		4-130	23		50
4,6-Dinitro-o-cresol	**144**	Q	121		10-130	17		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 34 Batch: WG2133011-2 WG2133011-3								
Pentachlorophenol	108		89		17-109	19		50
Phenol	**99**	Q	86		26-90	14		50
2-Methylphenol	108		89		30-130	19		50
3-Methylphenol/4-Methylphenol	120		97		30-130	21		50
2,4,5-Trichlorophenol	94		80		30-130	16		50
Carbazole	98		86		54-128	13		50
Atrazine	109		88		40-140	21		50
Benzaldehyde	92		79		40-140	15		50
Caprolactam	**139**	Q	118		15-130	16		50
2,3,4,6-Tetrachlorophenol	101		82		40-140	21		50
1,4-Dioxane	89		68		40-140	27		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	106		90		25-120
Phenol-d6	102		89		10-120
Nitrobenzene-d5	103		86		23-120
2-Fluorobiphenyl	82		70		30-120
2,4,6-Tribromophenol	95		79		10-136
4-Terphenyl-d14	90		77		18-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129697-4 WG2129697-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Acenaphthene	ND	1360	1000	73		960	69		31-137	4		50
Hexachlorobenzene	ND	1360	950	70		920	66		40-140	3		50
Bis(2-chloroethyl)ether	ND	1360	1100	81		1000	72		40-140	10		50
2-Chloronaphthalene	ND	1360	980	72		930	67		40-140	5		50
3,3'-Dichlorobenzidine	ND	1360	840	62		780	56		40-140	7		50
2,4-Dinitrotoluene	ND	1360	1200	88		1200	87		40-132	0		50
2,6-Dinitrotoluene	ND	1360	1100	81		1100	79		40-140	0		50
Fluoranthene	100	1360	1000	73		980	71		40-140	2		50
4-Chlorophenyl phenyl ether	ND	1360	950	70		900	65		40-140	5		50
4-Bromophenyl phenyl ether	ND	1360	980	72		930	67		40-140	5		50
Bis(2-chloroisopropyl)ether	ND	1360	1600	120		1500	110		40-140	6		50
Bis(2-chloroethoxy)methane	ND	1360	1100	81		1000	72		40-117	10		50
Hexachlorobutadiene	ND	1360	930	68		860	62		40-140	8		50
Hexachlorocyclopentadiene	ND	1360	790	58		740	53		40-140	7		50
Hexachloroethane	ND	1360	1200	88		1000	72		40-140	18		50
Isophorone	ND	1360	1100	81		1100	79		40-140	0		50
Naphthalene	ND	1360	980	72		920	66		40-140	6		50
Nitrobenzene	ND	1360	1200	88		1100	79		40-140	9		50
NDPA/DPA	ND	1360	1000	73		970	70		36-157	3		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129697-4 WG2129697-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
n-Nitrosodi-n-propylamine	ND	1360	1200	88		1100	79		32-121	9		50
Bis(2-ethylhexyl)phthalate	ND	1360	1200	88		1200	87		40-140	0		50
Butyl benzyl phthalate	ND	1360	1100	81		1100	79		40-140	0		50
Di-n-butylphthalate	ND	1360	1200	88		1200	87		40-140	0		50
Di-n-octylphthalate	ND	1360	1200	88		1200	87		40-140	0		50
Diethyl phthalate	ND	1360	1100	81		1100	79		40-140	0		50
Dimethyl phthalate	ND	1360	970	71		940	68		40-140	3		50
Benzo(a)anthracene	44J	1360	1000	73		980	71		40-140	2		50
Benzo(a)pyrene	48J	1360	1100	81		1000	72		40-140	10		50
Benzo(b)fluoranthene	70J	1360	1100	81		1100	79		40-140	0		50
Benzo(k)fluoranthene	ND	1360	1000	73		950	69		40-140	5		50
Chrysene	50J	1360	1000	73		1000	72		40-140	0		50
Acenaphthylene	ND	1360	960	70		930	67		40-140	3		50
Anthracene	ND	1360	1000	73		980	71		40-140	2		50
Benzo(ghi)perylene	38J	1360	1000	73		1000	72		40-140	0		50
Fluorene	ND	1360	1000	73		970	70		40-140	3		50
Phenanthrene	39J	1360	1000	73		950	69		40-140	5		50
Dibenzo(a,h)anthracene	ND	1360	1000	73		1000	72		40-140	0		50
Indeno(1,2,3-cd)pyrene	39J	1360	1100	81		1100	79		40-140	0		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129697-4 WG2129697-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Pyrene	74J	1360	980	72		960	69		35-142	2		50
Biphenyl	ND	1360	970	71		930	67		37-127	4		50
4-Chloroaniline	ND	1360	850	62		790	57		40-140	7		50
2-Nitroaniline	ND	1360	1200	88		1200	87		47-134	0		50
3-Nitroaniline	ND	1360	920	67		870	63		26-129	6		50
4-Nitroaniline	ND	1360	1000	73		1000	72		41-125	0		50
Dibenzofuran	ND	1360	970	71		920	66		40-140	5		50
2-Methylnaphthalene	ND	1360	1000	73		960	69		40-140	4		50
1,2,4,5-Tetrachlorobenzene	ND	1360	960	70		910	66		40-117	5		50
Acetophenone	ND	1360	1100	81		1100	79		14-144	0		50
2,4,6-Trichlorophenol	ND	1360	1100	81		1000	72		30-130	10		50
p-Chloro-m-cresol	ND	1360	1100	81		1000	72		26-103	10		50
2-Chlorophenol	ND	1360	1100	81		1000	72		25-102	10		50
2,4-Dichlorophenol	ND	1360	1100	81		1000	72		30-130	10		50
2,4-Dimethylphenol	ND	1360	930	68		870	63		30-130	7		50
2-Nitrophenol	ND	1360	1400	100		1300	94		30-130	7		50
4-Nitrophenol	ND	1360	1400	100		1400	100		11-114	0		50
2,4-Dinitrophenol	ND	1360	580J	42		520J	38		4-130	11		50
4,6-Dinitro-o-cresol	ND	1360	1200	88		1100	79		10-130	9		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Client ID: B-30_9.0-10.0	Associated sample(s): 04,12		QC Batch ID: WG2129697-4			WG2129697-5			QC Sample: L2566083-04			
Pentachlorophenol	ND	1360	760	56		760	55		17-109	0		50
Phenol	ND	1360	1000	73		960	69		26-90	4		50
2-Methylphenol	ND	1360	1000	73		970	70		30-130	3		50
3-Methylphenol/4-Methylphenol	ND	1360	1100	81		1000	72		30-130	10		50
2,4,5-Trichlorophenol	ND	1360	1000	73		1000	72		30-130	0		50
Carbazole	ND	1360	1000	73		980	71		54-128	2		50
Atrazine	ND	1360	1300	95		1300	94		40-140	0		50
Benzaldehyde	ND	1360	1000	73		970	70		40-140	3		50
Caprolactam	ND	1360	1300	95		1300	94		15-130	0		50
2,3,4,6-Tetrachlorophenol	ND	1360	1100	81		1100	79		40-140	0		50
1,4-Dioxane	ND	1360	860	63		740	53		40-140	15		50

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	77		75		10-136
2-Fluorobiphenyl	65		61		30-120
2-Fluorophenol	77		70		25-120
4-Terphenyl-d14	69		66		18-120
Nitrobenzene-d5	87		79		23-120
Phenol-d6	75		70		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 QC Batch ID: WG2131351-4 WG2131351-5 QC Sample: L2566083-32 Client ID: B-39_0.17-1.0												
Perfluorobutanoic Acid (PFBA)	ND	19.8	19.0	96		18.9	96		70-140	1		30
Perfluoropentanoic Acid (PFPeA)	ND	9.89	9.65	98		9.99	101		60-150	3		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.39	4.31	98		4.23	96		65-145	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	18.6	19.0	102		18.8	101		60-150	1		30
Perfluorohexanoic Acid (PFHxA)	ND	4.95	4.43	90		5.22	106		65-140	16		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	4.67	4.24	91		4.50	96		55-160	6		30
Perfluoroheptanoic Acid (PFHpA)	ND	4.95	4.82	97		5.15	104		65-145	7		30
Perfluorohexanesulfonic Acid (PFHxS)	0.164J	4.55	4.52	96		4.35	92		60-150	4		30
Perfluorooctanoic Acid (PFOA)	0.196J	4.95	5.14	100		4.93	96		70-150	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	18.8	19.1	101		23.0	122		55-200	19		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	4.71	4.46	95		4.62	98		65-155	4		30
Perfluorononanoic Acid (PFNA)	0.042J	4.95	5.10	102		4.98	100		70-155	2		30
Perfluorooctanesulfonic Acid (PFOS)	0.188J	4.59	4.52	94		4.55	95		65-160	1		30
Perfluorodecanoic Acid (PFDA)	ND	4.95	4.84	98		5.01	101		70-155	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	19	20.2	106		20.9	110		70-150	3		30
Perfluorononanesulfonic Acid (PFNS)	ND	4.79	4.53	95		4.58	96		55-140	1		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 QC Batch ID: WG2131351-4 WG2131351-5 QC Sample: L2566083-32 Client ID: B-39_0.17-1.0												
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	4.95	4.97	100		5.54	112		65-155	11		30
Perfluoroundecanoic Acid (PFUnA)	ND	4.95	4.98	101		5.14	104		70-155	3		30
Perfluorodecanesulfonic Acid (PFDS)	ND	4.79	4.12	86		4.25	89		40-155	3		30
Perfluorooctanesulfonamide (PFOSA)	ND	4.95	4.66	94		4.85	98		70-140	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	4.95	5.32	108		5.38	109		65-165	1		30
Perfluorododecanoic Acid (PFDoA)	ND	4.95	4.96	100		4.95	100		70-150	0		30
Perfluorotridecanoic Acid (PFTrDA)	ND	4.95	3.78	76		3.85	78		65-150	2		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	4.95	5.07	102		4.88	99		65-150	4		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	19.8	21.0	106		20.5	104		70-145	2		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	18.7	19.1	102		20.7	111		70-160	8		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	4.83	3.90	81		3.96	82		25-160	2		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	18.5	19.2	104		20.0	108		70-150	4		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	18.7	16.2	87		16.7	89		45-160	3		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	4.95	5.07	102		5.03	102		70-155	1		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	4.95	5.05	102		4.79	97		70-140	5		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 QC Batch ID: WG2131351-4 WG2131351-5 QC Sample: L2566083-32 Client ID: B-39_0.17-1.0												
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	49.5	49.1	99		49.2	100		70-140	0		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	49.5	49.0	99		48.9	99		70-135	0		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	9.89	9.65	98		10.0	101		30-140	4		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	9.89	10.7	108		10.6	107		60-150	1		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	8.82	8.40	95		9.00	102		70-140	7		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	9.89	10.2	103		10.4	105		60-155	2		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	24.7	22.7	92		24.1	97		45-130	6		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	124	110	89		117	95		60-130	6		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	124	118	95		110	89		60-150	7		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91		91		40-275
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		95		40-165
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		96		40-215
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	60		63		10-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	79		78		40-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	71		69		15-130

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 22-23,25-26,28-29,31-32,34 QC Batch ID: WG2131351-4 WG2131351-5
QC Sample: L2566083-32 Client ID: B-39_0.17-1.0

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		63		10-130
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		71		40-135
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		71		20-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	86		90		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		77		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	86		83		40-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		90		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	87		91		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	92		91		40-130
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94		85		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		86		40-130
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		85		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	71		73		20-130
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		91		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		83		35-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	92		93		40-130
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89		92		40-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		83		40-130

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04
Client ID: B-30_9.0-10.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/20/25 10:48
Analyst: MHG
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 08:34
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	48.1	4.27	1	A
Aroclor 1221	ND		ug/kg	48.1	4.82	1	A
Aroclor 1232	ND		ug/kg	48.1	10.2	1	A
Aroclor 1242	ND		ug/kg	48.1	6.49	1	A
Aroclor 1248	ND		ug/kg	48.1	7.22	1	A
Aroclor 1254	ND		ug/kg	48.1	5.26	1	A
Aroclor 1260	ND		ug/kg	48.1	8.89	1	A
Aroclor 1262	ND		ug/kg	48.1	6.11	1	A
Aroclor 1268	ND		ug/kg	48.1	4.98	1	A
PCBs, Total	ND		ug/kg	48.1	4.27	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12
Client ID: B-32_6.0-7.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:25
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/20/25 11:23
Analyst: MHG
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 08:34
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	50.9	4.52	1	A
Aroclor 1221	ND		ug/kg	50.9	5.10	1	A
Aroclor 1232	ND		ug/kg	50.9	10.8	1	A
Aroclor 1242	ND		ug/kg	50.9	6.86	1	A
Aroclor 1248	ND		ug/kg	50.9	7.64	1	A
Aroclor 1254	ND		ug/kg	50.9	5.57	1	A
Aroclor 1260	ND		ug/kg	50.9	9.41	1	A
Aroclor 1262	ND		ug/kg	50.9	6.46	1	A
Aroclor 1268	ND		ug/kg	50.9	5.27	1	A
PCBs, Total	ND		ug/kg	50.9	4.52	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/27/25 22:46
Analyst: EMR
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 10/26/25 22:33
Cleanup Method: EPA 3665A
Cleanup Date: 10/27/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	51.0	4.52	1	A
Aroclor 1221	ND		ug/kg	51.0	5.10	1	A
Aroclor 1232	ND		ug/kg	51.0	10.8	1	A
Aroclor 1242	ND		ug/kg	51.0	6.87	1	A
Aroclor 1248	ND		ug/kg	51.0	7.64	1	A
Aroclor 1254	ND		ug/kg	51.0	5.57	1	A
Aroclor 1260	ND		ug/kg	51.0	9.42	1	A
Aroclor 1262	ND		ug/kg	51.0	6.47	1	A
Aroclor 1268	ND		ug/kg	51.0	5.28	1	A
PCBs, Total	ND		ug/kg	51.0	4.52	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	113		30-150	A
Decachlorobiphenyl	100		30-150	A
2,4,5,6-Tetrachloro-m-xylene	115		30-150	B
Decachlorobiphenyl	100		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 10/23/25 19:03
Analyst: MHG

Extraction Method: EPA 3510C
Extraction Date: 10/22/25 16:15
Cleanup Method: EPA 3665A
Cleanup Date: 10/23/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/23/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.071	0.021	1	A
Aroclor 1221	ND		ug/l	0.071	0.026	1	A
Aroclor 1232	ND		ug/l	0.071	0.026	1	A
Aroclor 1242	ND		ug/l	0.071	0.026	1	A
Aroclor 1248	ND		ug/l	0.071	0.026	1	A
Aroclor 1254	ND		ug/l	0.071	0.026	1	A
Aroclor 1260	ND		ug/l	0.071	0.026	1	A
Aroclor 1262	ND		ug/l	0.071	0.026	1	A
Aroclor 1268	ND		ug/l	0.071	0.026	1	A
PCBs, Total	ND		ug/l	0.071	0.021	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	45		30-150	A
Decachlorobiphenyl	42		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	43		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/19/25 15:43
Analyst: MHG

Extraction Method: EPA 3546
Extraction Date: 10/18/25 19:30
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 04,12 Batch: WG2129668-1						
Aroclor 1016	ND		ug/kg	48.4	4.29	A
Aroclor 1221	ND		ug/kg	48.4	4.84	A
Aroclor 1232	ND		ug/kg	48.4	10.2	A
Aroclor 1242	ND		ug/kg	48.4	6.52	A
Aroclor 1248	ND		ug/kg	48.4	7.25	A
Aroclor 1254	ND		ug/kg	48.4	5.29	A
Aroclor 1260	ND		ug/kg	48.4	8.94	A
Aroclor 1262	ND		ug/kg	48.4	6.14	A
Aroclor 1268	ND		ug/kg	48.4	5.01	A
PCBs, Total	ND		ug/kg	48.4	4.29	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	102		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	100		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/23/25 18:37
Analyst: MHG

Extraction Method: EPA 3510C
Extraction Date: 10/23/25 08:15
Cleanup Method: EPA 3665A
Cleanup Date: 10/23/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/23/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 38 Batch: WG2131263-1						
Aroclor 1016	ND		ug/l	0.071	0.021	A
Aroclor 1221	ND		ug/l	0.071	0.026	A
Aroclor 1232	ND		ug/l	0.071	0.026	A
Aroclor 1242	ND		ug/l	0.071	0.026	A
Aroclor 1248	ND		ug/l	0.071	0.026	A
Aroclor 1254	ND		ug/l	0.071	0.026	A
Aroclor 1260	ND		ug/l	0.071	0.026	A
Aroclor 1262	ND		ug/l	0.071	0.026	A
Aroclor 1268	ND		ug/l	0.071	0.026	A
PCBs, Total	ND		ug/l	0.071	0.021	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	45		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/27/25 17:03
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/26/25 22:33
Cleanup Method: EPA 3665A
Cleanup Date: 10/27/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 34 Batch: WG2132988-1						
Aroclor 1016	ND		ug/kg	48.7	4.32	A
Aroclor 1221	ND		ug/kg	48.7	4.88	A
Aroclor 1232	ND		ug/kg	48.7	10.3	A
Aroclor 1242	ND		ug/kg	48.7	6.56	A
Aroclor 1248	ND		ug/kg	48.7	7.30	A
Aroclor 1254	ND		ug/kg	48.7	5.33	A
Aroclor 1260	ND		ug/kg	48.7	9.00	A
Aroclor 1262	ND		ug/kg	48.7	6.18	A
Aroclor 1268	ND		ug/kg	48.7	5.04	A
PCBs, Total	ND		ug/kg	48.7	4.32	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	114		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	108		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04,12 Batch: WG2129668-2 WG2129668-3									
Aroclor 1016	91		96		40-140	5		50	A
Aroclor 1260	78		87		40-140	11		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	97		103		30-150	A
Decachlorobiphenyl	69		76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	96		102		30-150	B
Decachlorobiphenyl	72		79		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 38 Batch: WG2131263-2 WG2131263-3									
Aroclor 1016	68		46		40-140	38		50	A
Aroclor 1260	82		71		40-140	14		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		33		30-150	A
Decachlorobiphenyl	73		53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		34		30-150	B
Decachlorobiphenyl	61		54		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 34 Batch: WG2132988-2 WG2132988-3									
Aroclor 1016	93		94		40-140	1		50	A
Aroclor 1260	98		101		40-140	3		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		66		30-150	A
Decachlorobiphenyl	116		120		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		64		30-150	B
Decachlorobiphenyl	110		114		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129668-4 WG2129668-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0													
Aroclor 1016	ND	323	255	79		241	77		40-140	6		50	A
Aroclor 1260	ND	323	255	79		243	78		40-140	5		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		81		30-150	A
Decachlorobiphenyl	54		51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		77		30-150	B
Decachlorobiphenyl	62		63		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04
Client ID: B-30_9.0-10.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/25 10:47
Analyst: AKM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 10:51
Cleanup Method: EPA 3620B
Cleanup Date: 10/20/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.66	0.324	1	A
Lindane	ND		ug/kg	0.690	0.308	1	A
Alpha-BHC	ND		ug/kg	0.690	0.196	1	A
Beta-BHC	ND		ug/kg	1.66	0.628	1	A
Heptachlor	ND		ug/kg	0.828	0.371	1	A
Aldrin	ND		ug/kg	1.66	0.583	1	A
Heptachlor epoxide	ND		ug/kg	3.10	0.931	1	A
Endrin	ND		ug/kg	0.690	0.283	1	A
Endrin aldehyde	ND		ug/kg	2.07	0.724	1	A
Endrin ketone	ND		ug/kg	1.66	0.426	1	A
Dieldrin	ND		ug/kg	1.03	0.517	1	A
4,4'-DDE	ND		ug/kg	1.66	0.383	1	B
4,4'-DDD	ND		ug/kg	1.66	0.590	1	A
4,4'-DDT	ND		ug/kg	1.66	1.33	1	A
Endosulfan I	ND		ug/kg	1.66	0.391	1	A
Endosulfan II	ND		ug/kg	1.66	0.553	1	A
Endosulfan sulfate	ND		ug/kg	0.690	0.328	1	A
Methoxychlor	ND		ug/kg	3.10	0.966	1	A
Toxaphene	ND		ug/kg	31.0	8.69	1	A
cis-Chlordane	ND		ug/kg	2.07	0.577	1	A
trans-Chlordane	ND		ug/kg	2.07	0.546	1	A
Chlordane	ND		ug/kg	13.8	5.48	1	A

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04 Date Collected: 10/16/25 13:35

Client ID: B-30_9.0-10.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12
Client ID: B-32_6.0-7.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:25
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/25 11:22
Analyst: AKM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/19/25 10:51
Cleanup Method: EPA 3620B
Cleanup Date: 10/20/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.65	0.323	1	A
Lindane	ND		ug/kg	0.688	0.307	1	A
Alpha-BHC	ND		ug/kg	0.688	0.195	1	A
Beta-BHC	ND		ug/kg	1.65	0.626	1	A
Heptachlor	ND		ug/kg	0.825	0.370	1	A
Aldrin	ND		ug/kg	1.65	0.581	1	A
Heptachlor epoxide	ND		ug/kg	3.10	0.929	1	A
Endrin	ND		ug/kg	0.688	0.282	1	A
Endrin aldehyde	ND		ug/kg	2.06	0.722	1	A
Endrin ketone	ND		ug/kg	1.65	0.425	1	A
Dieldrin	ND		ug/kg	1.03	0.516	1	A
4,4'-DDE	ND		ug/kg	1.65	0.382	1	A
4,4'-DDD	ND		ug/kg	1.65	0.589	1	A
4,4'-DDT	ND		ug/kg	1.65	1.33	1	A
Endosulfan I	ND		ug/kg	1.65	0.390	1	A
Endosulfan II	ND		ug/kg	1.65	0.552	1	A
Endosulfan sulfate	ND		ug/kg	0.688	0.327	1	A
Methoxychlor	ND		ug/kg	3.10	0.963	1	A
Toxaphene	ND		ug/kg	31.0	8.67	1	A
cis-Chlordane	ND		ug/kg	2.06	0.575	1	A
trans-Chlordane	ND		ug/kg	2.06	0.545	1	A
Chlordane	ND		ug/kg	13.8	5.47	1	A

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12 Date Collected: 10/16/25 09:25

Client ID: B-32_6.0-7.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/27/25 17:37
Analyst: PEG
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 10/26/25 23:28
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.66	0.326	1	A
Lindane	ND		ug/kg	0.693	0.310	1	A
Alpha-BHC	ND		ug/kg	0.693	0.197	1	A
Beta-BHC	ND		ug/kg	1.66	0.631	1	A
Heptachlor	ND		ug/kg	0.832	0.373	1	A
Aldrin	ND		ug/kg	1.66	0.586	1	A
Heptachlor epoxide	ND		ug/kg	3.12	0.936	1	A
Endrin	ND		ug/kg	0.693	0.284	1	A
Endrin aldehyde	ND		ug/kg	2.08	0.728	1	A
Endrin ketone	ND		ug/kg	1.66	0.428	1	A
Dieldrin	ND		ug/kg	1.04	0.520	1	A
4,4'-DDE	ND		ug/kg	1.66	0.385	1	A
4,4'-DDD	ND		ug/kg	1.66	0.593	1	A
4,4'-DDT	ND		ug/kg	1.66	1.34	1	A
Endosulfan I	ND		ug/kg	1.66	0.393	1	A
Endosulfan II	ND		ug/kg	1.66	0.556	1	A
Endosulfan sulfate	ND		ug/kg	0.693	0.330	1	A
Methoxychlor	ND		ug/kg	3.12	0.970	1	A
Toxaphene	ND		ug/kg	31.2	8.73	1	A
cis-Chlordane	ND		ug/kg	2.08	0.580	1	A
trans-Chlordane	ND		ug/kg	2.08	0.549	1	A
Chlordane	ND		ug/kg	13.9	5.51	1	A

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 10/24/25 02:54
Analyst: JAG

Extraction Method: EPA 3510C
Extraction Date: 10/22/25 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.006	1	A
Lindane	ND		ug/l	0.014	0.005	1	A
Alpha-BHC	ND		ug/l	0.014	0.006	1	A
Beta-BHC	ND		ug/l	0.020	0.014	1	A
Heptachlor	ND		ug/l	0.014	0.005	1	A
Aldrin	ND		ug/l	0.014	0.005	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.005	1	A
Endrin	ND		ug/l	0.029	0.008	1	A
Endrin aldehyde	ND		ug/l	0.030	0.018	1	A
Endrin ketone	ND		ug/l	0.029	0.014	1	A
Dieldrin	ND		ug/l	0.029	0.004	1	A
4,4'-DDE	ND		ug/l	0.029	0.010	1	A
4,4'-DDD	ND		ug/l	0.029	0.010	1	A
4,4'-DDT	ND		ug/l	0.029	0.024	1	A
Endosulfan I	ND		ug/l	0.014	0.005	1	A
Endosulfan II	ND		ug/l	0.029	0.008	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.007	1	A
Methoxychlor	ND		ug/l	0.143	0.014	1	A
Toxaphene	ND		ug/l	0.200	0.150	1	A
cis-Chlordane	ND		ug/l	0.020	0.007	1	A
trans-Chlordane	ND		ug/l	0.020	0.011	1	A
Chlordane	ND		ug/l	0.143	0.098	1	A

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/20/25 10:12
Analyst: PEG

Extraction Method: EPA 3546
Extraction Date: 10/19/25 10:51
Cleanup Method: EPA 3620B
Cleanup Date: 10/20/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04,12 Batch: WG2129792-1						
Delta-BHC	ND		ug/kg	1.57	0.308	A
Lindane	ND		ug/kg	0.655	0.293	A
Alpha-BHC	ND		ug/kg	0.655	0.186	A
Beta-BHC	ND		ug/kg	1.57	0.596	A
Heptachlor	ND		ug/kg	0.786	0.352	A
Aldrin	ND		ug/kg	1.57	0.553	A
Heptachlor epoxide	ND		ug/kg	2.95	0.884	A
Endrin	ND		ug/kg	0.655	0.268	A
Endrin aldehyde	ND		ug/kg	1.96	0.688	A
Endrin ketone	ND		ug/kg	1.57	0.405	A
Dieldrin	ND		ug/kg	0.982	0.491	A
4,4'-DDE	ND		ug/kg	1.57	0.363	A
4,4'-DDD	ND		ug/kg	1.57	0.560	A
4,4'-DDT	ND		ug/kg	1.57	1.26	A
Endosulfan I	ND		ug/kg	1.57	0.371	A
Endosulfan II	ND		ug/kg	1.57	0.525	A
Endosulfan sulfate	ND		ug/kg	0.655	0.312	A
Methoxychlor	ND		ug/kg	2.95	0.917	A
Toxaphene	ND		ug/kg	29.5	8.25	A
cis-Chlordane	ND		ug/kg	1.96	0.547	A
trans-Chlordane	ND		ug/kg	1.96	0.519	A
Chlordane	ND		ug/kg	13.1	5.21	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/20/25 10:12
Analyst: PEG

Extraction Method: EPA 3546
Extraction Date: 10/19/25 10:51
Cleanup Method: EPA 3620B
Cleanup Date: 10/20/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04,12 Batch: WG2129792-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/24/25 02:17
Analyst: JAG

Extraction Method: EPA 3510C
Extraction Date: 10/23/25 08:15

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 38 Batch: WG2131262-1						
Delta-BHC	ND		ug/l	0.014	0.006	A
Lindane	ND		ug/l	0.014	0.005	A
Alpha-BHC	ND		ug/l	0.014	0.006	A
Beta-BHC	ND		ug/l	0.020	0.014	A
Heptachlor	0.008	J	ug/l	0.014	0.005	A
Aldrin	0.007	J	ug/l	0.014	0.005	A
Heptachlor epoxide	0.010	J	ug/l	0.014	0.005	A
Endrin ketone	ND		ug/l	0.029	0.014	A
4,4'-DDE	ND		ug/l	0.029	0.010	A
4,4'-DDD	ND		ug/l	0.029	0.010	A
Endosulfan II	ND		ug/l	0.029	0.008	A
Methoxychlor	ND		ug/l	0.143	0.014	A
Toxaphene	ND		ug/l	0.200	0.150	A
cis-Chlordane	ND		ug/l	0.020	0.007	A
Chlordane	ND		ug/l	0.143	0.098	A
Endrin	ND		ug/l	0.029	0.008	B
Endrin aldehyde	ND		ug/l	0.030	0.018	B
Dieldrin	ND	IP	ug/l	0.029	0.004	B
4,4'-DDT	ND		ug/l	0.029	0.024	B
Endosulfan I	0.012	J	ug/l	0.014	0.005	B
Endosulfan sulfate	ND		ug/l	0.029	0.007	B
trans-Chlordane	ND	IP	ug/l	0.020	0.011	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/24/25 02:17
Analyst: JAG

Extraction Method: EPA 3510C
Extraction Date: 10/23/25 08:15

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 38 Batch: WG2131262-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	88		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/27/25 16:31
Analyst: PEG

Extraction Method: EPA 3546
Extraction Date: 10/26/25 23:28
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 34 Batch: WG2132993-1						
Delta-BHC	ND		ug/kg	1.59	0.311	A
Lindane	ND		ug/kg	0.662	0.296	A
Alpha-BHC	ND		ug/kg	0.662	0.188	A
Beta-BHC	ND		ug/kg	1.59	0.603	A
Heptachlor	ND		ug/kg	0.795	0.356	A
Aldrin	ND		ug/kg	1.59	0.560	A
Heptachlor epoxide	ND		ug/kg	2.98	0.894	A
Endrin	ND		ug/kg	0.662	0.272	A
Endrin aldehyde	ND		ug/kg	1.99	0.695	A
Endrin ketone	ND		ug/kg	1.59	0.409	A
Dieldrin	ND		ug/kg	0.993	0.497	A
4,4'-DDE	ND		ug/kg	1.59	0.368	A
4,4'-DDD	ND		ug/kg	1.59	0.567	A
4,4'-DDT	ND		ug/kg	1.59	1.28	A
Endosulfan I	ND		ug/kg	1.59	0.375	A
Endosulfan II	ND		ug/kg	1.59	0.531	A
Endosulfan sulfate	ND		ug/kg	0.662	0.315	A
Methoxychlor	ND		ug/kg	2.98	0.927	A
Toxaphene	ND		ug/kg	29.8	8.34	A
cis-Chlordane	ND		ug/kg	1.99	0.554	A
trans-Chlordane	ND		ug/kg	1.99	0.524	A
Chlordane	ND		ug/kg	13.2	5.26	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/27/25 16:31
Analyst: PEG

Extraction Method: EPA 3546
Extraction Date: 10/26/25 23:28
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/25
Cleanup Method: EPA 3660B
Cleanup Date: 10/27/25

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 34 Batch: WG2132993-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	96		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,12 Batch: WG2129792-2 WG2129792-3									
Delta-BHC	77		78		30-150	1		30	A
Lindane	82		83		30-150	1		30	A
Alpha-BHC	78		79		30-150	1		30	A
Beta-BHC	88		81		30-150	8		30	A
Heptachlor	83		84		30-150	1		30	A
Aldrin	77		78		30-150	1		30	A
Heptachlor epoxide	70		70		30-150	0		30	A
Endrin	80		81		30-150	1		30	A
Endrin aldehyde	66		67		30-150	2		30	A
Endrin ketone	77		80		30-150	4		30	A
Dieldrin	76		78		30-150	3		30	A
4,4'-DDE	71		74		30-150	4		30	A
4,4'-DDD	79		80		30-150	1		30	A
4,4'-DDT	83		85		30-150	2		30	A
Endosulfan I	75		76		30-150	1		30	A
Endosulfan II	90		92		30-150	2		30	A
Endosulfan sulfate	72		74		30-150	3		30	A
Methoxychlor	88		88		30-150	0		30	A
cis-Chlordane	69		70		30-150	1		30	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,12 Batch: WG2129792-2 WG2129792-3									
trans-Chlordane	72		73		30-150	1		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		73		30-150	A
Decachlorobiphenyl	62		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		77		30-150	B
Decachlorobiphenyl	70		74		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 38 Batch: WG2131262-2 WG2131262-3									
Delta-BHC	104		69		30-150	**40**	Q	20	A
Lindane	140		91		30-150	**43**	Q	20	A
Alpha-BHC	135		86		30-150	**44**	Q	20	A
Beta-BHC	139		92		30-150	**40**	Q	20	A
Heptachlor	**161**	Q	91		30-150	**56**	Q	20	A
Aldrin	**161**	Q	89		30-150	**58**	Q	20	A
Heptachlor epoxide	**158**	Q	96		30-150	**49**	Q	20	A
Endrin	**161**	Q	98		30-150	**49**	Q	20	A
Endrin aldehyde	128		93		30-150	**32**	Q	20	A
Endrin ketone	**160**	Q	104		30-150	**42**	Q	20	A
Dieldrin	**167**	Q	99		30-150	**51**	Q	20	A
4,4'-DDE	**170**	Q	94		30-150	**57**	Q	20	A
4,4'-DDD	**176**	Q	100		30-150	**55**	Q	20	A
4,4'-DDT	**186**	Q	106		30-150	**55**	Q	20	A
Endosulfan I	**158**	Q	96		30-150	**49**	Q	20	A
Endosulfan II	**191**	Q	118		30-150	**47**	Q	20	A
Endosulfan sulfate	147		93		30-150	**45**	Q	20	A
Methoxychlor	**195**	Q	115		30-150	**52**	Q	20	A
cis-Chlordane	**154**	Q	87		30-150	**56**	Q	20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 38 Batch: WG2131262-2 WG2131262-3									
trans-Chlordane	**162**	Q	93		30-150	**54**	Q	20	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	124		86		30-150	A
Decachlorobiphenyl	96		50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	111		80		30-150	B
Decachlorobiphenyl	97		55		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 34 Batch: WG2132993-2 WG2132993-3									
Delta-BHC	89		92		30-150	3		30	A
Lindane	90		98		30-150	9		30	A
Alpha-BHC	90		98		30-150	9		30	A
Beta-BHC	94		101		30-150	7		30	A
Heptachlor	88		95		30-150	8		30	A
Aldrin	87		93		30-150	7		30	A
Heptachlor epoxide	81		87		30-150	7		30	A
Endrin	85		91		30-150	7		30	A
Endrin aldehyde	72		66		30-150	9		30	A
Endrin ketone	80		84		30-150	5		30	A
Dieldrin	85		91		30-150	7		30	A
4,4'-DDE	84		91		30-150	8		30	A
4,4'-DDD	85		91		30-150	7		30	A
4,4'-DDT	88		92		30-150	4		30	A
Endosulfan I	86		92		30-150	7		30	A
Endosulfan II	98		102		30-150	4		30	A
Endosulfan sulfate	78		82		30-150	5		30	A
Methoxychlor	94		99		30-150	5		30	A
cis-Chlordane	81		87		30-150	7		30	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 34 Batch: WG2132993-2 WG2132993-3									
trans-Chlordane	80		86		30-150	7		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		85		30-150	A
Decachlorobiphenyl	85		93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		83		30-150	B
Decachlorobiphenyl	94		98		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129792-4 WG2129792-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0													
Delta-BHC	ND	33	23.0	70		30.4	91		30-150	28		50	A
Lindane	ND	33	24.6	75		31.9	95		30-150	26		50	A
Alpha-BHC	ND	33	23.2	70		30.2	90		30-150	26		50	A
Beta-BHC	ND	33	24.2	73		32.2	96		30-150	28		50	A
Heptachlor	ND	33	25.0	76		33.4	100		30-150	29		50	A
Aldrin	ND	33	22.9	69		30.8	92		30-150	29		50	A
Heptachlor epoxide	ND	33	21.6	65		28.1	84		30-150	26		50	A
Endrin	ND	33	25.1	76		34.2	102		30-150	31		50	A
Endrin aldehyde	ND	33	21.6	65		29.4	88		30-150	31		50	A
Endrin ketone	ND	33	25.2	76		33.9	101		30-150	29		50	A
Dieldrin	ND	33	23.4	71		31.7	95		30-150	30		50	A
4,4'-DDE	ND	33	25.3	77		32.8	98		30-150	26		50	B
4,4'-DDD	ND	33	24.6	75		33.5	100		30-150	31		50	A
4,4'-DDT	ND	33	25.8	78		36.2	108		30-150	34		50	A
Endosulfan I	ND	33	23.2	70		31.2	93		30-150	29		50	A
Endosulfan II	ND	33	28.9	88		38.5	115		30-150	28		50	A
Endosulfan sulfate	ND	33	23.1	70		31.3	93		30-150	30		50	A
Methoxychlor	ND	33	29.3	89		38.6	115		30-150	27		50	A
cis-Chlordane	ND	33	20.7	63		28.4	85		30-150	31		50	A

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,12 QC Batch ID: WG2129792-4 WG2129792-5 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0													
trans-Chlordane	ND	33	22.9	69		29.9	89		30-150	27		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		82		30-150	A
Decachlorobiphenyl	67		91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		88		30-150	B
Decachlorobiphenyl	75		97		30-150	B

METALS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04
Client ID: B-30_9.0-10.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/16/25 13:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 96%

Total Metals - Mansfield Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Aluminum, Total	11000		mg/kg	7.97	2.59	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Antimony, Total	ND		mg/kg	3.98	3.07	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Arsenic, Total	5.35		mg/kg	0.797	0.344	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Barium, Total	35.6		mg/kg	0.797	0.085	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Beryllium, Total	0.432		mg/kg	0.398	0.044	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Cadmium, Total	0.119	J	mg/kg	0.797	0.044	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Calcium, Total	10300		mg/kg	7.97	4.52	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Chromium, Total	12.3		mg/kg	0.797	0.676	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Cobalt, Total	8.64		mg/kg	1.59	0.198	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Copper, Total	26.4		mg/kg	0.797	0.181	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Iron, Total	21900		mg/kg	3.98	0.837	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Lead, Total	14.6		mg/kg	3.98	0.190	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Magnesium, Total	9490		mg/kg	7.97	1.30	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Manganese, Total	830		mg/kg	0.797	0.427	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Mercury, Total	ND		mg/kg	0.078	0.051	1	10/22/25 19:15	10/23/25 06:57	EPA 7471B	1,7471B	RDB
Nickel, Total	18.8		mg/kg	1.99	0.644	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Potassium, Total	545		mg/kg	199	40.4	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Selenium, Total	ND		mg/kg	1.59	0.262	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Silver, Total	ND		mg/kg	0.398	0.237	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Sodium, Total	ND		mg/kg	159	84.5	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Thallium, Total	ND		mg/kg	1.59	0.719	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Vanadium, Total	12.4		mg/kg	0.797	0.120	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR
Zinc, Total	55.7		mg/kg	3.98	0.483	2	10/22/25 19:05	10/23/25 10:27	EPA 3050B	1,6010D	MFR

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12
Client ID: B-32_6.0-7.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/16/25 09:25
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 96%

Total Metals - Mansfield Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Aluminum, Total	16800		mg/kg	7.81	2.54	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	3.90	3.01	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Arsenic, Total	11.4		mg/kg	0.781	0.337	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Barium, Total	38.4		mg/kg	0.781	0.083	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.820		mg/kg	0.390	0.043	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.301	J	mg/kg	0.781	0.043	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Calcium, Total	14300		mg/kg	7.81	4.43	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Chromium, Total	20.5		mg/kg	0.781	0.662	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Cobalt, Total	20.8		mg/kg	1.56	0.194	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Copper, Total	51.8		mg/kg	0.781	0.177	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Iron, Total	36800		mg/kg	9.76	2.05	5	10/22/25 19:05	10/24/25 00:50	EPA 3050B	1,6010D	JMF
Lead, Total	16.0		mg/kg	3.90	0.186	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Magnesium, Total	8280		mg/kg	7.81	1.27	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Manganese, Total	407		mg/kg	0.781	0.419	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.069	0.045	1	10/22/25 19:15	10/23/25 07:32	EPA 7471B	1,7471B	RDB
Nickel, Total	42.2		mg/kg	1.95	0.631	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Potassium, Total	686		mg/kg	195	39.6	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.56	0.257	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.390	0.233	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	156	82.8	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.56	0.704	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Vanadium, Total	19.6		mg/kg	0.781	0.118	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF
Zinc, Total	91.7		mg/kg	3.90	0.473	2	10/22/25 19:05	10/23/25 22:11	EPA 3050B	1,6010D	JMF

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34 Date Collected: 10/16/25 00:00

Client ID: FD01_251016 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11200		mg/kg	8.03	2.61	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Antimony, Total	ND		mg/kg	4.02	3.09	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Arsenic, Total	5.87		mg/kg	0.803	0.347	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Barium, Total	38.9		mg/kg	0.803	0.085	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Beryllium, Total	0.457		mg/kg	0.402	0.044	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Cadmium, Total	ND		mg/kg	0.803	0.044	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Calcium, Total	21000		mg/kg	8.03	4.55	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Chromium, Total	12.5		mg/kg	0.803	0.681	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Cobalt, Total	9.08		mg/kg	1.61	0.199	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Copper, Total	22.2		mg/kg	0.803	0.182	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Iron, Total	23000		mg/kg	4.02	0.843	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Lead, Total	15.3		mg/kg	4.02	0.191	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Magnesium, Total	15200		mg/kg	8.03	1.31	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Manganese, Total	1000		mg/kg	0.803	0.430	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Mercury, Total	ND		mg/kg	0.068	0.044	1	11/04/25 23:43	11/07/25 14:36	EPA 7471B	1,7471B	JWN
Nickel, Total	18.8		mg/kg	2.01	0.649	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Potassium, Total	514		mg/kg	201	40.7	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Selenium, Total	ND		mg/kg	1.61	0.264	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Silver, Total	ND		mg/kg	0.402	0.239	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Sodium, Total	ND		mg/kg	161	85.1	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Thallium, Total	ND		mg/kg	1.61	0.724	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Vanadium, Total	12.2		mg/kg	0.803	0.121	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP
Zinc, Total	51.2		mg/kg	4.02	0.487	2	11/04/25 23:38	11/09/25 17:28	EPA 3050B	1,6010D	MRP

Project Name: HVRA **Lab Number:** L2566083

Project Number: 18.8090 **Report Date:** 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38 Date Collected: 10/16/25 08:50

Client ID: M&S_IDW_DECONWATER Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.695		mg/l	0.0100	0.00327	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Antimony, Total	0.04094		mg/l	0.00400	0.00042	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Arsenic, Total	0.00158		mg/l	0.00050	0.00016	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Barium, Total	0.1691		mg/l	0.00050	0.00017	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Calcium, Total	17.5		mg/l	0.100	0.0394	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Chromium, Total	0.00642		mg/l	0.00100	0.00017	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Cobalt, Total	0.00125		mg/l	0.00050	0.00016	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Copper, Total	0.04118		mg/l	0.00100	0.00038	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Iron, Total	2.43		mg/l	0.0500	0.0191	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Lead, Total	0.00435		mg/l	0.00100	0.00034	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Magnesium, Total	5.46		mg/l	0.0700	0.0242	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Manganese, Total	0.07263		mg/l	0.00100	0.00044	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/23/25 10:16	10/23/25 15:06	EPA 7470A	1,7470A	RDB
Nickel, Total	0.00725		mg/l	0.00600	0.00055	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Potassium, Total	6.34		mg/l	0.100	0.0309	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Sodium, Total	115.		mg/l	0.500	0.0293	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Thallium, Total	ND		mg/l	0.00100	0.00014	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR
Zinc, Total	0.05019		mg/l	0.01000	0.00341	1	10/21/25 08:13	10/24/25 16:51	EPA 3005A	1,6020B	BLR

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 38 Batch: WG2130493-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Antimony, Total	ND		mg/l	0.00400	0.00042	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Barium, Total	ND		mg/l	0.00050	0.00017	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Calcium, Total	ND		mg/l	0.100	0.0394	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Chromium, Total	ND		mg/l	0.00100	0.00017	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Copper, Total	ND		mg/l	0.00100	0.00038	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Iron, Total	ND		mg/l	0.0500	0.0191	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Lead, Total	ND		mg/l	0.00100	0.00034	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Manganese, Total	0.00063	J	mg/l	0.00100	0.00044	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Nickel, Total	0.00553	J	mg/l	0.00600	0.00055	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Potassium, Total	ND		mg/l	0.100	0.0309	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Sodium, Total	ND		mg/l	0.500	0.0293	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Thallium, Total	ND		mg/l	0.00100	0.00014	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR
Zinc, Total	ND		mg/l	0.01000	0.00341	1	10/21/25 08:13	10/22/25 09:08	1,6020B	BLR

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04,12 Batch: WG2131334-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Antimony, Total	ND		mg/kg	2.00	1.54	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Arsenic, Total	ND		mg/kg	0.400	0.173	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
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Method Blank Analysis
Batch Quality Control

Barium, Total	ND		mg/kg	0.400	0.042	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Beryllium, Total	ND		mg/kg	0.200	0.022	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Cadmium, Total	ND		mg/kg	0.400	0.022	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Calcium, Total	ND		mg/kg	4.00	2.27	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Chromium, Total	ND		mg/kg	0.400	0.339	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Cobalt, Total	ND		mg/kg	0.800	0.099	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Copper, Total	ND		mg/kg	0.400	0.091	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Iron, Total	0.855	J	mg/kg	2.00	0.420	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Lead, Total	ND		mg/kg	2.00	0.095	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Magnesium, Total	ND		mg/kg	4.00	0.652	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Manganese, Total	ND		mg/kg	0.400	0.214	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Nickel, Total	ND		mg/kg	1.00	0.323	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Potassium, Total	ND		mg/kg	100	20.3	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Selenium, Total	ND		mg/kg	0.800	0.132	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Silver, Total	ND		mg/kg	0.200	0.119	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Sodium, Total	ND		mg/kg	80.0	42.4	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Thallium, Total	ND		mg/kg	0.800	0.361	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Vanadium, Total	ND		mg/kg	0.400	0.060	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR
Zinc, Total	ND		mg/kg	2.00	0.242	1	10/22/25 19:05	10/23/25 10:01	1,6010D	MFR

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04,12 Batch: WG2131337-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/22/25 19:15	10/23/25 06:52	1,7471B	RDB

Prep Information

Digestion Method: EPA 7471B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 38 Batch: WG2131661-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/23/25 10:16	10/23/25 13:40	1,7470A	RDB

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 34 Batch: WG2137117-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Antimony, Total	ND		mg/kg	2.00	1.54	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Arsenic, Total	ND		mg/kg	0.400	0.173	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Barium, Total	ND		mg/kg	0.400	0.042	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Beryllium, Total	ND		mg/kg	0.200	0.022	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Cadmium, Total	ND		mg/kg	0.400	0.022	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Calcium, Total	ND		mg/kg	4.00	2.27	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Chromium, Total	ND		mg/kg	0.400	0.339	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Cobalt, Total	ND		mg/kg	0.800	0.099	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Copper, Total	ND		mg/kg	0.400	0.091	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Iron, Total	1.45	J	mg/kg	2.00	0.420	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Lead, Total	ND		mg/kg	2.00	0.095	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Magnesium, Total	ND		mg/kg	4.00	0.652	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Manganese, Total	ND		mg/kg	0.400	0.214	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Nickel, Total	ND		mg/kg	1.00	0.323	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Potassium, Total	ND		mg/kg	100	20.3	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Selenium, Total	ND		mg/kg	0.800	0.132	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Silver, Total	ND		mg/kg	0.200	0.119	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Sodium, Total	ND		mg/kg	80.0	42.4	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Thallium, Total	ND		mg/kg	0.800	0.361	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Vanadium, Total	ND		mg/kg	0.400	0.060	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP
Zinc, Total	ND		mg/kg	2.00	0.242	1	11/04/25 23:38	11/09/25 17:19	1,6010D	MRP

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 34 Batch: WG2137119-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	11/04/25 23:43	11/07/25 14:19	1,7471B	JWN

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 Batch: WG2130493-2								
Aluminum, Total	97		-		80-120	-		
Antimony, Total	81		-		80-120	-		
Arsenic, Total	103		-		80-120	-		
Barium, Total	100		-		80-120	-		
Beryllium, Total	100		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Calcium, Total	102		-		80-120	-		
Chromium, Total	101		-		80-120	-		
Cobalt, Total	100		-		80-120	-		
Copper, Total	101		-		80-120	-		
Iron, Total	99		-		80-120	-		
Lead, Total	100		-		80-120	-		
Magnesium, Total	100		-		80-120	-		
Manganese, Total	100		-		80-120	-		
Nickel, Total	101		-		80-120	-		
Potassium, Total	102		-		80-120	-		
Selenium, Total	98		-		80-120	-		
Silver, Total	98		-		80-120	-		
Sodium, Total	103		-		80-120	-		
Thallium, Total	113		-		80-120	-		
Vanadium, Total	102		-		80-120	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 Batch: WG2130493-2					
Zinc, Total	101	-	80-120	-	

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,12 Batch: WG2131334-2					
Aluminum, Total	107	-	80-120	-	20
Antimony, Total	104	-	80-120	-	20
Arsenic, Total	101	-	80-120	-	20
Barium, Total	105	-	80-120	-	20
Beryllium, Total	107	-	80-120	-	20
Cadmium, Total	102	-	80-120	-	20
Calcium, Total	100	-	80-120	-	20
Chromium, Total	101	-	80-120	-	20
Cobalt, Total	102	-	80-120	-	20
Copper, Total	104	-	80-120	-	20
Iron, Total	104	-	80-120	-	20
Lead, Total	107	-	80-120	-	20
Magnesium, Total	101	-	80-120	-	20
Manganese, Total	104	-	80-120	-	20
Nickel, Total	104	-	80-120	-	20
Potassium, Total	109	-	80-120	-	20
Selenium, Total	103	-	80-120	-	20
Silver, Total	100	-	80-120	-	20
Sodium, Total	106	-	80-120	-	20
Thallium, Total	105	-	80-120	-	20
Vanadium, Total	105	-	80-120	-	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,12 Batch: WG2131334-2					
Zinc, Total	102	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 04,12 Batch: WG2131337-2					
Mercury, Total	92	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 38 Batch: WG2131661-2					
Mercury, Total	94	-	80-120	-	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 Batch: WG2137117-2					
Aluminum, Total	102	-	80-120	-	20
Antimony, Total	102	-	80-120	-	20
Arsenic, Total	100	-	80-120	-	20
Barium, Total	101	-	80-120	-	20
Beryllium, Total	102	-	80-120	-	20
Cadmium, Total	100	-	80-120	-	20
Calcium, Total	101	-	80-120	-	20
Chromium, Total	99	-	80-120	-	20
Cobalt, Total	99	-	80-120	-	20
Copper, Total	101	-	80-120	-	20
Iron, Total	102	-	80-120	-	20
Lead, Total	102	-	80-120	-	20
Magnesium, Total	98	-	80-120	-	20
Manganese, Total	100	-	80-120	-	20
Nickel, Total	100	-	80-120	-	20
Potassium, Total	103	-	80-120	-	20
Selenium, Total	98	-	80-120	-	20
Silver, Total	100	-	80-120	-	20
Sodium, Total	103	-	80-120	-	20
Thallium, Total	100	-	80-120	-	20
Vanadium, Total	102	-	80-120	-	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 Batch: WG2137117-2					
Zinc, Total	99	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 34 Batch: WG2137119-2					
Mercury, Total	97	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2130493-11 WG2130493-12 QC Sample: L2565380-02 Client ID: MS Sample												
Aluminum, Total	0.099	2	2.02	96		2.04	97		75-125	1		20
Antimony, Total	ND	0.5	0.4177	84		0.3997	80		75-125	4		20
Arsenic, Total	0.0003J	0.12	0.1306	109		0.1274	106		75-125	2		20
Barium, Total	0.0226	2	1.988	98		1.905	94		75-125	4		20
Beryllium, Total	ND	0.05	0.04828	96		0.04836	97		75-125	0		20
Cadmium, Total	ND	0.053	0.05071	96		0.04939	93		75-125	3		20
Calcium, Total	93.3	10	106	**127**	Q	100	**67**	Q	75-125	6		20
Chromium, Total	0.0003J	0.2	0.2100	105		0.2030	102		75-125	3		20
Cobalt, Total	ND	0.5	0.5224	104		0.5053	101		75-125	3		20
Copper, Total	0.0005J	0.25	0.2537	101		0.2520	101		75-125	1		20
Iron, Total	0.438	1	1.38	94		1.38	94		75-125	0		20
Lead, Total	ND	0.53	0.5405	102		0.5269	99		75-125	3		20
Magnesium, Total	8.64	10	18.3	97		18.2	96		75-125	1		20
Manganese, Total	0.05746	0.5	0.5744	103		0.5636	101		75-125	2		20
Nickel, Total	ND	0.5	0.5226	104		0.5250	105		75-125	0		20
Potassium, Total	3.10	10	14.4	113		13.6	105		75-125	6		20
Selenium, Total	ND	0.12	0.121	101		0.126	105		75-125	4		20
Silver, Total	ND	0.05	0.04945	99		0.04657	93		75-125	6		20
Sodium, Total	12.5	10	22.0	95		22.4	99		75-125	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2130493-11 WG2130493-12 QC Sample: L2565380-02 Client ID: MS Sample												
Thallium, Total	ND	0.12	0.1259	105		0.1223	102		75-125	3		20
Vanadium, Total	ND	0.5	0.5277	106		0.5115	102		75-125	3		20
Zinc, Total	ND	0.5	0.5076	102		0.5012	100		75-125	1		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38	QC Batch ID: WG2130493-3					WG2130493-4			QC Sample: L2565264-01		Client ID:	MS Sample
Aluminum, Total	0.204	2	2.18	99		2.23	101		75-125	2		20
Antimony, Total	ND	0.5	0.4380	88		0.4424	88		75-125	1		20
Arsenic, Total	0.00026J	0.12	0.1276	106		0.1326	110		75-125	4		20
Barium, Total	0.01503	2	2.040	101		2.069	103		75-125	1		20
Beryllium, Total	ND	0.05	0.05085	102		0.05292	106		75-125	4		20
Cadmium, Total	ND	0.053	0.05259	99		0.05210	98		75-125	1		20
Calcium, Total	22.0	10	33.8	118		34.5	125		75-125	2		20
Chromium, Total	0.00043J	0.2	0.2090	104		0.2143	107		75-125	3		20
Cobalt, Total	ND	0.5	0.5333	107		0.5440	109		75-125	2		20
Copper, Total	0.00162	0.25	0.2717	108		0.2772	110		75-125	2		20
Iron, Total	2.56	1	3.70	114		3.69	113		75-125	0		20
Lead, Total	0.00038J	0.53	0.5383	102		0.5577	105		75-125	4		20
Magnesium, Total	2.10	10	12.0	99		12.6	105		75-125	5		20
Manganese, Total	0.03789	0.5	0.5510	103		0.5692	106		75-125	3		20
Nickel, Total	ND	0.5	0.5491	110		0.5697	114		75-125	4		20
Potassium, Total	1.04	10	12.0	110		12.1	111		75-125	1		20
Selenium, Total	ND	0.12	0.121	101		0.124	103		75-125	2		20
Silver, Total	ND	0.05	0.05038	101		0.05103	102		75-125	1		20
Sodium, Total	4.56	10	14.9	103		15.4	108		75-125	3		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2130493-3 WG2130493-4 QC Sample: L2565264-01 Client ID: MS Sample												
Thallium, Total	ND	0.12	0.1244	104		0.1294	108		75-125	4		20
Vanadium, Total	0.00208J	0.5	0.5272	105		0.5536	111		75-125	5		20
Zinc, Total	ND	0.5	0.5441	109		0.5299	106		75-125	3		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38	QC Batch ID: WG2130493-7	WG2130493-8	QC Sample: L2565423-06	Client ID: MS Sample								
Aluminum, Total	0.210	2	2.10	94		2.06	92		75-125	2		20
Antimony, Total	0.00049J	0.5	0.4860	97		0.4721	94		75-125	3		20
Arsenic, Total	0.01978	0.12	0.1465	106		0.1397	100		75-125	5		20
Barium, Total	0.01216	2	1.933	96		1.878	93		75-125	3		20
Beryllium, Total	0.00012J	0.05	0.04842	97		0.04721	94		75-125	3		20
Cadmium, Total	ND	0.053	0.05172	98		0.04931	93		75-125	5		20
Calcium, Total	65.3	10	82.7	**174**	Q	77.4	121		75-125	7		20
Chromium, Total	0.00446	0.2	0.1975	96		0.1933	94		75-125	2		20
Cobalt, Total	0.00048J	0.5	0.4882	98		0.4680	94		75-125	4		20
Copper, Total	0.00139	0.25	0.2486	99		0.2373	94		75-125	5		20
Iron, Total	48.5	1	59.9	**1140**	Q	56.7	**820**	Q	75-125	5		20
Lead, Total	0.00069J	0.53	0.5470	103		0.5185	98		75-125	5		20
Magnesium, Total	35.4	10	52.1	**167**	Q	49.7	**143**	Q	75-125	5		20
Manganese, Total	0.4387	0.5	0.9613	104		0.9172	96		75-125	5		20
Nickel, Total	0.00160J	0.5	0.4907	98		0.4730	95		75-125	4		20
Potassium, Total	19.5	10	31.0	115		29.3	98		75-125	6		20
Selenium, Total	ND	0.12	0.121	101		0.113	94		75-125	7		20
Silver, Total	ND	0.05	0.04756	95		0.04594	92		75-125	3		20
Sodium, Total	283.	10	295	120		280	**0**	Q	75-125	5		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2130493-7 WG2130493-8 QC Sample: L2565423-06 Client ID: MS Sample												
Thallium, Total	ND	0.12	0.1366	114		0.1290	108		75-125	6		20
Vanadium, Total	0.00505	0.5	0.5149	102		0.4902	97		75-125	5		20
Zinc, Total	0.00600J	0.5	0.4910	98		0.4718	94		75-125	4		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,12 QC Batch ID: WG2131334-3 WG2131334-4 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Aluminum, Total	11000	160	9140	**0**	Q	11200	120		75-125	20		20
Antimony, Total	ND	40	16.6	**42**	Q	17.9	**43**	Q	75-125	8		20
Arsenic, Total	5.35	9.6	14.2	92		15.4	100		75-125	8		20
Barium, Total	35.6	160	178	89		194	95		75-125	9		20
Beryllium, Total	0.432	4	4.18	94		4.54	98		75-125	8		20
Cadmium, Total	0.119J	4.24	3.94	93		4.18	94		75-125	6		20
Calcium, Total	10300	800	9140	**0**	Q	10400	**12**	Q	75-125	13		20
Chromium, Total	12.3	16	28.4	101		27.4	90		75-125	4		20
Cobalt, Total	8.64	40	42.8	85		46.5	91		75-125	8		20
Copper, Total	26.4	20	41.2	**74**	Q	44.8	88		75-125	8		20
Iron, Total	21900	80	18200	**0**	Q	21900	**0**	Q	75-125	18		20
Lead, Total	14.6	42.4	54.7	94		63.2	110		75-125	14		20
Magnesium, Total	9490	800	8480	**0**	Q	9680	**23**	Q	75-125	13		20
Manganese, Total	830	40	747	**0**	Q	873	103		75-125	16		20
Nickel, Total	18.8	40	51.5	82		56.9	91		75-125	10		20
Potassium, Total	545	800	1220	84		1290	89		75-125	6		20
Selenium, Total	ND	9.6	8.79	92		9.52	95		75-125	8		20
Silver, Total	ND	4	3.92	98		4.17	100		75-125	6		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,12 QC Batch ID: WG2131334-3 WG2131334-4 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Sodium, Total	ND	800	864	108		925	111		75-125	7		20
Thallium, Total	ND	9.6	8.67	90		9.15	91		75-125	5		20
Vanadium, Total	12.4	40	48.5	90		52.9	97		75-125	9		20
Zinc, Total	55.7	40	80.2	**61**	Q	90.7	84		75-125	12		20
Total Metals - Mansfield Lab Associated sample(s): 04,12 QC Batch ID: WG2131337-3 WG2131337-4 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Mercury, Total	ND	1.58	1.42	90		1.29	92		80-120	10		20
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2131661-3 WG2131661-4 QC Sample: L2565264-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00464	93		0.00495	99		75-125	7		20
Total Metals - Mansfield Lab Associated sample(s): 38 QC Batch ID: WG2131661-5 WG2131661-6 QC Sample: L2565423-06 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00495	99		0.00492	98		75-125	1		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137117-3 QC Sample: L2569152-03 Client ID: MS Sample												
Aluminum, Total	8830	165	4450	**0**	Q	-	-		75-125	-		
Antimony, Total	25.7	41.3	35.1	**23**	Q	-	-		75-125	-		
Arsenic, Total	30.4	9.91	28.4	**0**	Q	-	-		75-125	-		
Barium, Total	1090	165	724	**0**	Q	-	-		75-125	-		
Beryllium, Total	0.450J	4.13	4.38	106		-	-		75-125	-		
Cadmium, Total	2.38J	4.38	7.10	**162**	Q	-	-		75-125	-		
Calcium, Total	82700	826	36800	**0**	Q	-	-		75-125	-		
Chromium, Total	118	16.5	81.0	**0**	Q	-	-		75-125	-		
Cobalt, Total	23.4	41.3	57.3	82		-	-		75-125	-		
Copper, Total	1840	20.6	1640	**0**	Q	-	-		75-125	-		
Iron, Total	147000	82.6	83100	**0**	Q	-	-		75-125	-		
Lead, Total	20200	43.8	17600	**0**	Q	-	-		75-125	-		
Magnesium, Total	28200	826	15900	**0**	Q	-	-		75-125	-		
Manganese, Total	1760	41.3	927	**0**	Q	-	-		75-125	-		
Nickel, Total	145	41.3	197	**126**	Q	-	-		75-125	-		
Potassium, Total	4890	826	2800	**0**	Q	-	-		75-125	-		
Selenium, Total	ND	9.91	NDQ	**0**	Q	-	-		75-125	-		
Silver, Total	1.88J	4.13	5.14	124		-	-		75-125	-		
Sodium, Total	1080	826	1420	**41**	Q	-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137117-3 QC Sample: L2569152-03 Client ID: MS Sample												
Thallium, Total	ND	9.91	8.38	84		-	-		75-125	-		
Vanadium, Total	39.5	41.3	64.3	**60**	Q	-	-		75-125	-		
Zinc, Total	2500	41.3	2300	**0**	Q	-	-		75-125	-		
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137119-3 QC Sample: L2569152-01 Client ID: MS Sample												
Mercury, Total	0.110	1.53	1.50	91		-	-		80-120	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137117-4 QC Sample: L2569152-03 Client ID: DUP Sample						
Aluminum, Total	8830	4150	mg/kg	**72**	Q	20
Antimony, Total	25.7	19.4J	mg/kg	NC		20
Arsenic, Total	30.4	20.3	mg/kg	**40**	Q	20
Barium, Total	1090	444	mg/kg	**84**	Q	20
Beryllium, Total	0.450J	0.248J	mg/kg	NC		20
Cadmium, Total	2.38J	3.37J	mg/kg	NC		20
Calcium, Total	82700	31000	mg/kg	**91**	Q	20
Chromium, Total	118	72.4	mg/kg	**48**	Q	20
Cobalt, Total	23.4	19.4	mg/kg	19		20
Copper, Total	1840	2320	mg/kg	**23**	Q	20
Iron, Total	147000	92700	mg/kg	**45**	Q	20
Lead, Total	20200	20700	mg/kg	2		20
Magnesium, Total	28200	13200	mg/kg	**72**	Q	20
Manganese, Total	1760	883	mg/kg	**66**	Q	20
Nickel, Total	145	132	mg/kg	9		20
Potassium, Total	4890	1980	mg/kg	**85**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137117-4 QC Sample: L2569152-03 Client ID: DUP Sample						
Silver, Total	1.88J	2.17	mg/kg	NC		20
Sodium, Total	1080	650J	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	39.5	28.5	mg/kg	**32**	Q	20
Zinc, Total	2500	2860	mg/kg	13		20
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137119-4 QC Sample: L2569152-01 Client ID: DUP Sample						
Mercury, Total	0.110	0.232	mg/kg	**71**	Q	20

Project Name: HVRA
Project Number: 18.8090

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,12 QC Batch ID: WG2131334-6 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0						
Aluminum, Total	11000	11200	mg/kg	2		20
Barium, Total	35.6	36.7	mg/kg	3		20
Calcium, Total	10300	11000	mg/kg	7		20
Copper, Total	26.4	26.4	mg/kg	0		20
Iron, Total	21900	25000	mg/kg	14		20
Magnesium, Total	9490	10000	mg/kg	5		20
Manganese, Total	830	892	mg/kg	7		20
Total Metals - Mansfield Lab Associated sample(s): 34 QC Batch ID: WG2137117-6 QC Sample: L2569152-03 Client ID: DUP Sample						
Aluminum, Total	8830	8810	mg/kg	0		20
Barium, Total	1090	1080	mg/kg	1		20
Calcium, Total	82700	85100	mg/kg	3		20
Chromium, Total	118	119	mg/kg	1		20
Copper, Total	1840	1840	mg/kg	0		20
Iron, Total	147000	157000	mg/kg	7		20
Lead, Total	20200	20300	mg/kg	0		20
Magnesium, Total	28200	29600	mg/kg	5		20
Manganese, Total	1760	1820	mg/kg	3		20
Zinc, Total	2500	2650	mg/kg	6		20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-01
Client ID: B-30_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:20
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.9		%	0.100	0.100	1	-	10/20/25 14:06	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-02
Client ID: B-30_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:23
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	94.7		%	0.100	0.100	1	-	10/20/25 14:06	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-04
Client ID: B-30_9.0-10.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 13:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.5		%	0.100	NA	1	-	10/18/25 12:16	121,2540G	ROI
Cyanide, Total	ND		mg/kg	0.96	0.20	1	10/23/25 17:40	10/24/25 13:19	1,9010C/9012B	JER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-05
Client ID: B-31_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 14:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.4		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-06
Client ID: B-31_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 14:38
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.3		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-09
Client ID: B-32_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:16
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.5		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-10
Client ID: B-32_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:18
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.4		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-12
Client ID: B-32_6.0-7.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:25
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.4		%	0.100	NA	1	-	10/18/25 14:17	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	10/28/25 10:30	10/28/25 16:22	1,9010C/9012B	JER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-22
Client ID: B-36_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:06
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.5		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-23
Client ID: B-36_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:08
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	93.1		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-25
Client ID: B-37_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:40
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.3		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-26
Client ID: B-37_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:42
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.7		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-28
Client ID: B-38_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:20
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	94.6		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-29
Client ID: B-38_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 10:23
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	93.0		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-31
Client ID: B-39_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.7		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-32
Client ID: B-39_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 09:52
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.3		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-34
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 00:00
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/kg	0.99	0.21	1	10/29/25 23:50	10/30/25 10:09	1,9010C/9012B	JER
General Chemistry - Mansfield Lab										
Solids, Total	94.9		%	0.100	0.100	1	-	10/20/25 13:41	121,2540G	SER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

SAMPLE RESULTS

Lab ID: L2566083-38
Client ID: M&S_IDW_DECONWATER
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 08:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.010		mg/l	0.005	0.001	1	10/23/25 21:00	10/24/25 10:40	1,9010C/9012B	JER

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG2131948-1										
Cyanide, Total	ND		mg/kg	0.95	0.20	1	10/23/25 17:40	10/24/25 12:16	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 38 Batch: WG2132004-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	10/23/25 21:00	10/24/25 10:27	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 12 Batch: WG2133640-1										
Cyanide, Total	ND		mg/kg	0.89	0.19	1	10/28/25 10:30	10/28/25 15:53	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 34 Batch: WG2134615-1										
Cyanide, Total	ND		mg/kg	0.94	0.20	1	10/29/25 23:50	10/30/25 10:05	1,9010C/9012B	JER

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG2131948-2 WG2131948-3								
Cyanide, Total	**71**	Q	90		80-120	22		35
General Chemistry - Westborough Lab Associated sample(s): 38 Batch: WG2132004-2 WG2132004-3								
Cyanide, Total	104		101		85-115	3		20
General Chemistry - Westborough Lab Associated sample(s): 12 Batch: WG2133640-2 WG2133640-3								
Cyanide, Total	81		87		80-120	8		35
General Chemistry - Westborough Lab Associated sample(s): 34 Batch: WG2134615-2 WG2134615-3								
Cyanide, Total	93		81		80-120	13		35

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2131948-4 WG2131948-5 QC Sample: L2565695-06 Client ID: MS Sample												
Cyanide, Total	ND	11	11	99		10	94		75-125	5		35
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2131948-6 WG2131948-7 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0												
Cyanide, Total	ND	10	11	110		9.3	91		75-125	17		35
General Chemistry - Westborough Lab Associated sample(s): 38 QC Batch ID: WG2132004-4 WG2132004-5 QC Sample: L2565278-11 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.201	100		0.202	101		80-120	0		20
General Chemistry - Westborough Lab Associated sample(s): 12 QC Batch ID: WG2133640-4 WG2133640-5 QC Sample: L2565459-01 Client ID: MS Sample												
Cyanide, Total	ND	11	11	100		10	99		75-125	1		35
General Chemistry - Westborough Lab Associated sample(s): 12 QC Batch ID: WG2133640-6 WG2133640-7 QC Sample: L2566083-12 Client ID: B-32_6.0-7.0												
Cyanide, Total	ND	10	9.1	91		10	97		75-125	6		35
General Chemistry - Westborough Lab Associated sample(s): 34 QC Batch ID: WG2134615-4 WG2134615-5 QC Sample: L2567356-04 Client ID: MS Sample												
Cyanide, Total	ND	15	16	110		15	100		75-125	10		35
General Chemistry - Westborough Lab Associated sample(s): 34 QC Batch ID: WG2134615-6 WG2134615-7 QC Sample: L2566902-01 Client ID: MS Sample												
Cyanide, Total	0.66J	12	12	97		14	110		75-125	13		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG2129554-1 QC Sample: L2566083-04 Client ID: B-30_9.0-10.0						
Solids, Total	95.5	93.3	%	2		10
General Chemistry - Westborough Lab Associated sample(s): 12 QC Batch ID: WG2129580-1 QC Sample: L2565888-01 Client ID: DUP Sample						
Solids, Total	92.2	94.0	%	2		10
General Chemistry - Mansfield Lab Associated sample(s): 05-06,09-10,22-23,25-26,28-29,31-32,34 QC Batch ID: WG2130182-1 QC Sample: L2566083-32 Client ID: B-39_0.17-1.0						
Solids, Total	92.3	92.0	%	0		10
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2130193-1 QC Sample: L2565918-01 Client ID: DUP Sample						
Solids, Total	85.3	85.6	%	0		10

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-01A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-01B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-02A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-02B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-03A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-03B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-04A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW(14)
L2566083-04A1	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW(14)
L2566083-04A2	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW(14)
L2566083-04B	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04B1	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04B2	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04C	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04C1	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04C2	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-04D	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),CO-TI(180),V-TI(180),HG-T(28),MN-TI(180),FE-TI(180),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-04D1	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),CO-TI(180),V-TI(180),HG-T(28),MN-TI(180),FE-TI(180),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2566083-04D2	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),CO-TI(180),V-TI(180),HG-T(28),MN-TI(180),FE-TI(180),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2566083-04E	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2566083-04E1	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2566083-04E2	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2566083-04F	Plastic 120ml unpreserved	NA	NA			Y	Absent		TS(7)
L2566083-04F1	Plastic 120ml unpreserved	NA	NA			Y	Absent		TS(7)
L2566083-04F2	Plastic 120ml unpreserved	NA	NA			Y	Absent		TS(7)
L2566083-04G	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-04G1	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-04G2	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-04H	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2566083-04H1	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2566083-04H2	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2566083-05A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-05B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-06A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-06B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-07A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-07B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-08A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-08B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-09A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-09B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-10A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-10B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-11A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-11B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-12A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW(14)
L2566083-12B	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-12C	Vial water preserved	NA	NA			Y	Absent	18-OCT-25 06:29	NYTCL-8260HLW(14)
L2566083-12D	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),TL-TI(180),SB-TI(180),SE-TI(180),PB-TI(180),CU-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2566083-12E	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2566083-12F	Plastic 120ml unpreserved	NA	NA			Y	Absent		TS(7)
L2566083-12G	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-12H	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(365)
L2566083-13A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-13B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-14A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-14B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-15A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-15B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-16A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566083
Report Date: 11/12/25

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-16B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-17A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-17B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-18A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-18B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-19A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-19B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-20A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-20B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-21A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-21B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-22A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-22B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-23A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-23B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-24A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-24B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-25A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-25B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-26A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-26B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-27A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-27B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-28A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-28B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-29A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-29B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-30A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-30B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-31A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-31B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-32A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-32A1	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-32A2	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-32B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-32B1	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-32B2	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-33A	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-33B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-34A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW(14)
L2566083-34B	Vial water preserved	NA	NA			Y	Absent	**18-OCT-25 06:29**	NYTCL-8260HLW(14)
L2566083-34C	Vial water preserved	NA	NA			Y	Absent	**18-OCT-25 06:29**	NYTCL-8260HLW(14)
L2566083-34D	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),SE-TI(180),CU-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),K-TI(180),NA-TI(180),CA-TI(180),CD-TI(180)
L2566083-34E	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		A2-TS(7)
L2566083-34F	Plastic 120ml unpreserved	NA	NA			Y	Absent		A2-TS(7)
L2566083-34G	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-NY-1633(90)
L2566083-34H	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(365)
L2566083-35A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		HOLD-WETCHEM()
L2566083-35B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		HOLD-1633(90)
L2566083-36A	Plastic 250ml unpreserved	NA	NA			Y	Absent		A2-NY-1633(28)
L2566083-36B	Plastic 250ml unpreserved	NA	NA			Y	Absent		A2-NY-1633(28)
L2566083-37A	Plastic 250ml unpreserved	NA	NA			Y	Absent		HOLD-1633(28)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566083-37B	Plastic 250ml unpreserved	NA	NA			Y	Absent		HOLD-1633(28)
L2566083-38A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-38B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-38C	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-38D	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8081-RVT(7)
L2566083-38E	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8081-RVT(7)
L2566083-38F	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8082-RVT(365)
L2566083-38G	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8082-RVT(365)
L2566083-38H	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2566083-38I	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2566083-38J	Plastic 250ml HNO3 preserved	NA	NA			Y	Absent		TL-6020T(180),SE-6020T(180),BA-6020T(180),FE-6020T(180),K-6020T(180),CA-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),SB-6020T(180),V-6020T(180),AS-6020T(180),MG-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28),AL-6020T(180),CO-6020T(180)
L2566083-38K	Plastic 250ml NaOH preserved	NA	NA			Y	Absent		TCN-9010(14)
L2566083-38L	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2566083-38M	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2566083-38N	Plastic 250ml unpreserved	NA	NA			Y	Absent		A2-NY-1633(28)
L2566083-38O	Plastic 250ml unpreserved	NA	NA			Y	Absent		A2-NY-1633(28)
L2566083-39A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-39B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-39C	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2566083-39D	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were

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estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

168 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. EPA Method 1633A, EPA 820-R-24-007, December 2024. For Massachusetts Contingency Plan, WSC-CAM-XA, September 2025.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
MA M-MA00030, CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

NEW YORK CHAIN OF CUSTODY

L2566083
CTMALE

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 4

Date Rec'd in Lab: 10/18/25

Client Information

Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY 12110
Phone: 518-786-7400
Fax: e.White@ctmale.com
Email: j.mciver@ctmale.com

Project Information

Project Name: HVRA
Project Location: 18 Griffith Way, Wapp. Falls, NY
Project #: 18.8090
(Use Project name as Project #) ☐
Project Manager: Eric White / Jim McIver
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information

☒ Same as Client Info
PO # 18.8090 Task 250

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please also send results to m.laughlin@ctmale.com & m.williams@ctmale.com
(*) Please note samples placed on HOLD (*)

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs EPA 8260	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide		Sample Specific Comments	Total Bottle
66083-01	B-30_0.0-0.17	10/16/25	13:20	SOIL	ML	✓									2
-02	B-30_0.17-1.0		13:23		ML	✓									2
-03	B-30_1.0-2.0		13:25		ML	✓								HOLD	2
-04	B-30_9.0-10.0		13:35		ML	✓	✓	✓	✓	✓	✓	✓		MS/MSD HOLD PFAS ONLY	24
-05	B-31_0.0-0.17		14:35		ML	✓									2
-06	B-31_0.17-1.0		14:38		ML	✓									2
-07	B-31_1.0-2.0		14:42		ML	✓								HOLD	2
-08	B-31_9.0-10.0		14:45		ML	✓	✓	✓	✓	✓	✓	✓	ML	HOLD ~~PFAS ONLY~~ (ML)	2
-09	B-32_0.0-0.17		9:16		ML	✓									2
-10	B-32_0.17-1.0	↓	9:18	↓	ML	✓									2

Container Type	P	V/P	A	A	A	A	A	F
Preservative	A	F/A	A	A	A	A	A	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		10/17/25 17:48
	10/17/25 2033	Anthony Green	OCT 17 2025 2100
Anthony Green Alberto Liz	10-18-25 0350	Alberto Liz	10-18-25 0200
		M	10/18/25 0350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTITUTIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 4

Date Rec'd in Lab: 10/18/25

ALPHA Job #: L2566083

Client Information
Client: C.T. Male Associates
Address: 50 century Hill Drive, Latham, NY 12110
Phone: 518-786-7400
Fax: e.white@ctmale.com
Email: m.laughlin@ctmale.com

Project Information
Project Name: HVRA
Project Location: 18 Griffith Way, Wapp. Falls, NY
Project #: 18.8090
(Use Project name as Project #) ☐
Project Manager: Eric White/Jim McIver
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO # 18.8090 Task 260

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Please also send results to m.laughlin@ctmale.com & m.williams@ctmale.com
(*) Please note samples placed on HOLD (*)

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide	Sample Specific Comments	Total Bottle
66083-11	B-32_1.0-2.0	10/16/25	9:20	SOIL	ML								HOLD	2
-12	B-32_6.0-7.0		9:25		ML	✓	✓	✓	✓	✓	✓	✓	HOLD PFAS only	8
-13	B-33_0.0-0.17		12:47		ML									2
-14	B-33_0.17-1.0		12:50		ML									2
-15	B-33_1.0-2.0		12:55		ML								HOLD	2
-16	B-34_0.0-0.17		15:16		ML									2
-17	B-34_0.17-1.0		15:19		ML									2
-18	B-34_1.0-2.0		16:22		ML								HOLD	2
-19	B-35_0.0-0.17		15:26		ML									2
-20	B-35_0.17-1.0		15:28		ML									2

Container Type	P	V/P	A	A	A	A	A	
Preservative	A	F/A	A	A	A	A	A	

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		10/17/25 17:48
	10/17/25 2033	Anthony Green	OCT 17 2025 2100
Anthony Green		Alberto Liz	10-18-25 0200
Alberto Liz	10-18-25 0350		10/18/25 03:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 4

Date Rec'd in Lab: 10/18/25

ALPHA Job #: L2566083

Client Information
Client: C.T. Male Associates
Address: 50 century Hill Drive
Latham, NY 12110
Phone: 518 - 786 - 7400
Fax: e.white@ctmale.com
Email: j.mciver@ctmale.com

Project Information
Project Name: HVRA
Project Location: 18 Griffith Way, Wapp Falls, NY
Project # 18.8090
(Use Project name as Project #) ☐
Project Manager: Eric White / Jim McIver
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO # 18.8090
Task 250

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Please also send results to m.laughlin@ctmale.com & m.williams@ctmale.com
(*)Please note samples placed on HOLD(*)

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs EPA 8260	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide		Sample Specific Comments	Total Bottle
66 083 -21	B-35-1.0-2.0	10/16/25	15:30	SOIL	ML	✓								HOLD	2
-22	B-36-0.0-0.17		15:06		ML	✓									2
-23	B-36-0.17-1.0		15:08		ML	✓									2
-24	B-36-1.0-2.0		15:10		ML	✓								HOLD	2
-25	B-37-0.0-0.17		10:40		ML	✓									2
-26	B-37-0.17-1.0		10:42		ML	✓									2
-27	B-37-1.0-2.0		10:46		ML	✓								HOLD	2
-28	B-38-0.0-0.17		10:20		ML	✓									2
-29	B-38-0.17-1.0		10:23		ML	✓									2
-30	B-38-1.0-2.0	↓	10:25	↓	ML	✓								HOLD	2

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Container Type	P	V/P	A	A	A	A	A	
Preservative	A	F/A	A	A	A	A	A	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		10/17/25 17:48
	10/17/25 2033	Anthony Green	OCT 17 2025 2100
Anthony Green		Alberto Liz	10-18-25 0200
Alberto Liz	10-18-25 0350	dr	10/18/25 0350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Pace ANALYTICAL SERVICES

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Woodcliff Lake, NJ 07677: 123 Tice Blvd, Suite 101
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 4

Date Rec'd in Lab: 10/18/25

Pace Job #: L2566083

Client Information
Client: C.T. Male Associates
Address: 50 century Hill Drive
Latham, NY 12110
Phone: 518-786-7400
Fax: e.White@ctmale.com
Email: j.maiver@ctmale.com

Project Information
Project Name: HVRA
Project Location: 18 Griffith Way, Wappingers Falls, NY
Project # 18.8090
(Use Project name as Project #) ☐
Project Manager: Eric White / Jim McIver
PACE Quote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO # 18.8090 Task 250

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Pace ☐

Other project specific requirements/comments:
Please also send results to m.loughlin@ctmale.com and to m.williams@ctmale.com (*) Please note samples on HOLD (*)

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

PACE Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs EPA 8260	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide		Sample Specific Comments	Total Bottle
66083-31	B-39_0.0-0.17	10/16/25	9:50	SOIL	ML	✓									2
-32	B-39_0.17-1.0		9:52		ML	✓								MS/MSD	6
-33	B-39_1.0-2.0		9:57		ML	✓								HOLD	2
-34	FD01_251016		—		ML	✓									2
-35	FD02_251016		—	↓	ML	✓								HOLD	2
-36	M&S_EB01_251016		8:30	WATER	ML	✓									2
-37	M&S_EB02_251016	↓	8:32	WATER	ML	✓								HOLD	2
-38	M&S_IDW_DECONWATER	10/17/25	8:50	WATER	ML	✓	✓	✓	✓	✓	✓	✓			15

Container Type	P	V/P	A	A	A	A	A	
Preservative	A	F/A	A	A	A	A	A	

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		10/17/25 17:42
	10/17/25 2033	Anthony Green	OCT 17 2025 2033
Anthony Green		Alberto Liz	10-18-25 0200
Alberto Liz	10-18-25 0350		10/18/25 03:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY PACE'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 29-Jan-2025)

Sample Delivery Group Summary

Pace Job Number : L2566083

Account Name : C.T. Male Associates
Project Number : 18.8090
Project Name : HVRA

Received : 17-OCT-2025
Reviewer : Owen Jefferson

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	2.6	
B	Absent/	Ice	2.4	
C	Absent/	Ice	3.3	

Condition Information

1) All samples on COC received? **YES**

2) Extra samples received? **YES**
Following additional samples were received: -39

3) Are there any sample container discrepancies? **YES**
L2566083-34A (HOLD-8260HLW) was received in extra container.
L2566083-34B (HOLD-8260HLW) was received in extra container.
L2566083-34C (HOLD-8260HLW) was received in extra container.
L2566083-34D (HOLD-METAL) was received in extra container.
L2566083-34H (HOLD-8082) was received in extra container.
L2566083-34H (HOLD-8270) was received in extra container.
L2566083-34H (HOLD-WETCHEM) was received in extra container.
L2566083-34H (HOLD-8081) was received in extra container.

4) Are there any discrepancies between COC & sample labels? **NO**

5) Are samples in appropriate containers for requested analysis? **YES**

6) Are samples properly preserved for requested analysis? **YES**

7) Are samples within holding time for requested analysis? **YES**

8) All sampling equipment returned? **NA**

Sample Delivery Group Summary

Pace Job Number : L2566083

Account Name : C.T. Male Associates
Project Number : 18.8090
Project Name : HVRA

Received : 17-OCT-2025
Reviewer : Owen Jefferson

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client? **NO**

ANALYTICAL REPORT

Lab Number:	L2573310
Client:	C.T. Male Associates 12 Raymond Ave. 2nd Floor Poughkeepsie, NY 12603
ATTN:	Eric White
Phone:	(885) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	11/25/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2573310-01	B-33_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 12:47	10/17/25
L2573310-02	B-33_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 12:50	10/17/25
L2573310-03	B-34_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:16	10/17/25
L2573310-04	B-34_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:19	10/17/25
L2573310-05	B-35_0.0-0.17	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:26	10/17/25
L2573310-06	B-35_0.17-1.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:28	10/17/25

Project Name:	HVRA	**Lab Number:**	L2573310
Project Number:	18.8090	**Report Date:**	11/25/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L2573310
Project Number:	18.8090	**Report Date:**	11/25/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2573310-01, -02, -03, -04, -05, and -06: The analysis of Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA) exceeded the 3-day holding time recommended by the method for soil/sediment and tissue matrices.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 11/25/25

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-01
Client ID: B-33_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY
Date Collected: 10/16/25 12:47
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:01
Analyst: ANH
Percent Solids: 94%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.813	0.106	1
Perfluoropentanoic Acid (PFPeA)	0.067	J	ng/g	0.406	0.041	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.203	0.037	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.813	0.156	1
Perfluorohexanoic Acid (PFHxA)	0.049	J	ng/g	0.203	0.035	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.203	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.203	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.203	0.035	1
Perfluorooctanoic Acid (PFOA)	0.222		ng/g	0.203	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.813	0.116	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.203	0.035	1
Perfluorononanoic Acid (PFNA)	0.167	J	ng/g	0.203	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.453		ng/g	0.203	0.047	1
Perfluorodecanoic Acid (PFDA)	0.071	J	ng/g	0.203	0.033	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.813	0.240	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.203	0.096	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.203	0.098	1
Perfluoroundecanoic Acid (PFUnA)	0.085	J	ng/g	0.203	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.203	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.203	0.039	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.203	0.079	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.203	0.037	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.203	0.033	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.203	0.043	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.813	0.163	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.813	0.289	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-01 Date Collected: 10/16/25 12:47

Client ID: B-33_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.203	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.813	0.154	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.813	0.246	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.203	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.203	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.03	0.254	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.03	0.246	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.406	0.037	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.406	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.406	0.049	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.406	0.122	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.02	0.352	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.08	0.943	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.08	1.67	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-01 Date Collected: 10/16/25 12:47

Client ID: B-33_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	92		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	85		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	103		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	94		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	96		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	80		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	61		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	62		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-02
Client ID: B-33_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 12:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:10
Analyst: ANH
Percent Solids: 91%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.791	0.103	1
Perfluoropentanoic Acid (PFPeA)	0.057	J	ng/g	0.396	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.198	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.791	0.152	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.198	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.198	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.198	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.198	0.034	1
Perfluorooctanoic Acid (PFOA)	0.115	J	ng/g	0.198	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.791	0.113	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.198	0.034	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.198	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.227		ng/g	0.198	0.046	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.198	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.791	0.233	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.198	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.198	0.095	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.198	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.198	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.198	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.198	0.077	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.198	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.198	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.198	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.791	0.158	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.791	0.281	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-02 Date Collected: 10/16/25 12:50

Client ID: B-33_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.198	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.791	0.150	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.791	0.239	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.198	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.198	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.98	0.247	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.98	0.239	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.396	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.396	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.396	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.396	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.989	0.342	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.94	0.918	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.94	1.62	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-02 Date Collected: 10/16/25 12:50

Client ID: B-33_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	85		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	90		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	101		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	97		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	96		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	55		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	69		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64		15-130

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-03
Client ID: B-34_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:16
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:19
Analyst: ANH
Percent Solids: 75%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.115	J	ng/g	0.795	0.103	1
Perfluoropentanoic Acid (PFPeA)	0.060	J	ng/g	0.397	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.795	0.153	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.199	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.082	J	ng/g	0.199	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.199	0.034	1
Perfluorooctanoic Acid (PFOA)	0.276		ng/g	0.199	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.795	0.113	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.034	1
Perfluorononanoic Acid (PFNA)	0.216		ng/g	0.199	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.628		ng/g	0.199	0.046	1
Perfluorodecanoic Acid (PFDA)	0.133	J	ng/g	0.199	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.795	0.234	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.093	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.095	1
Perfluoroundecanoic Acid (PFUnA)	0.171	J	ng/g	0.199	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.078	1
Perfluorododecanoic Acid (PFDoA)	0.076	J	ng/g	0.199	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	0.064	J	ng/g	0.199	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.795	0.159	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.795	0.282	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-03 Date Collected: 10/16/25 15:16

Client ID: B-34_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.795	0.151	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.795	0.240	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.248	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.240	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.397	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.397	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.397	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.397	0.119	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.993	0.344	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	0.922	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.63	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-03 Date Collected: 10/16/25 15:16

Client ID: B-34_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	99		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	99		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	96		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	97		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	97		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	105		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	103		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	98		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	96		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	89		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	107		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	85		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	88		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	91		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	81		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	65		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-04
Client ID: B-34_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:19
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:28
Analyst: ANH
Percent Solids: 77%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.431	J	ng/g	0.801	0.104	1
Perfluoropentanoic Acid (PFPeA)	0.338	J	ng/g	0.401	0.040	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.801	0.154	1
Perfluorohexanoic Acid (PFHxA)	0.200		ng/g	0.200	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.332		ng/g	0.200	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.066	J	ng/g	0.200	0.034	1
Perfluorooctanoic Acid (PFOA)	0.841		ng/g	0.200	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.801	0.114	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034	1
Perfluorononanoic Acid (PFNA)	0.386		ng/g	0.200	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	1.03		ng/g	0.200	0.046	1
Perfluorodecanoic Acid (PFDA)	0.182	J	ng/g	0.200	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.801	0.236	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096	1
Perfluoroundecanoic Acid (PFUnA)	0.292		ng/g	0.200	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078	1
Perfluorododecanoic Acid (PFDoA)	0.110	J	ng/g	0.200	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	0.108	J	ng/g	0.200	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	0.092	J	ng/g	0.200	0.042	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.801	0.160	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.801	0.284	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-04 Date Collected: 10/16/25 15:19

Client ID: B-34_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.801	0.152	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.801	0.242	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.401	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.401	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.401	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.401	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.01	0.929	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.01	1.64	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-04 Date Collected: 10/16/25 15:19

Client ID: B-34_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	98		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	101		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	98		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	98		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	93		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	100		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	100		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	90		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	104		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	90		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	90		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	87		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	100		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-05
Client ID: B-35_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:26
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:37
Analyst: ANH
Percent Solids: 88%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.785	0.102	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.393	0.039	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.196	0.035	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.785	0.151	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.196	0.033	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.196	0.028	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.196	0.071	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.196	0.033	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.196	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.785	0.112	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.196	0.033	1
Perfluorononanoic Acid (PFNA)	0.069	J	ng/g	0.196	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.290		ng/g	0.196	0.045	1
Perfluorodecanoic Acid (PFDA)	0.071	JF	ng/g	0.196	0.031	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.785	0.232	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.196	0.092	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.196	0.094	1
Perfluoroundecanoic Acid (PFUnA)	0.079	J	ng/g	0.196	0.055	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.196	0.055	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.196	0.037	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.196	0.077	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.196	0.035	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.196	0.031	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.196	0.041	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.785	0.157	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.785	0.279	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-05 Date Collected: 10/16/25 15:26

Client ID: B-35_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.196	0.057	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.785	0.149	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.785	0.238	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.196	0.059	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.196	0.065	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.96	0.245	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.96	0.238	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.393	0.035	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.393	0.051	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.393	0.047	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.393	0.118	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.982	0.340	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.91	0.911	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.91	1.61	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-05 Date Collected: 10/16/25 15:26

Client ID: B-35_0.0-0.17 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	86		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	94		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	92		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	104		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	95		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	88		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	93		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	82		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	65		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	61		15-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-06
Client ID: B-35_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:28
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 11/23/25 16:46
Analyst: ANH
Percent Solids: 92%

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.154	J	ng/g	0.810	0.105	1
Perfluoropentanoic Acid (PFPeA)	0.097	J	ng/g	0.405	0.041	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.202	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.810	0.156	1
Perfluorohexanoic Acid (PFHxA)	0.063	J	ng/g	0.202	0.034	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.202	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.128	J	ng/g	0.202	0.073	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.202	0.034	1
Perfluorooctanoic Acid (PFOA)	0.678		ng/g	0.202	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.810	0.115	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.202	0.034	1
Perfluorononanoic Acid (PFNA)	0.360		ng/g	0.202	0.024	1
Perfluorooctanesulfonic Acid (PFOS)	0.401		ng/g	0.202	0.047	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.202	0.032	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.810	0.239	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.202	0.095	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.202	0.097	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.202	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.202	0.057	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.202	0.039	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.202	0.079	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.202	0.036	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.202	0.032	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.202	0.043	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.810	0.162	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.810	0.287	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-06 Date Collected: 10/16/25 15:28

Client ID: B-35_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.202	0.059	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.810	0.154	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.810	0.245	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.202	0.061	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.202	0.067	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.02	0.253	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.02	0.245	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.405	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.405	0.053	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.405	0.049	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.405	0.121	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.01	0.350	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.06	0.939	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.06	1.66	1

Project Name: HVRA **Lab Number:** L2573310

Project Number: 18.8090 **Report Date:** 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-06 Date Collected: 10/16/25 15:28

Client ID: B-35_0.17-1.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	85		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	92		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	92		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	99		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	92		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	82		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	81		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	69		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	53		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	65		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	63		15-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 11/23/25 13:43
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG2145068-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.104
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.040
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.036
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.154
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.034
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.034
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.044
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.114
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.024
Perfluorooctanesulfonic Acid (PFOS)	0.068	J	ng/g	0.200	0.046
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.032
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.236
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.056
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.056
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.038
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.036
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.032

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 11/23/25 13:43
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG2145068-1					
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.042
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.160
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.284
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.058
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.152
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.242
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.036
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.052
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.048
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.120
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.928
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.64

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 11/23/25 13:43
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 11/21/25 17:07
Cleanup Method: EPA 1633
Cleanup Date: 11/21/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-06 Batch: WG2145068-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	102		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	123		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	102		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	102		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	116		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	100		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	100		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	95		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	100		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	90		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	95		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	71		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	54		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	70		15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	82		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	88		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	87		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	94		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	83		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	80		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	88		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	68		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	72		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	94		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	94		-		65-155	-		
Perfluorononanoic Acid (PFNA)	89		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	98		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	84		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	97		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	87		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	76		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	91		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-2 LOW LEVEL								
Perfluorodecanesulfonic Acid (PFDS)	72		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	89		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	92		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	82		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	67		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	97		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	88		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	98		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	67		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	104		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	82		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	80		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	87		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	92		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	97		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	79		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-2 LOW LEVEL								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	89		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	76		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	88		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	82		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	82		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	76		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	102				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	103				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	101				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	110				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	106				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	102				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	111				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	99				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	94				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	98				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	93				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	93				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	90				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	77				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-3								
Perfluorobutanoic Acid (PFBA)	88		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	91		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	78		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	86		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	82		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	88		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	92		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	85		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	74		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	92		-		65-155	-		
Perfluorononanoic Acid (PFNA)	100		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	87		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	92		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	98		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	86		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	92		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	89		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-3								
Perfluorodecanesulfonic Acid (PFDS)	74		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	85		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	97		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	92		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	70		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	96		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	84		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	103		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	68		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	100		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	84		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	90		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	90		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	93		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	100		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	92		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-3								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	92		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	91		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	86		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	93		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	99		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	84		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-06 Batch: WG2145068-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	99				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	105				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	112				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	96				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	102				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	110				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	106				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	100				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	95				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	103				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	105				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	99				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	100				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	68				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	86				15-130

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-01
Client ID: B-33_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 12:47
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	93.7		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-02
Client ID: B-33_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 12:50
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.7		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-03
Client ID: B-34_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:16
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	75.4		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-04
Client ID: B-34_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:19
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.4		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-05
Client ID: B-35_0.0-0.17
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:26
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.2		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

SAMPLE RESULTS

Lab ID: L2573310-06
Client ID: B-35_0.17-1.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:28
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.9		%	0.100	0.100	1	-	11/19/25 11:09	121,2540G	SDS

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG2143785-1 QC Sample: L2573310-06 Client ID: B-35_0.17-1.0						
Solids, Total	91.9	91.0	%	1		10

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2573310-01B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)
L2573310-02B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)
L2573310-03B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)
L2573310-04B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)
L2573310-05B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)
L2573310-06B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2573310
Report Date: 11/25/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	HVRA	**Lab Number:**	L2573310
Project Number:	18.8090	**Report Date:**	11/25/25

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L2573310
Project Number:	18.8090	**Report Date:**	11/25/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L2573310
Project Number:	18.8090	**Report Date:**	11/25/25

Data Qualifiers

estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2573310
Report Date: 11/25/25

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

168 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. EPA Method 1633A, EPA 820-R-24-007, December 2024. For Massachusetts Contingency Plan, WSC-CAM-XA, September 2025.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
MA M-MA00030, CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 4

Date Rec'd in Lab: 10/18/25

L2573310 AJK 11/18/25

Client Information
Client: C.T. Male Associates
Address: 50 century Hill Drive, Latham, NY 12110
Phone: 518-786-7400
Fax: e.white@ctmale.com
Email: m.laughlin@ctmale.com

Project Information
Project Name: HVRA
Project Location: 18 Griffith Way, Wapp. Falls, NY
Project #: 18.8090
(Use Project name as Project #)
Project Manager: Eric White/Jim McIver
ALPHAQuote #:

Turn-Around Time
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

Deliverables
[ ] ASP-A [X] ASP-B
[ ] EQuIS (1 File) [X] EQuIS (4 File)
[ ] Other

Regulatory Requirement
[ ] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use
[ ] NYC Sewer Discharge

Billing Information
[X] Same as Client Info
PO # 18.8090
Task 260

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [ ] NY
[ ] Other:

These samples have been previously analyzed by Alpha [ ]

Other project specific requirements/comments:
Please also send results to m.laughlin@ctmale.com & m.williams@ctmale.com
(*) Please note samples placed on HOLD (*)

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide	Sample Specific Comments	Total Bottles
~~LC-883-1~~	B-32_1.0-2.0	10/16/25	9:20	SOIL	ML								~~HOLD~~	2
-12	B-32_6.0-7.0		9:25		ML	✓	✓	✓	✓	✓	✓	✓	~~HOLD PFAS only~~	8
73310 -01	B-33_0.0-0.17		12:47		ML	X								2
73310 -02	B-33_0.17-1.0		12:50		ML	X								2
-13	B-33_1.0-2.0		12:55		ML								~~HOLD~~	2
73310 -03	B-34_0.0-0.17		16:16		ML	X								2
73310 -04	B-34_0.17-1.0		15:19		ML	X								2
-14	B-34_1.0-2.0		16:22		ML								~~HOLD~~	2
73310 -05	B-35_0.0-0.17		15:26		ML	X								2
73310 -06	B-35_0.17-1.0		16:28		ML	X								2

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	V/P	A	A	A	A	A		
Preservative	A	F/A	A	A	A	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		10/17/25 18:48
	10/17/25 2033	Anthony Green	OCT 17 2025 2033
Anthony Green		Alberto Liz	10-18-25 0200
Alberto Liz	10-18-25 0350		10/18/25 03:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Sample Delivery Group Summary

Pace Job Number : L2573310

Account Name : C.T. Male Associates
Project Number : 18.8090
Project Name : HVRA

Received : 17-OCT-2025
Reviewer : Andrew Kussmaul

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	2.6	
B	Absent/	Ice	2.4	
C	Absent/	Ice	3.3	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between COC & sample labels?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NA**

ANALYTICAL REPORT

Lab Number:	L2575504
Client:	C.T. Male Associates 12 Raymond Ave. 2nd Floor Poughkeepsie, NY 12603
ATTN:	Eric White
Phone:	(885) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	12/04/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2575504-01	B-34_1.0-2.0	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	10/16/25 15:22	10/17/25

Project Name:	HVRA	**Lab Number:**	L2575504
Project Number:	18.8090	**Report Date:**	12/04/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L2575504
Project Number:	18.8090	**Report Date:**	12/04/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by 1633

L2575504-01: The analysis of Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA) exceeded the 3-day holding time recommended by the method for soil/sediment and tissue matrices.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 12/04/25

ORGANICS

SEMIVOLATILES

Project Name: HVRA **Lab Number:** L2575504

Project Number: 18.8090 **Report Date:** 12/04/25

SAMPLE RESULTS

Lab ID: L2575504-01
Client ID: B-34_1.0-2.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:22
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 168,1633A
Analytical Date: 12/04/25 13:22
Analyst: CAB
Percent Solids: 78%

Extraction Method: EPA 1633
Extraction Date: 12/03/25 17:22
Cleanup Method: EPA 1633
Cleanup Date: 12/03/25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.802	0.538	1
Perfluoropentanoic Acid (PFPeA)	0.223	J	ng/g	0.401	0.080	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.050	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.802	0.154	1
Perfluorohexanoic Acid (PFHxA)	0.164	J	ng/g	0.200	0.164	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028	1
Perfluoroheptanoic Acid (PFHpA)	0.235		ng/g	0.200	0.072	1
Perfluorohexanesulfonic Acid (PFHxS)	0.074	J	ng/g	0.200	0.050	1
Perfluorooctanoic Acid (PFOA)	0.724		ng/g	0.200	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.802	0.481	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034	1
Perfluorononanoic Acid (PFNA)	0.327		ng/g	0.200	0.032	1
Perfluorooctanesulfonic Acid (PFOS)	0.770		ng/g	0.200	0.104	1
Perfluorodecanoic Acid (PFDA)	0.148	J	ng/g	0.200	0.050	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.802	0.237	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096	1
Perfluoroundecanoic Acid (PFUnA)	0.210		ng/g	0.200	0.088	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.094	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.114	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078	1
Perfluorododecanoic Acid (PFDoA)	0.102	J	ng/g	0.200	0.100	1
Perfluorotridecanoic Acid (PFTrDA)	0.136	J	ng/g	0.200	0.092	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.146	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.802	0.160	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.802	0.285	1

Project Name: HVRA **Lab Number:** L2575504

Project Number: 18.8090 **Report Date:** 12/04/25

SAMPLE RESULTS

Lab ID: L2575504-01 Date Collected: 10/16/25 15:22

Client ID: B-34_1.0-2.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.094	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.802	0.156	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.802	0.397	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.251	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.243	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.401	0.036	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.401	0.052	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.401	0.048	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.401	0.120	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.347	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.01	1.41	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.01	1.96	1

Project Name: HVRA **Lab Number:** L2575504

Project Number: 18.8090 **Report Date:** 12/04/25

SAMPLE RESULTS

Lab ID: L2575504-01 Date Collected: 10/16/25 15:22

Client ID: B-34_1.0-2.0 Date Received: 10/17/25

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	94		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	113		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	99		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	105		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	101		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	97		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	99		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	97		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	78		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	72		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	97		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	69		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	64		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		15-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 12/04/25 12:46
Analyst: CAB

Extraction Method: EPA 1633
Extraction Date: 12/03/25 17:22
Cleanup Method: EPA 1633
Cleanup Date: 12/03/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG2149160-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.536
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.080
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.050
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.154
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.164
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.028
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.072
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.050
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.044
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.480
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.034
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.032
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.104
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.050
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.236
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.094
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.096
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.088
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.094
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.114
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.078
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.100
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.092

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 12/04/25 12:46
Analyst: CAB

Extraction Method: EPA 1633
Extraction Date: 12/03/25 17:22
Cleanup Method: EPA 1633
Cleanup Date: 12/03/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG2149160-1					
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.146
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.160
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.284
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.094
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.156
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.396
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.060
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.066
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.242
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.036
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.052
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.048
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.120
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.346
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	1.40
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.95

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 168,1633A
Analytical Date: 12/04/25 12:46
Analyst: CAB

Extraction Method: EPA 1633
Extraction Date: 12/03/25 17:22
Cleanup Method: EPA 1633
Cleanup Date: 12/03/25

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG2149160-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	72		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	75		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	66		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	69		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	76		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	68		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	73		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	77		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	72		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	65		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	67		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	63		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	61		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	49		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	42		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	104		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	102		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	116		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	104		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	96		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	105		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	104		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	102		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	123		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	118		-		65-155	-		
Perfluorononanoic Acid (PFNA)	101		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	114		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	96		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	112		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	93		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	102		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	84		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-2 LOW LEVEL								
Perfluorodecanesulfonic Acid (PFDS)	82		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	99		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	129		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	108		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	68		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	109		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	100		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	96		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	72		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	115		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	98		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	82		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	98		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	103		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	105		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-2 LOW LEVEL								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	102		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	92		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	96		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	93		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	96		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	83		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	76				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	79				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	73				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	68				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	76				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	72				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	79				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	90				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	68				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	94				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	67				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	63				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	45				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	58				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	53				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	74				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78				15-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-3								
Perfluorobutanoic Acid (PFBA)	105		-		70-140	-		
Perfluoropentanoic Acid (PFPeA)	108		-		60-150	-		
Perfluorobutanesulfonic Acid (PFBS)	100		-		65-145	-		
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	112		-		60-150	-		
Perfluorohexanoic Acid (PFHxA)	102		-		65-140	-		
Perfluoropentanesulfonic Acid (PFPeS)	114		-		55-160	-		
Perfluoroheptanoic Acid (PFHpA)	102		-		65-145	-		
Perfluorohexanesulfonic Acid (PFHxS)	107		-		60-150	-		
Perfluorooctanoic Acid (PFOA)	103		-		70-150	-		
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	99		-		55-200	-		
Perfluoroheptanesulfonic Acid (PFHpS)	110		-		65-155	-		
Perfluorononanoic Acid (PFNA)	118		-		70-155	-		
Perfluorooctanesulfonic Acid (PFOS)	99		-		65-160	-		
Perfluorodecanoic Acid (PFDA)	100		-		70-155	-		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	105		-		70-150	-		
Perfluorononanesulfonic Acid (PFNS)	102		-		55-140	-		
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	110		-		65-155	-		
Perfluoroundecanoic Acid (PFUnA)	108		-		70-155	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-3								
Perfluorodecanesulfonic Acid (PFDS)	88		-		40-155	-		
Perfluorooctanesulfonamide (PFOSA)	100		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	108		-		65-165	-		
Perfluorododecanoic Acid (PFDoA)	105		-		70-150	-		
Perfluorotridecanoic Acid (PFTrDA)	90		-		65-150	-		
Perfluorotetradecanoic Acid (PFTeDA)	109		-		65-150	-		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	100		-		70-145	-		
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	94		-		70-160	-		
Perfluorododecanesulfonic Acid (PFDoS)	81		-		25-160	-		
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	109		-		70-150	-		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	102		-		45-160	-		
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		70-155	-		
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	102		-		70-140	-		
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	117		-		70-140	-		
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	105		-		70-135	-		
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	103		-		30-140	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-3								
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	106		-		60-150	-		
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	92		-		70-140	-		
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	116		-		60-155	-		
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	98		-		45-130	-		
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	99		-		60-130	-		
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	88		-		60-150	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG2149160-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	101				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	89				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	97				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	110				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	97				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	93				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	98				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	91				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	99				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	104				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	88				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	85				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	86				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	97				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	73				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92				15-130

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

SAMPLE RESULTS

Lab ID: L2575504-01
Client ID: B-34_1.0-2.0
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 10/16/25 15:22
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.6		%	0.100	0.100	1	-	12/01/25 09:28	121,2540G	AJE

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2147906-1 QC Sample: L2575504-01 Client ID: B-34_1.0-2.0						
Solids, Total	77.6	76.5	%	1		10

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2575504-01B	Plastic 90mL Unpreserved for PFAS	NA	NA			Y	Absent		A2-TS(7),A2-NY-1633(90)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2575504
Report Date: 12/04/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	HVRA	**Lab Number:**	L2575504
Project Number:	18.8090	**Report Date:**	12/04/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L2575504
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Data Qualifiers

estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: HVRA
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REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

168 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. EPA Method 1633A, EPA 820-R-24-007, December 2024. For Massachusetts Contingency Plan, WSC-CAM-XA, September 2025.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
MA M-MA00030, CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 4

Date Rec'd in Lab: 10/18/25

L2575504 AJK 11/25/25

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Drive, Latham, NY 12110
Phone: 518-786-7400
Fax: e.white@ctmale.com
Email: m.laughlin@ctmale.com

Project Information
Project Name: HVRA
Project Location: 18 Griffith Way, Wapp. Falls, NY
Project #: 18.8090
(Use Project name as Project #): ☐
Project Manager: Eric White/Jim McIver
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO# 18.8090
Task 260

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Please also send results to m.laughlin@ctmale.com & m.williams@ctmale.com
(*) Please note samples placed on HOLD (*)

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS via EPA Method 1633	TCL VOCs + TICs	TCL SVOCs + TICs + 1,4-Dioxane	TCL Pesticides	TCL PCBs	TAL Metals	Cyanide	Total # Bottles	Sample Specific Comments
-12	B-32-1.0-2.0	10/16/25	9:20	SOIL	ML								2	HOLD
-13	B-32-6.0-7.0		9:25		ML	✓	✓	✓	✓	✓	✓	✓	8	HOLD PFAS only
-14	B-33-0.0-0.17		12:47		ML								2	
-15	B-33-0.17-1.0		12:50		ML								2	
-16	B-33-1.0-2.0		12:55		ML								2	HOLD
-17	B-34-0.0-0.17		15:16		ML								2	
-18	B-34-0.17-1.0		15:19		ML								2	
75504 -01	B-34-1.0-2.0		15:22		ML	X							2	~~HOLD~~
-19	B-35-0.0-0.17		15:26		ML								2	
-20	B-35-0.17-1.0		15:28		ML								2	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	V/P	A	A	A	A	A		
Preservative	A	F/A	A	A	A	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	10/17/25 17:40		
	10/17/25 2033	Anthony Green	OCT 17 2025 2100
Anthony Green		Alberto Liz	10-18-25 0200
Alberto Liz	10-18-25 0350		10/18/25 03:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Sample Delivery Group Summary

Pace Job Number : L2575504

Account Name : C.T. Male Associates
Project Number : 18.8090
Project Name : HVRA

Received : 17-OCT-2025
Reviewer : Andrew Kussmaul

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	2.6	
B	Absent/	Ice	2.4	
C	Absent/	Ice	3.3	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between COC & sample labels?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NA**

ANALYTICAL REPORT

Lab Number:	L2566328
Client:	C.T. Male Associates 12 Raymond Ave. 2nd Floor Poughkeepsie, NY 12603
ATTN:	Eric White
Phone:	(885) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	10/27/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NH ELAP (2249).

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2566328-01	SG-1	SOIL_VAPOR	18 GRIFFITH WAY WARP FALLS, NY	10/17/25 10:35	10/17/25
L2566328-02	FD01_251016	SOIL_VAPOR	18 GRIFFITH WAY WARP FALLS, NY	10/17/25 10:35	10/17/25
L2566328-03	SG-2	AIR	18 GRIFFITH WAY WARP FALLS, NY	10/17/25 09:55	10/17/25

Project Name:	HVRA	**Lab Number:**	L2566328
Project Number:	18.8090	**Report Date:**	10/27/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on October 16, 2025. The canister certification data is provided as an addendum.

L2566328-01D and -02D: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 10/27/25

AIR

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-01
Client ID: SG-1
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 10/26/25 20:21
Analyst: KJD

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
Dichlorodifluoromethane	0.415	0.200	--	2.05	0.989	--		1
Chloromethane	0.291	0.200	--	0.601	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	122	5.00	--	230	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	331	1.00	--	786	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	1.88	1.00	--	4.62	2.46	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	4.20	0.500	--	12.7	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.15	0.200	--	3.58	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	332	0.500	--	979	1.47	--	E	1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-01
Client ID: SG-1
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	1.68	0.200	--	5.92	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.870	0.200	--	2.78	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	0.507	0.200	--	1.75	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	2.37	0.200	--	11.1	0.934	--		1
Heptane	0.774	0.200	--	3.17	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	1.89	0.200	--	7.12	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-01
Client ID: SG-1
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	0.308	0.200	--	1.85	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.190	--	ND	0.996	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	103		60-140
Bromochloromethane	104		60-140
chlorobenzene-d5	104		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-01 D
Client ID: SG-1
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 10/27/25 07:30
Analyst: KJD

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
2-Butanone	345	5.00	--	1020	14.7	--		10

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	119		60-140
Bromochloromethane	116		60-140
chlorobenzene-d5	119		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-02
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 10/26/25 20:54
Analyst: KJD

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
Dichlorodifluoromethane	0.401	0.200	--	1.98	0.989	--		1
Chloromethane	0.382	0.200	--	0.789	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	88.3	5.00	--	166	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	292	1.00	--	694	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	1.48	1.00	--	3.64	2.46	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	3.20	0.500	--	9.70	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.00	0.200	--	3.11	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	326	0.500	--	961	1.47	--	E	1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-02
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	1.66	0.200	--	5.85	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.941	0.200	--	3.01	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	0.516	0.200	--	1.78	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	2.49	0.200	--	11.6	0.934	--		1
Heptane	1.13	0.200	--	4.63	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	4.01	0.200	--	15.1	0.754	--		1
2-Hexanone	1.21	0.200	--	4.96	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	0.299	0.200	--	2.03	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-02
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
p/m-Xylene	0.406	0.400	--	1.76	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	0.321	0.200	--	1.93	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.190	--	ND	0.996	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	103		60-140
Bromochloromethane	104		60-140
chlorobenzene-d5	105		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-02 D
Client ID: FD01_251016
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 10:35
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 10/27/25 08:08
Analyst: KJD

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
2-Butanone	390	5.00	--	1150	14.7	--		10

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	114		60-140
Bromochloromethane	112		60-140
chlorobenzene-d5	112		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-03
Client ID: SG-2
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 09:55
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 10/26/25 18:08
Analyst: KJD

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
Dichlorodifluoromethane	0.452	0.200	--	2.24	0.989	--		1
Chloromethane	0.489	0.200	--	1.01	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	2.75	1.00	--	6.53	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	2.85	1.00	--	7.01	2.46	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-03
Client ID: SG-2
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 09:55
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.552	0.200	--	1.95	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

SAMPLE RESULTS

Lab ID: L2566328-03
Client ID: SG-2
Sample Location: 18 GRIFFITH WAY WARP FALLS, NY

Date Collected: 10/17/25 09:55
Date Received: 10/17/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.190	--	ND	0.996	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	99		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 10/26/25 16:12

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab for sample(s): 01-03 Batch: WG2132949-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	1.00	--	ND	2.46	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 10/26/25 16:12

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab for sample(s): 01-03 Batch: WG2132949-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2566328
Report Date: 10/27/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 10/26/25 16:12

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab for sample(s): 01-03 Batch: WG2132949-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.190	--	ND	0.996	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Air Lab Associated sample(s): 01-03 Batch: WG2132949-3								
Dichlorodifluoromethane	97		-		70-130	-		
Chloromethane	91		-		70-130	-		
Freon-114	99		-		70-130	-		
Vinyl chloride	97		-		70-130	-		
1,3-Butadiene	104		-		70-130	-		
Bromomethane	96		-		70-130	-		
Chloroethane	90		-		70-130	-		
Ethanol	95		-		40-160	-		
Vinyl bromide	96		-		70-130	-		
Acetone	98		-		40-160	-		
Trichlorofluoromethane	90		-		70-130	-		
Isopropanol	90		-		40-160	-		
1,1-Dichloroethene	95		-		70-130	-		
Tertiary butyl Alcohol	79		-		70-130	-		
Methylene chloride	93		-		70-130	-		
3-Chloropropene	100		-		70-130	-		
Carbon disulfide	102		-		70-130	-		
Freon-113	89		-		70-130	-		
trans-1,2-Dichloroethene	98		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Air Lab Associated sample(s): 01-03 Batch: WG2132949-3								
1,1-Dichloroethane	92		-		70-130	-		
Methyl tert butyl ether	96		-		70-130	-		
2-Butanone	120		-		70-130	-		
cis-1,2-Dichloroethene	102		-		70-130	-		
Ethyl Acetate	88		-		70-130	-		
Chloroform	95		-		70-130	-		
Tetrahydrofuran	118		-		70-130	-		
1,2-Dichloroethane	91		-		70-130	-		
n-Hexane	117		-		70-130	-		
1,1,1-Trichloroethane	94		-		70-130	-		
Benzene	105		-		70-130	-		
Carbon tetrachloride	105		-		70-130	-		
Cyclohexane	121		-		70-130	-		
1,2-Dichloropropane	109		-		70-130	-		
Bromodichloromethane	119		-		70-130	-		
1,4-Dioxane	108		-		70-130	-		
Trichloroethene	103		-		70-130	-		
2,2,4-Trimethylpentane	125		-		70-130	-		
Heptane	124		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Air Lab Associated sample(s): 01-03 Batch: WG2132949-3								
cis-1,3-Dichloropropene	116		-		70-130	-		
4-Methyl-2-pentanone	127		-		70-130	-		
trans-1,3-Dichloropropene	127		-		70-130	-		
1,1,2-Trichloroethane	106		-		70-130	-		
Toluene	103		-		70-130	-		
2-Hexanone	116		-		70-130	-		
Dibromochloromethane	118		-		70-130	-		
1,2-Dibromoethane	104		-		70-130	-		
Tetrachloroethene	96		-		70-130	-		
Chlorobenzene	98		-		70-130	-		
Ethylbenzene	103		-		70-130	-		
p/m-Xylene	104		-		70-130	-		
Bromoform	116		-		70-130	-		
Styrene	104		-		70-130	-		
1,1,2,2-Tetrachloroethane	104		-		70-130	-		
o-Xylene	103		-		70-130	-		
4-Ethyltoluene	112		-		70-130	-		
1,3,5-Trimethylbenzene	108		-		70-130	-		
1,2,4-Trimethylbenzene	107		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Air Lab	Associated sample(s): 01-03		Batch: WG2132949-3					
Benzyl chloride	81		-		70-130	-		
1,3-Dichlorobenzene	100		-		70-130	-		
1,4-Dichlorobenzene	98		-		70-130	-		
1,2-Dichlorobenzene	99		-		70-130	-		
1,2,4-Trichlorobenzene	94		-		70-130	-		
Naphthalene	91		-		70-130	-		
Hexachlorobutadiene	92		-		70-130	-		

Project Name: HVRA

Project Number: 18.8090

Lab Number: L2566328

Report Date: 10/27/25

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt	Flow Controler Leak Chk	Flow Out mL/min	Flow In	% RPD
L2566328-01	SG-1	02755	Flow 5	10/16/25	540078		-	-	-	Pass	3.1	3.2	3
L2566328-01	SG-1	2985	6.0L Can	10/16/25	540078	L2564599-03	Pass	-29.2	-9.3	-	-	-	-
L2566328-02	FD01_251016	02789	Flow 5	10/16/25	540078		-	-	-	Pass	3.3	3.4	3
L2566328-02	FD01_251016	609	6.0L Can	10/16/25	540078	L2564599-03	Pass	-29.2	-7.9	-	-	-	-
L2566328-03	SG-2	0676	Flow 5	10/16/25	540078		-	-	-	Pass	3.0	3.0	0
L2566328-03	SG-2	3465	6.0L Can	10/16/25	540078	L2564599-03	Pass	-29.0	-6.2	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 10/13/25 22:33
Analyst: KMH

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Air Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	1.00	--	ND	2.46	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	0.996	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Air Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	76		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 10/13/25 22:33
Analyst: KMH

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Air Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Air Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.100	--	ND	0.377	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.100	--	ND	0.518	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2564599
Report Date: 10/27/25

Air Canister Certification Results

Lab ID: L2564599-03
Client ID: CAN 4994 SHELF 76
Sample Location:

Date Collected: 10/10/25 15:00
Date Received: 10/13/25
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Air Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	106		60-140
chlorobenzene-d5	89		60-140

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2566328-01A	Canister - 6L (Batch Certified)	NA	NA			Y	Absent		TO15-LL(30)
L2566328-02A	Canister - 6L (Batch Certified)	NA	NA			Y	Absent		TO15-LL(30)
L2566328-03A	Canister - 6L (Batch Certified)	NA	NA			Y	Absent		TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L2566328
Project Number:	18.8090	**Report Date:**	10/27/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	HVRA	**Lab Number:**	L2566328
Project Number:	18.8090	**Report Date:**	10/27/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report

Project Name:	HVRA	**Lab Number:**	L2566328
Project Number:	18.8090	**Report Date:**	10/27/25

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2566328
Report Date: 10/27/25

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
MA M-MA00030, CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

AIR ANALYSIS

Pace ANALYTICAL SERVICES — CHAIN OF CUSTODY

PAGE 1 OF 1

120 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 10/18/25

Pace® Job #: L2566328

Client Information

Client: C.T. Male Associates
Address: 50 century Hill Drive
Latham, NY 12110
Phone: 518-786-7400
Fax: e.white@ctmale.com
Email: j.mciver@ctmale.com
☐ These samples have been previously analyzed by Pace

Project Information

Project Name: HVRA
Project Location: 18 Griffith Way Wapp Falls, NY
Project #: 18.8090
Project Manager: Eric White/Jim McIver
Pace® Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☒ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager) Eric White, Jim McIver
m.williams@ctmale.com
m.laughlin@ctmale.com

Billing Information

☒ Same as Client info PO #: 18.8090
Task 250

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

All Columns Below Must Be Filled Out

PACE Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	ANALYSIS TO-15	TO-15 SIM	APH Subtract Non-petroleum HCs ☐	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
66328-01	SG-1	10/17/25	10:13	10:35	-30.11	-9.89	SV	ML	6L	2985	02755	✓					
-02	FD01-251016	↓	10:13	10:35	-30.83	-8.61	SV	ML	6L	609	02781	✓					
-03	SG-2	↓	10:15	9:55	-30.10	-6.80	AA Outdoor	ML	6L	3465	0676	✓✓					

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type: Summa

Relinquished By:	Date/Time	Received By:	Date/Time:
	10/17/25 17:40		10/17/25 17:42
Anthony Green	10/17/25 20:10	Anthony Green	OCT 17 2025 2000
Alberto Liz	10-18-25 0530	Alberto Liz	10-18-25 0200
			10/18/25 0350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambi-guites are resolved. All samples submitted are subject to Pace's Terms and Conditions. See reverse side.

Sample Delivery Group Summary

Pace Job Number : L2566328

Account Name : C.T. Male Associates
Project Number : 18.8090
Project Name : HVRA

Received : 17-OCT-2025
Reviewer : Christopher J Anderson

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
NA	Present/Intact/NA			

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between COC & sample labels?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**YES**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NA**

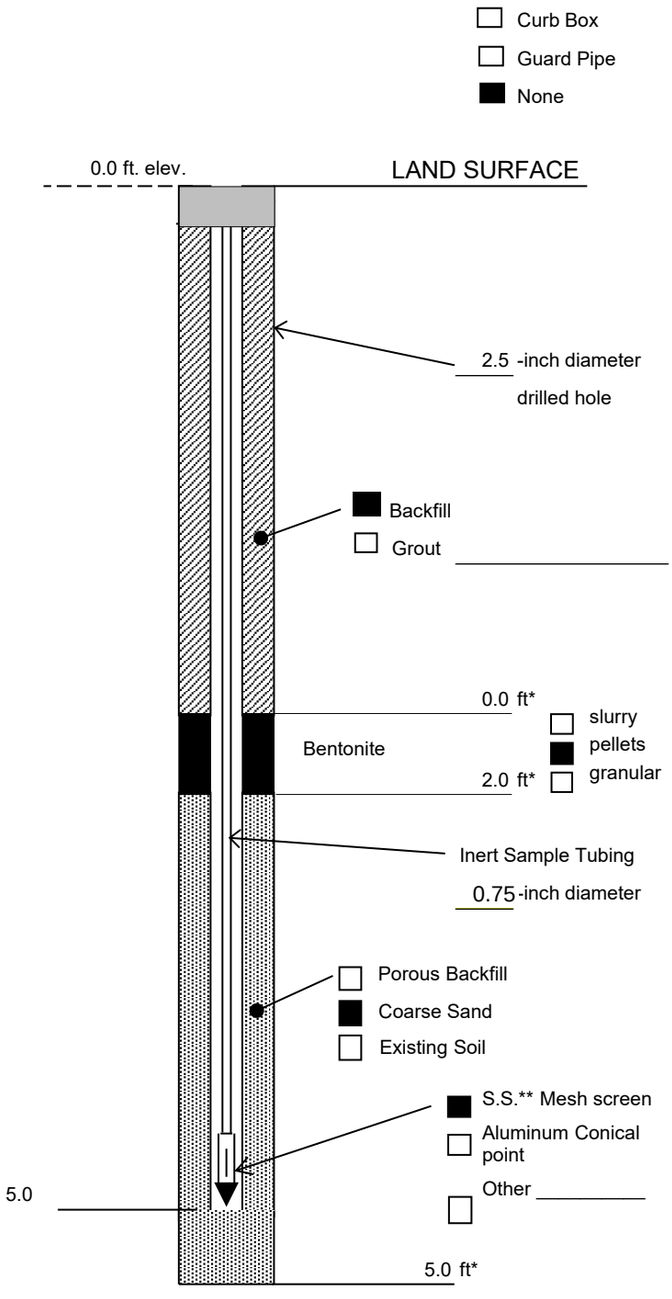
APPENDIX D

SOIL GAS POINT CONSTRUCTION LOGS

C.T. MALE ASSOCIATES

Point No. **SG-1**

SOIL GAS SAMPLING POINT CONSTRUCTION LOG



* Depth below land surface

** S.S. denotes Stainless Steel

Project Name: Hudson Valley Regional Airport Site
Maintenance & Storage Buildings

Project Number: 18.8090 - 250

Point No.: SG-1 Boring No.: SG-1

Town/City: Wappinger

County: Dutchess State: NY

Installation Date(s): 10/16/2025

Drilling Contractor: Core Down Drilling

Drilling Method: Direct Push

C.T. Male Observer: M. Loughlin

Materials Used:

1/4 Bags of Sand (50 lb. bags)
Sand Size: #2 Brand: Filpro
1/8 Bags of Bentonite (50 lb. bags)
Brand: Benseal
6 inch S.S. vapor point/screen
8 ft. of Nylaflow sample tubing
0 Bags of Cement/Concrete (- lb. bags)
Brand: -
0 Gallons of Grout

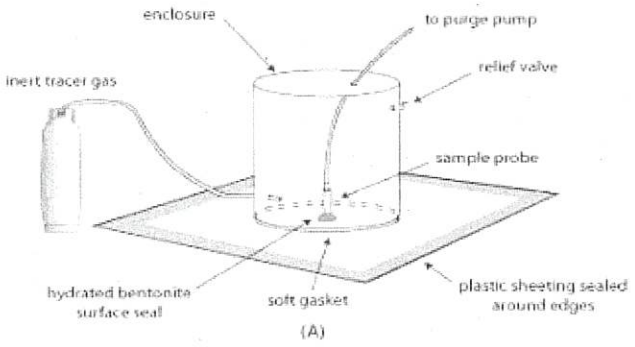
Notes:

C.T. MALE ASSOCIATES

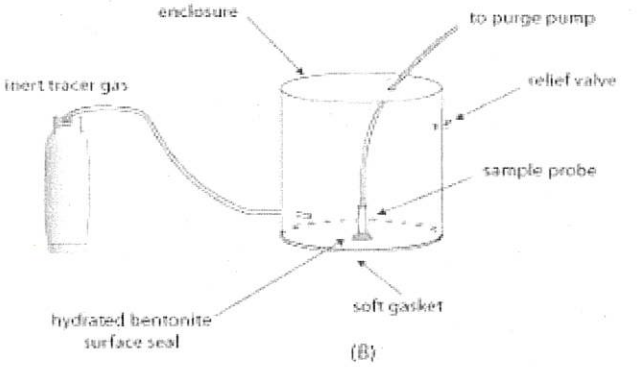
SOIL GAS POINT / AIR SAMPLE LOG

Tracer Gas Application Method*:

(A)



(B)



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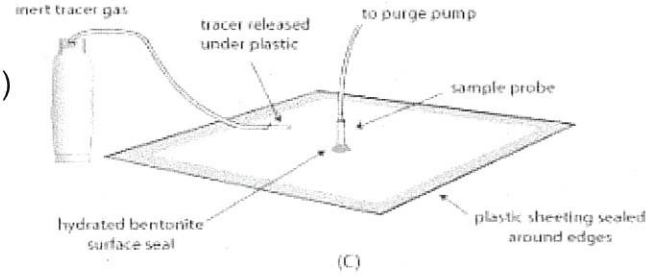


(D)

Project Name: HVRA
Location: 38 Citation Drive
Project No.: 18-8090 Task 250

Sample Point ID: SG-1 Date: 10/16/25

Sampling Personnel: M. Loughlin
Notes Taken By: M. Loughlin

SV Point Activity: [X] Leak Test [X] Sample Collection

Circle one of the tracer gas application method used
(A) B C D NA

Tracer Gas and Seal Information:

Tracer Gas Used: He Supplier: Eco Rental
Material Used for Seal Construction: HL Moist Potters Clay
Instrument to Measure Tracer: MGD 2002 He detector
Ambient Tracer Concentration: 0.0 ppm
Initial Tracer Concentration Applied to Enclosure: 13.10 %
Volume of Water Purged from SV Point: None
Purge Method (Vapor): 1) PID Duration: 3 min
2) MGD 2002
Sample Tubing Tracer Concentration: 0.0 ppm
Final Enclosure Tracer Concentration:

Sample Information

Sample Type: [X] Soil Vapor [ ] Ambient/Outdoor Air
[ ] Sub-Slab [ ] Indoor Air

Sample Collection: [ ] Grab [X] Regulator Flow 24 hr 3.1 mL/min
Container Type: Summa Size: 6L
Container ID: 2985 Regulator ID: 02755

Start Time and Date: 10/16 12:13 Initial Pressure: -30.11
Stop Time and Date: 10/17 10:35 Final Pressure: -9.89

Notes:

FD01 - 251016 collected as duplicate from this location

Initial Hg: -30.83
Start: 12:13
Final Hg: -8.61
Stop: 10:35

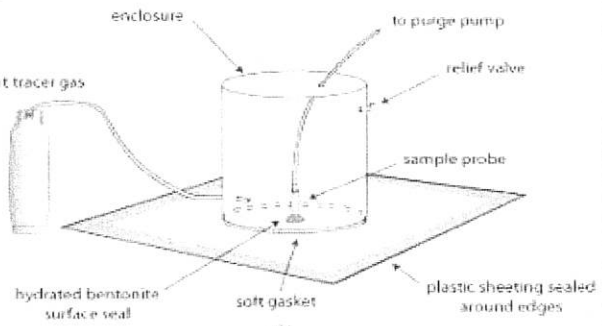
Can ID: 609
Reg ID: 02789
Flow: 3.3mL/min

C.T. MALE ASSOCIATES

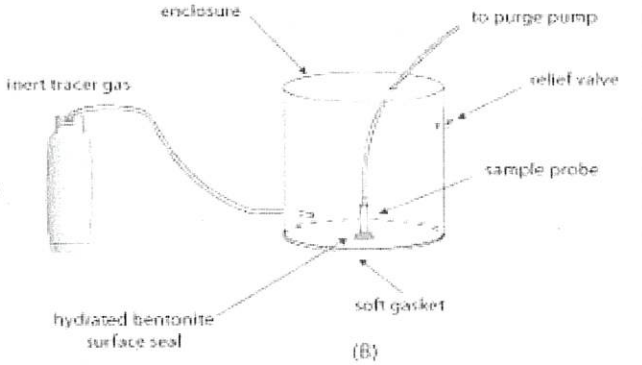
AIR SAMPLE LOG

Tracer Gas Application Method*:

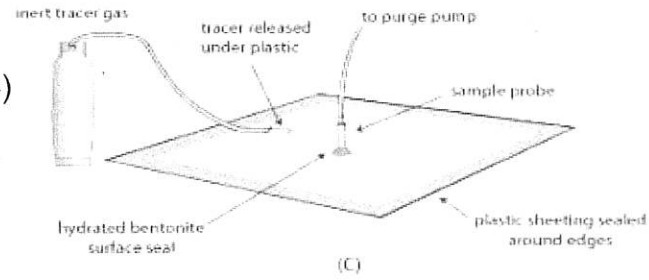
(A)



(B)



(C)



(D)

Project Name: HVRA
Location: 38 Citation Drive (MBS)
Project No.: 18.8090 Task 250

Sample Point ID: SG-2 Date: 10/16/25

Sampling Personnel: M
Notes Taken By: _____

SV Point Activity: ☐ Leak Test ☒ Sample Collection

Circle one of the tracer gas application method used
A B C D (NA)

Tracer Gas and Seal Information: N/A - Ambient OA

Tracer Gas Used: — Supplier: —
Material Used for Seal Construction: —
Instrument to Measure Tracer: —
Ambient Tracer Concentration: —
Initial Tracer Concentration Applied to Enclosure: —
Volume of Water Purged from SV Point: —
Purge Method (Vapor): 1) — Duration: —
2) — —
Sample Tubing Tracer Concentration: —
Final Enclosure Tracer Concentration: —

Sample Information

Sample Type: ☐ Soil Vapor ☒ Ambient/Outdoor Air
☐ Sub-Slab ☐ Indoor Air

Sample Collection: ☐ Grab ☒ Regulator Flow 24 hr 3.0 ml/min
Container Type: Summa Size: 6L
Container ID: 3465 Regulator ID: 06716

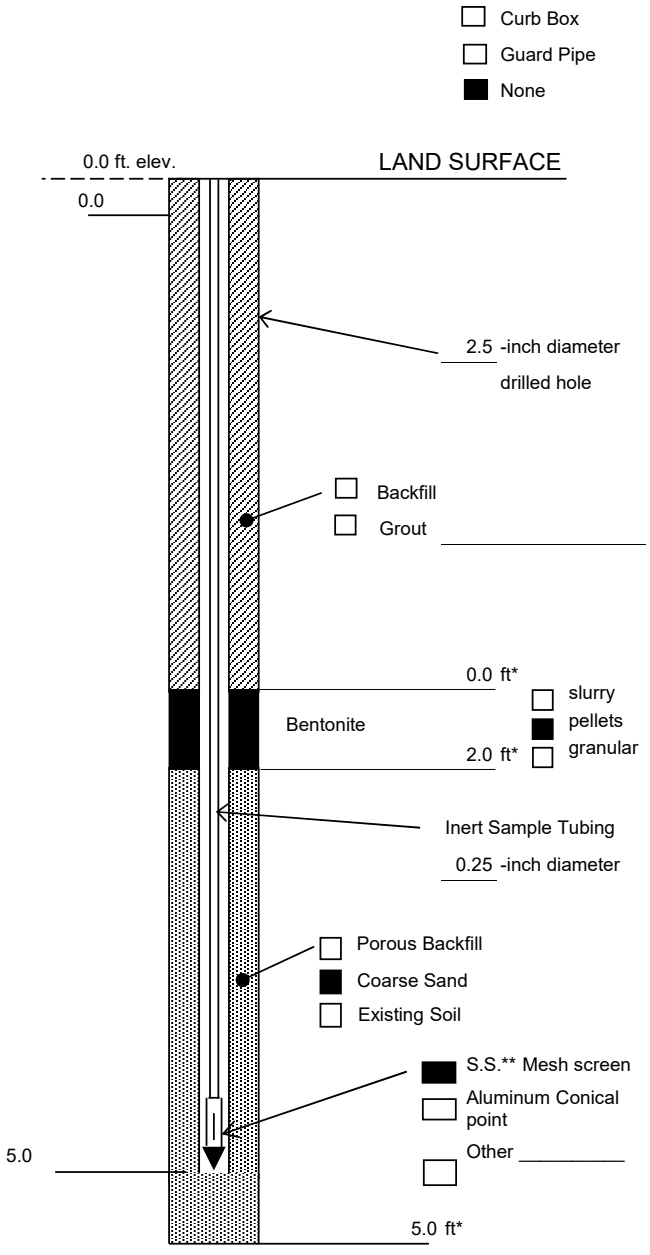
Start Time and Date: 10/16 12:15 Initial Pressure: -30.10 "Hg
Stop Time and Date: 10/17 9:55 Final Pressure: -6.80 "Hg

Notes:
co-located with SG-1
placed on top of 55-gallon drum
~3' above ground surface

Point No. **SG-1**

SOIL GAS (SG) SAMPLING POINT CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below land surface

** S.S. denotes Stainless Steel

Project Name: Hudson Valley Regional Airport Site
Maintenance & Storage Buildings

Project Number: 18.8090 - 250

Point No.: SG-1 Boring No.: SG-1

Town/City: Wappinger

County: Dutchess State: NY

Installation Date(s): 10/16/2025

Drilling Contractor: Core Down Drilling

Drilling Method: Direct Push

C.T. Male Observer: M. Loughlin

Materials Used:

1/4	Bags of Sand	(50	lb. bags)	
	Sand Size: #2	Brand: Filpro		
1/8	Bags of Bentonite	(50	lb. bags)	
	Brand: Benseal			
6	inch S.S.		vapor point/screen	
8	ft. of Nylaflow		sample tubing	
0	Bags of Cement/Concrete	(-	lb. bags)	
	Brand: -			
0	Gallons of Grout			

Notes:

APPENDIX E

DATA USABILITY SUMMARY REPORTS

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
HV REGIONAL AIRPORT, POUGHKEEPSIE, NEW YORK

Client: C.T. Male Associates, Latham, New York
SDG: L2566083
Laboratory: Pace Analytical Services, Westborough, Massachusetts
Site: HV Regional Airport, Poughkeepsie, New York
Date: December 4, 2025

VOC, SVOC, Pesticides, PCB, Metals, Mercury, Cyanide			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
4	B-30_9.0-10.0	L2566083-04	Soil
4MS†	B 30_9.0 10.0MS	L2566083-04MS	Soil
4MSD†	B-30_9.0-10.0MSD	L2566083-04MSD	Soil
12	B-32_6.0-7.0	L2566083-12	Soil
12MS^	B 32_6.0 7.0MS	L2566083-12MS	Soil
12MSD^	B-32_6.0-7.0MSD	L2566083-12MSD	Soil
34+	FD01_251016	L2566083-34	Soil
39*	TRIP BLANK	L2566083-39	Water

* - VOC only + - Excludes SVOC ^ - Cyanide only † - Excludes Pesticides & PCBs

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	B-30_0.0-0.17	L2566083-01	Soil
2	B-30_0.17-1.0	L2566083-02	Soil
5	B-31_0.0-0.17	L2566083-05	Soil
6	B 31_0.17 1.0	L2566083-06	Soil
9	B-32_0.0-0.17	L2566083-09	Soil
10	B-32_0.17-1.0	L2566083-10	Soil
22	B-36_0.0-0.17	L2566083-22	Soil
23	B 36_0.17 1.0	L2566083 23	Soil
25	B 37_0.0 0.17	L2566083 25	Soil
26	B-37_0.17-1.0	L2566083-26	Soil
28	B-38_0.0-0.17	L2566083-28	Soil
29	B-38_0.17-1.0	L2566083 29	Soil
31	B 39_0.0 0.17	L2566083 31	Soil
32	B-39_0.17-1.0	L2566083-32	Soil
32MS	B-39_0.17-1.0MS	L2566083-32MS	Soil
32MSD	B-39_0.17-1.0MSD	L2566083-32MSD	Soil
34	FD01_251016	L2566083-34	Soil
36	M&S_EB01_251016	L2566083-36	Water

A Data Usability Summary Review was performed on the analytical data for fifteen soil samples, one aqueous equipment blank sample, and one aqueous trip blank sample collected on October 13-16, 2025 by CT Male at the HV Regional Airport site in Poughkeepsie, New York. The samples were

analyzed under Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis	*Method References*
VOC	USEPA SW-846 Method 8260D
SVOC	USEPA SW-846 Method 8270E
Pesticides	USEPA SW-846 Method 8081B
PCBs	USEPA SW-846 Method 8082A
PFAS	USEPA Method 1633A
Metals/Mercury	USEPA SW-846 Method 6010D/7471B
Cyanide	USEPA SW-846 Method 9010C/9014

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number QA-HWSS-A-004, March 2022, Standard Operating Procedure for Validation of Volatile Data;
- SOP Number QA-HWSS-A-005, March 2022, Standard Operating Procedure for Validation of Semivolatile Data;
- SOP Number QA-HWSS-A-007, April 2022, Standard Operating Procedure for the Validation of Pesticides Data;
- SOP Number QA-HWSS-A-006, April 2022, Standard Operating Procedure for the Validation of PCB Data;
- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFAS) Analyzed Using EPA Method 537, November 2018;
- SOP Number QA-HWSS-A-010, March 2022, Standard Operating Procedure for ICP-AES Data Validation;
- SOP Number QA-HWSS-A-011, March 2022, Standard Operating Procedure for Validation of Mercury Data;
- SOP Number QA-HWSS-A-012, March 2022, Standard Operating Procedure for Validation of Cyanide Data;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample (LCS) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation

- Internal standard area and retention time summary forms
- Tentatively Identified Compounds (TICs)
- Field Duplicate sample precision

Inorganics

- Data Completeness
- Holding times and sample preservation
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Duplicate Sample Analysis recoveries
- Laboratory Control Sample (LCS) recoveries
- Method blank and field blank contamination
- Initial and continuing calibration verifications
- Compound Quantitation
- ICP Serial Dilution
- Field Duplicate sample precision

Data Usability Assessment

There were minor rejections of data. This data cannot be used in the decision-making process for this project.

- Selenium was rejected (R) in EDS sample 34 due to severely low MS recoveries.

The remaining data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contamination and actions from other exceedances of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (VOCs)

Holding Times

- All samples were analyzed within 14 days for preserved water and soil samples.

Surrogate Spike Recoveries

- The following table presents surrogate percent recoveries (%R) outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J).

Sample ID	Surrogate	%R	Qualifier
4	1,2-Dichloroethane-d4	137%	J - Positive Results
	Dibromofluoromethane	139%	

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The following table presents MS/MSD samples that exhibited percent recoveries (%R) outside the QC limits and/or relative percent differences (RPD) above QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

Sample ID	Compound	MS %R/MSD/%R/RPD	Qualifier
4	Carbon Tetrachloride	132%/138%/OK	None - Sample ND
	Tetrachloroethene	OK/140%/OK	
	Naphthalene	68%/66%/OK	UJ
	1,2,4-Trichlorobenzene	58%/62%/OK	
	Cyclohexane	OK/147%/OK	None - Sample ND

Laboratory Control Samples

- The following table presents LCS percent recoveries (%R) outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

Sample ID	Compound	%R	Qualifier	Affected Samples
WG2134850-3	Trichlorofluoromethane	153%	None	All Associated ND
WG2134890-3	Tetrachloroethene	132%	None	All Associated ND

Method Blank

- The following table lists method blanks with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations of methylene chloride, 2-butanone, toluene or acetone (common laboratory contaminants) less than ten times (10x) the highest associated blank (after taking

sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U). For all other compounds, an action level of five times (5x) the highest associated blank concentration is used.

Blank ID	Compound	Conc. ug/kg	Qualifier	Affected Samples
WG2134850-5	Chloroform	0.37	None	All Associated ND
WG2134890-5	Chloroform	0.81	U	4
WG2135210-5	Chloroform	0.77	U	34

Field Blank

- Field QC samples are summarized below.

Sample ID	Compound	Conc. ug/L	Qualifier	Affected Samples
TRIP BLANK	None - ND	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and/or correlation coefficients and mean RRF values.

Continuing Calibration

- The following table presents compounds that exceeded percent difference (%D) criteria and/or RRF values <0.05 in the continuing calibration (CCAL). A low RRF indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %D may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

CCAL Date	Compound	%D	Qualifier	Affected Samples
10/27/25 (0738)	Bromoform	26.6%	UJ	39
10/29/25 (0724)	Bromomethane	33.9%	UJ	4
	Chloroethane	26.6%	UJ	
	Carbon Tetrachloride	26.5%	UJ	
	Tetrachloroethene	32.0%	UJ	
10/29/25 (0732)	Trichlorofluoromethane	52.3%	UJ	12

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Tentatively Identified Compounds (TICs)

- TICs were qualified estimated (J) for unknown compounds and (NJ) for tentatively identified compounds.

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was acceptable.

Compound	B-30_9.0-10.0 ug/kg	FD01_251016 ug/kg	RPD	Qualifier
Acetone	6.2	ND	NC	None

Semivolatile Organic Compounds (SVOC)

Holding Times

- All samples were extracted within 14 days for soil samples and analyzed within 40 days for all samples.

Surrogate Spike Recoveries

- The samples exhibited acceptable surrogate percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field blank samples were not analyzed.

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and/or correlation coefficients and mean RRF values.

Continuing Calibration

- The following table presents compounds that exceeded percent difference (%D) criteria and/or RRF values <0.05 in the continuing calibration (CCAL). A low RRF indicates poor instrument sensitivity for these compounds. Positive results for these compounds in the affected samples are considered estimated and qualified (J). Non-detect results for these compounds in the affected samples are rejected (R) and are unusable for project objectives. A high %D may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
10/20/25 (1044)	bis(2-Chloroisopropyl)ether	43.7%	UJ	12
	2-Nitrophenol	39.2%	UJ	
	4,6-Dinitro-o-cresol	40.0%	UJ	
10/20/25 (1136)	Atrazine	31.1%	UJ	12
10/20/25 (2350)	bis(2-Chloroisopropyl)ether	43.4%	UJ	4
	2-Nitrophenol	36.1%	UJ	
	4,6-Dinitro-o-cresol	35.4%	UJ	
10/21/25 (0011)	Caprolactam	31.0%	UJ	4

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Tentatively Identified Compounds (TICs)

- TICs were qualified estimated (J) for unknown compounds.

Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Pesticides/Polychlorinated Biphenyls (PCBs)

Holding Times

- All holding time criteria were met.

Surrogate Spike Recoveries

- The samples exhibited acceptable surrogate percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field blank samples were not analyzed.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF criteria.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was acceptable.

Pesticides				
Compound	B-30_9.0-10.0 ug/kg	FD01_251016 ug/kg	RPD	Qualifier
None	ND	ND	-	-

PCBs				
Compound	B-30_9.0-10.0 ug/kg	FD01_251016 ug/kg	RPD	Qualifier
None	ND	ND	-	-

GC Column Difference Results

- All criteria were met.

Perfluorinated Alkyl Substances (PFAS)

Holding Times

- All samples were analyzed outside the 3-day holding time for NFDHA. The results for this compound were qualified (UJ). All other holding time criteria were met.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients and mean RRF criteria were met.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF criteria.

Method Blank

- The following table lists method blanks with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations less than five times (5x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U).

Blank ID	Compound	Conc. ng/g	Qualifier	Affected Samples
WG2130808-1	PFHxS	0.036	U	1, 2, 5, 6, 9, 10
	PFOS	0.046	U	1, 2, 6, 10
WG2131351-1	PFHxS	0.034	U	22, 23, 25, 26, 28, 31, 32
	PFOS	0.058	U	22, 23, 25, 26, 28, 29, 32

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WG2130878-1	PFOS	0.304	U	36

Field Blank

- The field blanks are summarized below.

Sample ID	Compound	Conc. ng/L	Qualifier	Affected Samples
M&S_EB01_251016	None - ND	-	-	-

Surrogate Spike Recoveries

- The samples exhibited acceptable surrogate percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples were flagged (F) indicating ion ratio deficiencies. These results were qualified estimated (J).

Field Duplicate Sample Precision

- Field duplicate samples were not analyzed.

Metals & Mercury

Holding Times

- All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The following table presents MS/MSD samples that exhibited percent recoveries (%R) outside the QC limits and/or relative percent differences (RPD) above QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

Sample ID	Compound	MS %R/MSD %R/RPD	Qualifier	Affected samples
4	Antimony	42%/43%/OK	UJ	4, 12
	Copper	74%/OK/OK	J	
	Zinc	61%/OK/OK	J	
	5 Compounds	Low %R	None	4X Rule Applies

Sample ID	Compound	MS %R	Qualifier	Affected samples
Reference	Antimony	23%	UJ	34
	Arsenic	0%	J	
	Cadmium	162%	None	All Associated ND
	Nickel	126%	J	34
	Selenium	0%	R	
	Sodium	41%	UJ	
	Vanadium	60%	J	
	11 Metals	0%	None	4X Rule Applies

Duplicate Sample Analysis

- The following table presents duplicate samples that exhibited relative percent differences (RPD) above QC limits. For a high RPD, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

Sample ID	Compound	RPD	Qualifier	Affected samples
Reference	Aluminum	72%	J	34
	Arsenic	40%	None	See MS
	Barium	84%	J	34
	Calcium	91%	J	
	Chromium	48%	J	
	Copper	23%	J	
	Iron	45%	J	
	Magnesium	72%	J	
	Manganese	66%	J	

Sample ID	Compound	RPD	Qualifier	Affected samples
Reference	Potassium	85%	J	34
	Vanadium	32%	None	See MS
	Mercury	71%	UJ	34

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Method Blank

- The following table lists method blanks with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations less than ten times (10x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U).

Blank ID	Compound	Conc. mg/kg	Qualifier	Affected Samples
WG2131334-1	Iron	0.855	None	All Associated >10X
WG2137117-1	Iron	1.45	None	All Associated >10X

Field Blank

- Field QC samples were not analyzed.

Initial Calibration Verification

- All initial calibration criteria were met.

Continuing Calibration Verification

- All continuing calibration criteria were met.

Compound Quantitation

- Sample 12 was analyzed for iron at a 5X dilution due to a high concentration. The reporting limits were adjusted accordingly. No action was required.

ICP Serial Dilution

- The ICP serial dilutions exhibited acceptable percent differences (%D).

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was unacceptable for calcium in the field duplicate pair. These results were qualified estimated (J) unless already qualified.

Compound	B-30_9.0-10.0 mg/kg	FD01_251016 mg/kg	RPD	Qualifier
Aluminum	11000	11200	2%	None
Arsenic	5.35	5.87	9%	
Barium	35.6	38.9	9%	
Beryllium	0.432	0.457	6%	
Cadmium	0.119	ND	NC	
Calcium	10300	21000	68%	J - Sample 4 only
Chromium	12.3	12.5	2%	None
Cobalt	8.64	9.08	5%	
Copper	26.4	22.2	17%	
Iron	21900	23000	5%	
Lead	14.6	15.3	5%	
Magnesium	9490	15200	46%	
Manganese	830	1000	19%	
Nickel	18.8	18.8	0%	
Potassium	545	514	6%	
Vanadium	12.4	12.2	2%	
Zinc	55.7	51.2	8%	

Cyanide

Holding Times

- All samples were prepared and analyzed within holding times for each method.

Initial Calibration Verification

- All initial calibration criteria were met.

Continuing Calibration Verification

- All continuing calibration criteria were met.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC samples were not analyzed.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Duplicate Sample Analysis

- A duplicate sample was not analyzed.

Laboratory Control Samples

- The following table presents LCS percent recoveries (%R) outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

LCS ID	Compound	%R	Qualifier	Affected Samples
WG2131948-2	Cyanide	71%	UJ	4

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples are summarized below. The precision was acceptable.

Compound	B-30_9.0-10.0 mg/kg	FD01_251016 mg/kg	RPD	Qualifier
None	ND	ND	-	-

Please contact the undersigned at (561) 475-2000 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 12/8/25

Nancy Weaver
Senior Chemist

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limits is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

4

Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 18:19
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V10251029A25	Instrument ID	: VOA110
Sample Amount	: 4.6 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	5.7	2.6	U
75-34-3	1,1-Dichloroethane	ND	1.1	0.16	U
67-66-3	Chloroform	0.25	1.7	0.16	J U
56-23-5	Carbon tetrachloride	ND	1.1	0.26	UJ U
78-87-5	1,2-Dichloropropane	ND	1.1	0.14	U
124-48-1	Dibromochloromethane	ND	1.1	0.16	U
79-00-5	1,1,2-Trichloroethane	ND	1.1	0.30	U
127-18-4	Tetrachloroethene	ND	0.57	0.22	UJ U
108-90-7	Chlorobenzene	ND	0.57	0.14	U
75-69-4	Trichlorofluoromethane	ND	4.6	0.79	U
107-06-2	1,2-Dichloroethane	ND	1.1	0.29	U
71-55-6	1,1,1-Trichloroethane	ND	0.57	0.19	U
75-27-4	Bromodichloromethane	ND	0.57	0.12	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.1	0.31	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.57	0.18	U
75-25-2	Bromoform	ND	4.6	0.28	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.57	0.19	U
71-43-2	Benzene	ND	0.57	0.19	U
108-88-3	Toluene	ND	1.1	0.62	U
100-41-4	Ethylbenzene	ND	1.1	0.16	U
74-87-3	Chloromethane	ND	4.6	1.1	U
74-83-9	Bromomethane	ND	2.3	0.66	UJ U
75-01-4	Vinyl chloride	ND	1.1	0.38	U
75-00-3	Chloroethane	ND	2.3	0.52	UJ U

MT 12/4/25

4

Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 18:19
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V10251029A25	Instrument ID	: VOA110
Sample Amount	: 4.6 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-35-4	1,1-Dichloroethene	ND	1.1	0.27	U
156-60-5	trans-1,2-Dichloroethene	ND	1.7	0.16	U
79-01-6	Trichloroethene	ND	0.57	0.16	U
95-50-1	1,2-Dichlorobenzene	ND	2.3	0.16	U
541-73-1	1,3-Dichlorobenzene	ND	2.3	0.17	U
106-46-7	1,4-Dichlorobenzene	ND	2.3	0.20	U
1634-04-4	Methyl tert butyl ether	ND	2.3	0.23	U
179601-23-1	p/m-Xylene	ND	2.3	0.64	U
95-47-6	o-Xylene	ND	1.1	0.33	U
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.20	U
100-42-5	Styrene	ND	1.1	0.22	U
75-71-8	Dichlorodifluoromethane	ND	11	1.0	U
67-64-1	Acetone	6.2	11	5.5	J
75-15-0	Carbon disulfide	ND	11	5.2	U
78-93-3	2-Butanone	ND	11	2.5	U
108-10-1	4-Methyl-2-pentanone	ND	11	1.5	U
591-78-6	2-Hexanone	ND	11	1.3	U
106-93-4	1,2-Dibromoethane	ND	1.1	0.32	U
104-51-8	n-Butylbenzene	ND	1.1	0.19	U
135-98-8	sec-Butylbenzene	ND	1.1	0.17	U
98-06-6	tert-Butylbenzene	ND	2.3	0.13	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.4	1.1	U
98-82-8	Isopropylbenzene	ND	1.1	0.12	U
99-87-6	p-Isopropyltoluene	ND	1.1	0.12	U

MT 12/4/25

4

Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 18:19
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V10251029A25	Instrument ID	: VOA110
Sample Amount	: 4.6 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
91-20-3	Naphthalene	ND	4.6	0.74	U VS
103-65-1	n-Propylbenzene	ND	1.1	0.20	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.3	0.31	U VS
108-67-8	1,3,5-Trimethylbenzene	ND	2.3	0.22	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.3	0.38	U
79-20-9	Methyl Acetate	ND	4.6	1.1	U
110-82-7	Cyclohexane	ND	11	0.62	U
76-13-1	Freon-113	ND	4.6	0.79	U
108-87-2	Methyl cyclohexane	ND	4.6	0.69	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 17:59
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V00251029A24	Instrument ID	: VOA100
Sample Amount	: 4.4 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	5.9	2.7	U
75-34-3	1,1-Dichloroethane	ND	1.2	0.17	U
67-66-3	Chloroform	ND	1.8	0.16	U
56-23-5	Carbon tetrachloride	ND	1.2	0.27	U
78-87-5	1,2-Dichloropropane	ND	1.2	0.15	U
124-48-1	Dibromochloromethane	ND	1.2	0.16	U
79-00-5	1,1,2-Trichloroethane	ND	1.2	0.31	U
127-18-4	Tetrachloroethene	ND	0.59	0.23	U
108-90-7	Chlorobenzene	ND	0.59	0.15	U
75-69-4	Trichlorofluoromethane	ND	4.7	0.82	✓ U5
107-06-2	1,2-Dichloroethane	ND	1.2	0.30	U
71-55-6	1,1,1-Trichloroethane	ND	0.59	0.20	U
75-27-4	Bromodichloromethane	ND	0.59	0.13	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.2	0.32	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.59	0.18	U
75-25-2	Bromoform	ND	4.7	0.29	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.59	0.19	U
71-43-2	Benzene	ND	0.59	0.19	U
108-88-3	Toluene	ND	1.2	0.64	U
100-41-4	Ethylbenzene	ND	1.2	0.16	U
74-87-3	Chloromethane	ND	4.7	1.1	U
74-83-9	Bromomethane	ND	2.3	0.68	U
75-01-4	Vinyl chloride	ND	1.2	0.39	U
75-00-3	Chloroethane	ND	2.3	0.53	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 17:59
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V00251029A24	Instrument ID	: VOA100
Sample Amount	: 4.4 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-35-4	1,1-Dichloroethene	ND	1.2	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.8	0.16	U
79-01-6	Trichloroethene	ND	0.59	0.16	U
95-50-1	1,2-Dichlorobenzene	ND	2.3	0.17	U
541-73-1	1,3-Dichlorobenzene	ND	2.3	0.17	U
106-46-7	1,4-Dichlorobenzene	ND	2.3	0.20	U
1634-04-4	Methyl tert butyl ether	ND	2.3	0.24	U
179601-23-1	p/m-Xylene	ND	2.3	0.66	U
95-47-6	o-Xylene	ND	1.2	0.34	U
156-59-2	cis-1,2-Dichloroethene	ND	1.2	0.20	U
100-42-5	Styrene	ND	1.2	0.23	U
75-71-8	Dichlorodifluoromethane	ND	12	1.1	U
67-64-1	Acetone	ND	12	5.6	U
75-15-0	Carbon disulfide	ND	12	5.3	U
78-93-3	2-Butanone	ND	12	2.6	U
108-10-1	4-Methyl-2-pentanone	ND	12	1.5	U
591-78-6	2-Hexanone	ND	12	1.4	U
106-93-4	1,2-Dibromoethane	ND	1.2	0.33	U
104-51-8	n-Butylbenzene	ND	1.2	0.20	U
135-98-8	sec-Butylbenzene	ND	1.2	0.17	U
98-06-6	tert-Butylbenzene	ND	2.3	0.14	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.5	1.2	U
98-82-8	Isopropylbenzene	ND	1.2	0.13	U
99-87-6	p-Isopropyltoluene	ND	1.2	0.13	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/29/25 17:59
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: AJK
Lab File ID	: V00251029A24	Instrument ID	: VOA100
Sample Amount	: 4.4 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 96
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
91-20-3	Naphthalene	ND	4.7	0.76	U
103-65-1	n-Propylbenzene	ND	1.2	0.20	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.3	0.32	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.3	0.23	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.3	0.39	U
79-20-9	Methyl Acetate	ND	4.7	1.1	U
110-82-7	Cyclohexane	ND	12	0.64	U
76-13-1	Freon-113	ND	4.7	0.81	U
108-87-2	Methyl cyclohexane	ND	4.7	0.71	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 12:16
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: RAW
Lab File ID	: V26251030A09	Instrument ID	: VOA126
Sample Amount	: 4.9 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 95
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	5.3	2.4	U
75-34-3	1,1-Dichloroethane	ND	1.1	0.15	U
67-66-3	Chloroform	0.28	1.6	0.15	J U
56-23-5	Carbon tetrachloride	ND	1.1	0.24	U
78-87-5	1,2-Dichloropropane	ND	1.1	0.13	U
124-48-1	Dibromochloromethane	ND	1.1	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.1	0.28	U
127-18-4	Tetrachloroethene	ND	0.53	0.21	U
108-90-7	Chlorobenzene	ND	0.53	0.14	U
75-69-4	Trichlorofluoromethane	ND	4.3	0.74	U
107-06-2	1,2-Dichloroethane	ND	1.1	0.27	U
71-55-6	1,1,1-Trichloroethane	ND	0.53	0.18	U
75-27-4	Bromodichloromethane	ND	0.53	0.12	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.1	0.29	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.53	0.17	U
75-25-2	Bromoform	ND	4.3	0.26	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.18	U
71-43-2	Benzene	ND	0.53	0.18	U
108-88-3	Toluene	ND	1.1	0.58	U
100-41-4	Ethylbenzene	ND	1.1	0.15	U
74-87-3	Chloromethane	ND	4.3	1.0	U
74-83-9	Bromomethane	ND	2.1	0.62	U
75-01-4	Vinyl chloride	ND	1.1	0.36	U
75-00-3	Chloroethane	ND	2.1	0.48	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 12:16
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: RAW
Lab File ID	: V26251030A09	Instrument ID	: VOA126
Sample Amount	: 4.9 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 95
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-35-4	1,1-Dichloroethene	ND	1.1	0.25	U
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.15	U
79-01-6	Trichloroethene	ND	0.53	0.15	U
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.15	U
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.16	U
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.18	U
1634-04-4	Methyl tert butyl ether	ND	2.1	0.21	U
179601-23-1	p/m-Xylene	ND	2.1	0.60	U
95-47-6	o-Xylene	ND	1.1	0.31	U
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.19	U
100-42-5	Styrene	ND	1.1	0.21	U
75-71-8	Dichlorodifluoromethane	ND	11	0.98	U
67-64-1	Acetone	ND	11	5.1	U
75-15-0	Carbon disulfide	ND	11	4.9	U
78-93-3	2-Butanone	ND	11	2.4	U
108-10-1	4-Methyl-2-pentanone	ND	11	1.4	U
591-78-6	2-Hexanone	ND	11	1.3	U
106-93-4	1,2-Dibromoethane	ND	1.1	0.30	U
104-51-8	n-Butylbenzene	ND	1.1	0.18	U
135-98-8	sec-Butylbenzene	ND	1.1	0.16	U
98-06-6	tert-Butylbenzene	ND	2.1	0.13	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	1.1	U
98-82-8	Isopropylbenzene	ND	1.1	0.12	U
99-87-6	p-Isopropyltoluene	ND	1.1	0.12	U

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Results Summary
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 12:16
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: RAW
Lab File ID	: V26251030A09	Instrument ID	: VOA126
Sample Amount	: 4.9 g	GC Column	: RTX-VMS
Level	: LOW	%Solids	: 95
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
91-20-3	Naphthalene	ND	4.3	0.69	U
103-65-1	n-Propylbenzene	ND	1.1	0.18	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.29	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.21	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.36	U
79-20-9	Methyl Acetate	ND	4.3	1.0	U
110-82-7	Cyclohexane	ND	11	0.58	U
76-13-1	Freon-113	ND	4.3	0.74	U
108-87-2	Methyl cyclohexane	ND	4.3	0.64	U

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Tentatively Identified Compounds
Form 1
Volatile Organics by EPA 5035/8260

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 12:16
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: RAW
Lab File ID	: V26251030A09	Instrument ID	: VOA126
Sample Amount	:	GC Column	:
Level	:	%Solids	: 95
Extract Volume (MeOH)	: NA	Injection Volume	: 1

Number TICS found: 4

Concentration Units: ug/Kg

CAS Number	Compound Name	RT	EST. CONC.	Qualifier
000541-05-9	Cyclotrisiloxane, hexamethyl-	14.53	3.06	~~NJ~~ NJ
	Unknown	19.69	2.88	~~J~~ J
	Unknown	23.86	4.77	~~J~~ J
	Total TIC Compounds		10.7J	~~J~~ J

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Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-39	Date Collected	: 10/13/25 00:00
Client ID	: TRIP BLANK	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 15:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: KAB
Lab File ID	: V16251027A22	Instrument ID	: VOA116
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.14	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
75-25-2	Bromoform	ND	2.0	0.65	U V5
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U

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Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-39	Date Collected	: 10/13/25 00:00
Client ID	: TRIP BLANK	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 15:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: KAB
Lab File ID	: V16251027A22	Instrument ID	: VOA116
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
75-35-4	1,1-Dichloroethene	ND	0.50	0.17	U
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.17	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
104-51-8	n-Butylbenzene	ND	2.5	0.70	U
135-98-8	sec-Butylbenzene	ND	2.5	0.70	U
98-06-6	tert-Butylbenzene	ND	2.5	0.70	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
99-87-6	p-Isopropyltoluene	ND	2.5	0.70	U

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Results Summary
Form 1
Volatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-39	Date Collected	: 10/13/25 00:00
Client ID	: TRIP BLANK	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 15:55
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260D	Analyst	: KAB
Lab File ID	: V16251027A22	Instrument ID	: VOA116
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

		ug/L			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
91-20-3	Naphthalene	ND	2.5	0.70	U
103-65-1	n-Propylbenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.5	0.70	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.5	0.70	U
79-20-9	Methyl Acetate	ND	2.0	0.23	U
110-82-7	Cyclohexane	ND	10	0.27	U
76-13-1	Freon-113	ND	2.5	0.70	U
108-87-2	Methyl cyclohexane	ND	10	0.40	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/21/25 07:10
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-04	Analyst	: IMK
Sample Amount	: 30.48 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	140	18.	U
118-74-1	Hexachlorobenzene	ND	100	19.	U
111-44-4	Bis(2-chloroethyl)ether	ND	150	23.	U
91-58-7	2-Chloronaphthalene	ND	170	17.	U
91-94-1	3,3'-Dichlorobenzidine	ND	170	46.	U
121-14-2	2,4-Dinitrotoluene	ND	170	34.	U
606-20-2	2,6-Dinitrotoluene	ND	170	29.	U
206-44-0	Fluoranthene	100	100	20.	
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	18.	U
101-55-3	4-Bromophenyl phenyl ether	ND	170	26.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	29.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	180	17.	U
87-68-3	Hexachlorobutadiene	ND	170	25.	U
77-47-4	Hexachlorocyclopentadiene	ND	490	160	U
67-72-1	Hexachloroethane	ND	140	28.	U
78-59-1	Isophorone	ND	150	22.	U
91-20-3	Naphthalene	ND	170	21.	U
98-95-3	Nitrobenzene	ND	150	25.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	170	26.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	170	59.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/21/25 07:10
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-04	Analyst	: IMK
Sample Amount	: 30.48 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
85-68-7	Butyl benzyl phthalate	ND	170	43.	U
84-74-2	Di-n-butylphthalate	ND	170	32.	U
117-84-0	Di-n-octylphthalate	ND	170	58.	U
84-66-2	Diethyl phthalate	ND	170	16.	U
131-11-3	Dimethyl phthalate	ND	170	36.	U
56-55-3	Benzo(a)anthracene	44	100	19.	J
50-32-8	Benzo(a)pyrene	48	140	42.	J
205-99-2	Benzo(b)fluoranthene	70	100	29.	J
207-08-9	Benzo(k)fluoranthene	ND	100	27.	U
218-01-9	Chrysene	50	100	18.	J
208-96-8	Acenaphthylene	ND	140	26.	U
120-12-7	Anthracene	ND	100	33.	U
191-24-2	Benzo(ghi)perylene	38	140	20.	J
86-73-7	Fluorene	ND	170	17.	U
85-01-8	Phenanthrene	39	100	21.	J
53-70-3	Dibenzo(a,h)anthracene	ND	100	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	39	140	24.	J
129-00-0	Pyrene	74	100	17.	J
92-52-4	Biphenyl	ND	390	22.	U
106-47-8	4-Chloroaniline	ND	170	31.	U
88-74-4	2-Nitroaniline	ND	170	33.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/21/25 07:10
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-04	Analyst	: IMK
Sample Amount	: 30.48 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
99-09-2	3-Nitroaniline	ND	170	32.	U
100-01-6	4-Nitroaniline	ND	170	71.	U
132-64-9	Dibenzofuran	ND	170	16.	U
91-57-6	2-Methylnaphthalene	ND	210	21.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	170	18.	U
98-86-2	Acetophenone	ND	170	21.	U
88-06-2	2,4,6-Trichlorophenol	ND	100	32.	U
59-50-7	p-Chloro-m-cresol	ND	170	26.	U
95-57-8	2-Chlorophenol	ND	170	20.	U
120-83-2	2,4-Dichlorophenol	ND	150	28.	U
105-67-9	2,4-Dimethylphenol	ND	170	57.	U
88-75-5	2-Nitrophenol	ND	370	64.	U UJ
100-02-7	4-Nitrophenol	ND	240	70.	U
51-28-5	2,4-Dinitrophenol	ND	820	80.	U
534-52-1	4,6-Dinitro-o-cresol	ND	450	82.	U UJ
87-86-5	Pentachlorophenol	ND	140	38.	U
108-95-2	Phenol	ND	170	26.	U
95-48-7	2-Methylphenol	ND	170	27.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	250	27.	U
95-95-4	2,4,5-Trichlorophenol	ND	170	33.	U
86-74-8	Carbazole	ND	170	17.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/21/25 07:10
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-04	Analyst	: IMK
Sample Amount	: 30.48 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
1912-24-9	Atrazine	ND	140	60.	U
100-52-7	Benzaldehyde	ND	230	46.	U
105-60-2	Caprolactam	ND	170	52.	U
58-90-2	2,3,4,6-Tetrachlorophenol	ND	170	35.	U
123-91-1	1,4-Dioxane	ND	26	7.9	U

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Tentatively Identified Compounds
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/21/25 07:10
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-04	Analyst	: IMK
Sample Amount	: 30.48 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	:
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

Number TICS found: 8

Concentration Units: ug/Kg

CAS Number	Compound Name	RT	EST. CONC.	Qualifier
	Unknown Organic Acid	8.50	374	J
	Unknown Organic Acid	9.26	306	J
	Unknown PAH	11.59	151	J
	Unknown	11.82	208	J
	Unknown Alkane	12.58	172	J
	Unknown	13.11	205	J
	Unknown	13.30	235	J
	Total TIC Compounds		1650J	J

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Results Summary
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Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 18:35
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-12	Analyst	: HNY
Sample Amount	: 30.67 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	140	18.	U
118-74-1	Hexachlorobenzene	ND	100	19.	U
111-44-4	Bis(2-chloroethyl)ether	ND	150	23.	U
91-58-7	2-Chloronaphthalene	ND	170	17.	U
91-94-1	3,3'-Dichlorobenzidine	ND	170	45.	U
121-14-2	2,4-Dinitrotoluene	ND	170	34.	U
606-20-2	2,6-Dinitrotoluene	ND	170	29.	U
206-44-0	Fluoranthene	ND	100	19.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	18.	U
101-55-3	4-Bromophenyl phenyl ether	ND	170	26.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	200	29.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	180	17.	U
87-68-3	Hexachlorobutadiene	ND	170	25.	U
77-47-4	Hexachlorocyclopentadiene	ND	480	150	U
67-72-1	Hexachloroethane	ND	140	27.	U
78-59-1	Isophorone	ND	150	22.	U
91-20-3	Naphthalene	ND	170	20.	U
98-95-3	Nitrobenzene	ND	150	25.	U
86-30-6	NDPA/DPA	ND	140	19.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	170	26.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	170	58.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 18:35
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-12	Analyst	: HNY
Sample Amount	: 30.67 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
85-68-7	Butyl benzyl phthalate	ND	170	43.	U
84-74-2	Di-n-butylphthalate	ND	170	32.	U
117-84-0	Di-n-octylphthalate	ND	170	57.	U
84-66-2	Diethyl phthalate	ND	170	16.	U
131-11-3	Dimethyl phthalate	ND	170	36.	U
56-55-3	Benzo(a)anthracene	ND	100	19.	U
50-32-8	Benzo(a)pyrene	ND	140	41.	U
205-99-2	Benzo(b)fluoranthene	ND	100	28.	U
207-08-9	Benzo(k)fluoranthene	ND	100	27.	U
218-01-9	Chrysene	ND	100	18.	U
208-96-8	Acenaphthylene	ND	140	26.	U
120-12-7	Anthracene	ND	100	33.	U
191-24-2	Benzo(ghi)perylene	ND	140	20.	U
86-73-7	Fluorene	ND	170	16.	U
85-01-8	Phenanthrene	ND	100	20.	U
53-70-3	Dibenzo(a,h)anthracene	ND	100	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	24.	U
129-00-0	Pyrene	ND	100	17.	U
92-52-4	Biphenyl	ND	380	22.	U
106-47-8	4-Chloroaniline	ND	170	31.	U
88-74-4	2-Nitroaniline	ND	170	33.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 18:35
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-12	Analyst	: HNY
Sample Amount	: 30.67 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
99-09-2	3-Nitroaniline	ND	170	32.	U
100-01-6	4-Nitroaniline	ND	170	70.	U
132-64-9	Dibenzofuran	ND	170	16.	U
91-57-6	2-Methylnaphthalene	ND	200	20.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	170	18.	U
98-86-2	Acetophenone	ND	170	21.	U
88-06-2	2,4,6-Trichlorophenol	ND	100	32.	U
59-50-7	p-Chloro-m-cresol	ND	170	25.	U
95-57-8	2-Chlorophenol	ND	170	20.	U
120-83-2	2,4-Dichlorophenol	ND	150	27.	U
105-67-9	2,4-Dimethylphenol	ND	170	56.	U
88-75-5	2-Nitrophenol	ND	360	64.	✗ U5
100-02-7	4-Nitrophenol	ND	240	69.	U
51-28-5	2,4-Dinitrophenol	ND	810	79.	U
534-52-1	4,6-Dinitro-o-cresol	ND	440	81.	✗ U5
87-86-5	Pentachlorophenol	ND	140	37.	U
108-95-2	Phenol	ND	170	26.	U
95-48-7	2-Methylphenol	ND	170	26.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	240	26.	U
95-95-4	2,4,5-Trichlorophenol	ND	170	32.	U
86-74-8	Carbazole	ND	170	16.	U

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Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 18:35
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8270E	Dilution Factor	: 1
Lab File ID	: 66083-12	Analyst	: HNY
Sample Amount	: 30.67 g	Instrument ID	: SV103
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
1912-24-9	Atrazine	ND	140	59.	~~U~~ US
100-52-7	Benzaldehyde	ND	220	46.	U
105-60-2	Caprolactam	ND	170	51.	U
58-90-2	2,3,4,6-Tetrachlorophenol	ND	170	34.	U
123-91-1	1,4-Dioxane	ND	25	7.8	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 10:47
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10251020a-22	Analyst	: AKM
Sample Amount	: 15.18 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.66	0.324	U
58-89-9	Lindane	ND	0.690	0.308	U
319-84-6	Alpha-BHC	ND	0.690	0.196	U
319-85-7	Beta-BHC	ND	1.66	0.628	U
76-44-8	Heptachlor	ND	0.828	0.371	U
309-00-2	Aldrin	ND	1.66	0.583	U
1024-57-3	Heptachlor epoxide	ND	3.10	0.931	U
72-20-8	Endrin	ND	0.690	0.283	U
7421-93-4	Endrin aldehyde	ND	2.07	0.724	U
53494-70-5	Endrin ketone	ND	1.66	0.426	U
60-57-1	Dieldrin	ND	1.03	0.517	U
72-54-8	4,4'-DDD	ND	1.66	0.590	U
50-29-3	4,4'-DDT	ND	1.66	1.33	U
959-98-8	Endosulfan I	ND	1.66	0.391	U
33213-65-9	Endosulfan II	ND	1.66	0.553	U
1031-07-8	Endosulfan sulfate	ND	0.690	0.328	U
72-43-5	Methoxychlor	ND	3.10	0.966	U
8001-35-2	Toxaphene	ND	31.0	8.69	U
5103-71-9	cis-Chlordane	ND	2.07	0.577	U
5103-74-2	trans-Chlordane	ND	2.07	0.546	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 10:47
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10251020a-22	Analyst	: AKM
Sample Amount	: 15.18 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
57-74-9	Chlordane	ND	13.8	5.48	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 10:47
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10251020a-22	Analyst	: AKM
Sample Amount	: 15.18 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticidesII
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
72-55-9	4,4'-DDE	ND	1.66	0.383	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 11:22
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10251020a-25	Analyst	: AKM
Sample Amount	: 15.08 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.65	0.323	U
58-89-9	Lindane	ND	0.688	0.307	U
319-84-6	Alpha-BHC	ND	0.688	0.195	U
319-85-7	Beta-BHC	ND	1.65	0.626	U
76-44-8	Heptachlor	ND	0.825	0.370	U
309-00-2	Aldrin	ND	1.65	0.581	U
1024-57-3	Heptachlor epoxide	ND	3.10	0.929	U
72-20-8	Endrin	ND	0.688	0.282	U
7421-93-4	Endrin aldehyde	ND	2.06	0.722	U
53494-70-5	Endrin ketone	ND	1.65	0.425	U
60-57-1	Dieldrin	ND	1.03	0.516	U
72-55-9	4,4'-DDE	ND	1.65	0.382	U
72-54-8	4,4'-DDD	ND	1.65	0.589	U
50-29-3	4,4'-DDT	ND	1.65	1.33	U
959-98-8	Endosulfan I	ND	1.65	0.390	U
33213-65-9	Endosulfan II	ND	1.65	0.552	U
1031-07-8	Endosulfan sulfate	ND	0.688	0.327	U
72-43-5	Methoxychlor	ND	3.10	0.963	U
8001-35-2	Toxaphene	ND	31.0	8.67	U
5103-71-9	cis-Chlordane	ND	2.06	0.575	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 11:22
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10251020a-25	Analyst	: AKM
Sample Amount	: 15.08 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
5103-74-2	trans-Chlordane	ND	2.06	0.545	U
57-74-9	Chlordane	ND	13.8	5.47	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 17:37
Sample Matrix	: SOIL	Date Extracted	: 10/26/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 11251027a-14	Analyst	: PEG
Sample Amount	: 15.2 g	Instrument ID	: PEST11
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.66	0.326	U
58-89-9	Lindane	ND	0.693	0.310	U
319-84-6	Alpha-BHC	ND	0.693	0.197	U
319-85-7	Beta-BHC	ND	1.66	0.631	U
76-44-8	Heptachlor	ND	0.832	0.373	U
309-00-2	Aldrin	ND	1.66	0.586	U
1024-57-3	Heptachlor epoxide	ND	3.12	0.936	U
72-20-8	Endrin	ND	0.693	0.284	U
7421-93-4	Endrin aldehyde	ND	2.08	0.728	U
53494-70-5	Endrin ketone	ND	1.66	0.428	U
60-57-1	Dieldrin	ND	1.04	0.520	U
72-55-9	4,4'-DDE	ND	1.66	0.385	U
72-54-8	4,4'-DDD	ND	1.66	0.593	U
50-29-3	4,4'-DDT	ND	1.66	1.34	U
959-98-8	Endosulfan I	ND	1.66	0.393	U
33213-65-9	Endosulfan II	ND	1.66	0.556	U
1031-07-8	Endosulfan sulfate	ND	0.693	0.330	U
72-43-5	Methoxychlor	ND	3.12	0.970	U
8001-35-2	Toxaphene	ND	31.2	8.73	U
5103-71-9	cis-Chlordane	ND	2.08	0.580	U

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Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 17:37
Sample Matrix	: SOIL	Date Extracted	: 10/26/25
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 11251027a-14	Analyst	: PEG
Sample Amount	: 15.2 g	Instrument ID	: PEST11
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
5103-74-2	trans-Chlordane	ND	2.08	0.549	U
57-74-9	Chlordane	ND	13.9	5.51	U

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Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 10:48
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8082A	Dilution Factor	: 1
Lab File ID	: P7251020a-10	Analyst	: MHG
Sample Amount	: 10.88 g	Instrument ID	: PEST7
Extraction Method	: EPA 3546	GC Column	: CLP-Pesticide
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
12674-11-2	Aroclor 1016	ND	48.1	4.27	U
11104-28-2	Aroclor 1221	ND	48.1	4.82	U
11141-16-5	Aroclor 1232	ND	48.1	10.2	U
53469-21-9	Aroclor 1242	ND	48.1	6.49	U
12672-29-6	Aroclor 1248	ND	48.1	7.22	U
11097-69-1	Aroclor 1254	ND	48.1	5.26	U
11096-82-5	Aroclor 1260	ND	48.1	8.89	U
37324-23-5	Aroclor 1262	ND	48.1	6.11	U
11100-14-4	Aroclor 1268	ND	48.1	4.98	U
1336-36-3	PCBs, Total	ND	48.1	4.27	U

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Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/20/25 11:23
Sample Matrix	: SOIL	Date Extracted	: 10/19/25
Analytical Method	: 1,8082A	Dilution Factor	: 1
Lab File ID	: P7251020a-13	Analyst	: MHG
Sample Amount	: 10.19 g	Instrument ID	: PEST7
Extraction Method	: EPA 3546	GC Column	: CLP-Pesticide
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
12674-11-2	Aroclor 1016	ND	50.9	4.52	U
11104-28-2	Aroclor 1221	ND	50.9	5.10	U
11141-16-5	Aroclor 1232	ND	50.9	10.8	U
53469-21-9	Aroclor 1242	ND	50.9	6.86	U
12672-29-6	Aroclor 1248	ND	50.9	7.64	U
11097-69-1	Aroclor 1254	ND	50.9	5.57	U
11096-82-5	Aroclor 1260	ND	50.9	9.41	U
37324-23-5	Aroclor 1262	ND	50.9	6.46	U
11100-14-4	Aroclor 1268	ND	50.9	5.27	U
1336-36-3	PCBs, Total	ND	50.9	4.52	U

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Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/27/25 22:46
Sample Matrix	: SOIL	Date Extracted	: 10/26/25
Analytical Method	: 1,8082A	Dilution Factor	: 1
Lab File ID	: 24251027a-63	Analyst	: EMR
Sample Amount	: 10.34 g	Instrument ID	: PEST24
Extraction Method	: EPA 3546	GC Column	: CLP-Pesticide
Extract Volume	: 1000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
12674-11-2	Aroclor 1016	ND	51.0	4.52	U
11104-28-2	Aroclor 1221	ND	51.0	5.10	U
11141-16-5	Aroclor 1232	ND	51.0	10.8	U
53469-21-9	Aroclor 1242	ND	51.0	6.87	U
12672-29-6	Aroclor 1248	ND	51.0	7.64	U
11097-69-1	Aroclor 1254	ND	51.0	5.57	U
11096-82-5	Aroclor 1260	ND	51.0	9.42	U
37324-23-5	Aroclor 1262	ND	51.0	6.47	U
11100-14-4	Aroclor 1268	ND	51.0	5.28	U
1336-36-3	PCBs, Total	ND	51.0	4.52	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-01	Date Collected	: 10/16/25 13:20
Client ID	: B-30_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:10
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_34	Analyst	: AC
Sample Amount	: 2.2 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.800	0.104	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.050	0.400	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.200	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.800	0.154	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.042	0.200	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.200	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.200	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.084	0.200	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.110	0.200	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.800	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.200	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.074	0.200	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.228	0.200	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.200	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.800	0.236	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.200	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.200	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-01	Date Collected	: 10/16/25 13:20
Client ID	: B-30_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:10
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_34	Analyst	: AC
Sample Amount	: 2.2 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.200	0.056	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.200	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.200	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.200	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.200	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.200	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.200	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.800	0.160	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.800	0.284	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.200	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.800	0.152	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.800	0.242	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.200	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.200	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-01	Date Collected	: 10/16/25 13:20
Client ID	: B-30_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:10
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_34	Analyst	: AC
Sample Amount	: 2.2 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.00	0.250	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.00	0.242	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.400	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.400	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.400	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.400	0.120	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	1.00	0.346	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	5.00	0.928	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	5.00	1.64	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-02	Date Collected	: 10/16/25 13:23
Client ID	: B-30_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:19
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_35	Analyst	: AC
Sample Amount	: 2.09 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.808	0.105	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.404	0.040	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.202	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.808	0.156	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.202	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.202	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.202	0.073	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.057	0.202	0.034	✓ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.113	0.202	0.045	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.808	0.115	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.202	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	0.202	0.024	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.115	0.202	0.047	✓ U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.202	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.808	0.238	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.202	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.202	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-02	Date Collected	: 10/16/25 13:23
Client ID	: B-30_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:19
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_35	Analyst	: AC
Sample Amount	: 2.09 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.202	0.057	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.202	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.202	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.202	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.202	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.202	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.202	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.808	0.162	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.808	0.287	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.202	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.808	0.154	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.808	0.244	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.202	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.202	0.067	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-02	Date Collected	: 10/16/25 13:23
Client ID	: B-30_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:19
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_35	Analyst	: AC
Sample Amount	: 2.09 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.02	0.253	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.02	0.244	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.404	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.404	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.404	0.049	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.404	0.121	U/U5
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	1.01	0.350	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	5.05	0.938	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	5.05	1.66	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-05	Date Collected	: 10/16/25 14:35
Client ID	: B-31_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:28
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_36	Analyst	: AC
Sample Amount	: 2.38 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.796	0.104	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.398	0.040	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.199	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.796	0.153	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.038	0.199	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.199	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.199	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.078	0.199	0.034	✗ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.088	0.199	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.796	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.199	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.082	0.199	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.689	0.199	0.046	
335-76-2	Perfluorodecanoic Acid (PFDA)	0.070	0.199	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.796	0.235	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.199	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.199	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-05	Date Collected	: 10/16/25 14:35
Client ID	: B-31_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:28
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_36	Analyst	: AC
Sample Amount	: 2.38 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.199	0.056	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.199	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.199	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.199	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.199	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.199	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.199	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.796	0.159	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.796	0.283	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.199	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.796	0.151	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.796	0.241	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.199	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.199	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-05	Date Collected	: 10/16/25 14:35
Client ID	: B-31_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:28
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_36	Analyst	: AC
Sample Amount	: 2.38 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.99	0.249	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.99	0.241	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.398	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.398	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.398	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.398	0.119	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	0.996	0.344	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	4.98	0.924	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	4.98	1.63	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-06	Date Collected	: 10/16/25 14:38
Client ID	: B-31_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:37
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_37	Analyst	: AC
Sample Amount	: 2.22 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.789	0.103	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.041	0.395	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.197	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.789	0.152	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.047	0.197	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.197	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.197	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.075	0.197	0.034	✗ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.245	0.197	0.043	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.789	0.112	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.197	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.079	0.197	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.334	0.197	0.045	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.036	0.197	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.789	0.233	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.197	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.197	0.095	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-06	Date Collected	: 10/16/25 14:38
Client ID	: B-31_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:37
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_37	Analyst	: AC
Sample Amount	: 2.22 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.197	0.055	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.197	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.197	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.197	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.197	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.197	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.197	0.041	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.789	0.158	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.789	0.280	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.197	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.789	0.150	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.789	0.239	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.197	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.197	0.065	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-06	Date Collected	: 10/16/25 14:38
Client ID	: B-31_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 10:37
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_37	Analyst	: AC
Sample Amount	: 2.22 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.97	0.247	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.97	0.239	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.395	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.395	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.395	0.047	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.395	0.118	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.987	0.341	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.93	0.916	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.93	1.62	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-09	Date Collected	: 10/16/25 09:16
Client ID	: B-32_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:21
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_41	Analyst	: AC
Sample Amount	: 2.24 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 89
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.807	0.105	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.050	0.404	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.202	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.807	0.155	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.036	0.202	0.034	JF J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.202	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.202	0.073	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.149	0.202	0.034	✗ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.212	0.202	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.807	0.115	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.202	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.137	0.202	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	1.43	0.202	0.046	
335-76-2	Perfluorodecanoic Acid (PFDA)	0.099	0.202	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.807	0.238	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.202	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.202	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-09	Date Collected	: 10/16/25 09:16
Client ID	: B-32_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:21
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_41	Analyst	: AC
Sample Amount	: 2.24 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 89
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.081	0.202	0.057	JF J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.202	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.202	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.202	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.075	0.202	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.202	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.202	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.807	0.161	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.807	0.286	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.202	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.807	0.153	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.807	0.244	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.202	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.202	0.067	U

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Pace

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-09	Date Collected	: 10/16/25 09:16
Client ID	: B-32_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:21
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_41	Analyst	: AC
Sample Amount	: 2.24 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 89
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.02	0.252	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.02	0.244	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.404	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.404	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.404	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.404	0.121	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	1.01	0.349	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	5.04	0.936	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	5.04	1.65	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-10	Date Collected	: 10/16/25 09:18
Client ID	: B-32_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:30
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_42	Analyst	: AC
Sample Amount	: 2.43 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 83
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.789	0.103	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.395	0.040	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.197	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.789	0.152	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.197	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.197	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.197	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.071	0.197	0.034	✓ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.193	0.197	0.043	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.789	0.112	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.197	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.128	0.197	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.434	0.197	0.045	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.075	0.197	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.789	0.233	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.197	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.197	0.095	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-10	Date Collected	: 10/16/25 09:18
Client ID	: B-32_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:30
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_42	Analyst	: AC
Sample Amount	: 2.43 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 83
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.079	0.197	0.055	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.197	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.197	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.197	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.038	0.197	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.197	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.197	0.041	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.789	0.158	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.789	0.280	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.197	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.789	0.150	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.789	0.239	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.197	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.197	0.065	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-10	Date Collected	: 10/16/25 09:18
Client ID	: B-32_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 11:30
Sample Matrix	: SOIL	Date Extracted	: 10/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI12_251024_42	Analyst	: AC
Sample Amount	: 2.43 g	Instrument ID	: LCMS12
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 83
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.97	0.247	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.97	0.239	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.395	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.395	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.395	0.047	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.395	0.118	U/US
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.987	0.341	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.93	0.916	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.93	1.62	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-22	Date Collected	: 10/16/25 15:06
Client ID	: B-36_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:12
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_36	Analyst	: ANH
Sample Amount	: 2.2 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.155	0.795	0.103	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.050	0.397	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.199	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.795	0.153	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.042	0.199	0.034	JF J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.199	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.199	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.048	0.199	0.034	✓ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.228	0.199	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.795	0.113	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.199	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.143	0.199	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.489	0.199	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.089	0.199	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.795	0.234	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.199	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.199	0.095	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-22	Date Collected	: 10/16/25 15:06
Client ID	: B-36_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:12
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_36	Analyst	: ANH
Sample Amount	: 2.2 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.091	0.199	0.056	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.199	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.199	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.199	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.199	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	0.036	0.199	0.032	J
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.199	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.795	0.159	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.795	0.282	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.199	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.795	0.151	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.795	0.240	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.199	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.199	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-22	Date Collected	: 10/16/25 15:06
Client ID	: B-36_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:12
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_36	Analyst	: ANH
Sample Amount	: 2.2 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.99	0.248	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.99	0.240	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.397	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.397	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.397	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.397	0.119	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.994	0.344	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.97	0.922	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.97	1.63	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-23	Date Collected	: 10/16/25 15:08
Client ID	: B-36_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:20
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_37	Analyst	: ANH
Sample Amount	: 2.16 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.796	0.103	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.060	0.398	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.199	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.796	0.153	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.199	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.199	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.199	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.044	0.199	0.034	✗ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.159	0.199	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.796	0.113	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.199	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.042	0.199	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.189	0.199	0.046	✗ U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.199	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.796	0.235	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.199	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.199	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-23	Date Collected	: 10/16/25 15:08
Client ID	: B-36_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:20
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_37	Analyst	: ANH
Sample Amount	: 2.16 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.199	0.056	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.199	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.199	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.199	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.199	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.199	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.199	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.796	0.159	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.796	0.282	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.199	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.796	0.151	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.796	0.241	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.199	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.199	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-23	Date Collected	: 10/16/25 15:08
Client ID	: B-36_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:20
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_37	Analyst	: ANH
Sample Amount	: 2.16 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.99	0.249	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.99	0.241	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.398	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.398	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.398	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.398	0.119	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	0.994	0.344	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	4.97	0.923	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	4.97	1.63	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-25	Date Collected	: 10/16/25 10:40
Client ID	: B-37_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:29
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_38	Analyst	: ANH
Sample Amount	: 2.36 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 86
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.122	0.786	0.102	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.067	0.393	0.039	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.196	0.035	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.786	0.151	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.196	0.033	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.196	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.196	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.051	0.196	0.033	✗ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.210	0.196	0.043	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.786	0.112	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.196	0.033	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.171	0.196	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.501	0.196	0.045	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.110	0.196	0.031	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.786	0.232	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.196	0.092	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.196	0.094	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-25	Date Collected	: 10/16/25 10:40
Client ID	: B-37_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:29
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_38	Analyst	: ANH
Sample Amount	: 2.36 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 86
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.116	0.196	0.055	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.196	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.196	0.037	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.196	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.196	0.035	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.196	0.031	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.196	0.041	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.786	0.157	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.786	0.279	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.196	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.786	0.149	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.786	0.238	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.196	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.196	0.065	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-25	Date Collected	: 10/16/25 10:40
Client ID	: B-37_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:29
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_38	Analyst	: ANH
Sample Amount	: 2.36 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 86
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.96	0.245	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.96	0.238	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.393	0.035	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.393	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.393	0.047	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.393	0.118	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.982	0.340	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.91	0.911	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.91	1.61	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-26	Date Collected	: 10/16/25 10:42
Client ID	: B-37_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:38
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_39	Analyst	: ANH
Sample Amount	: 2.26 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.155	0.807	0.105	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.105	0.404	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.202	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.807	0.155	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.087	0.202	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.202	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	0.109	0.202	0.073	J
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.069	0.202	0.034	J U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.381	0.202	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.807	0.115	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.202	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.214	0.202	0.024	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.468	0.202	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.117	0.202	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.807	0.238	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.202	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.202	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-26	Date Collected	: 10/16/25 10:42
Client ID	: B-37_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:38
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_39	Analyst	: ANH
Sample Amount	: 2.26 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.137	0.202	0.057	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.202	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.202	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.202	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.053	0.202	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	0.044	0.202	0.032	J
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.202	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.807	0.161	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.807	0.286	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.202	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.807	0.153	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.807	0.244	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.202	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.202	0.067	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-26	Date Collected	: 10/16/25 10:42
Client ID	: B-37_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 15:38
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_39	Analyst	: ANH
Sample Amount	: 2.26 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.02	0.252	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.02	0.244	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.404	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.404	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.404	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.404	0.121	U/US
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	1.01	0.349	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	5.04	0.936	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	5.04	1.65	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-28	Date Collected	: 10/16/25 10:20
Client ID	: B-38_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:09
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_42	Analyst	: ANH
Sample Amount	: 2.09 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.129	0.809	0.105	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.075	0.405	0.041	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.202	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.809	0.156	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.071	0.202	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.202	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	0.103	0.202	0.073	J
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.049	0.202	0.034	✓ U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.467	0.202	0.045	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.809	0.115	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.202	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.172	0.202	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.320	0.202	0.047	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.077	0.202	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.809	0.239	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.202	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.202	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-28	Date Collected	: 10/16/25 10:20
Client ID	: B-38_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:09
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_42	Analyst	: ANH
Sample Amount	: 2.09 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.085	0.202	0.057	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.202	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.202	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.202	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.202	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.202	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.202	0.043	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.809	0.162	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.809	0.287	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.202	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.809	0.154	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.809	0.245	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.202	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.202	0.067	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-28	Date Collected	: 10/16/25 10:20
Client ID	: B-38_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:09
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_42	Analyst	: ANH
Sample Amount	: 2.09 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.02	0.253	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.02	0.245	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.405	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.405	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.405	0.049	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.405	0.121	U/V5
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	1.01	0.350	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	5.06	0.939	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	5.06	1.66	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-29	Date Collected	: 10/16/25 10:23
Client ID	: B-38_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:18
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_43	Analyst	: ANH
Sample Amount	: 2.14 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.123	0.804	0.104	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.056	0.402	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.201	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.804	0.155	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.060	0.201	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.201	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.201	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.201	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.275	0.201	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.804	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.201	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.042	0.201	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.110	0.201	0.046	✓ U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.201	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.804	0.237	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.201	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.201	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-29	Date Collected	: 10/16/25 10:23
Client ID	: B-38_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:18
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_43	Analyst	: ANH
Sample Amount	: 2.14 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.201	0.056	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.201	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.201	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.201	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.201	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.201	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.201	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.804	0.161	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.804	0.285	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.201	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.804	0.153	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.804	0.243	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.201	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.201	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-29	Date Collected	: 10/16/25 10:23
Client ID	: B-38_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:18
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_43	Analyst	: ANH
Sample Amount	: 2.14 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 93
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.01	0.251	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.01	0.243	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.402	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.402	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.402	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.402	0.120	U US
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	1.00	0.348	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	5.02	0.932	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	5.02	1.65	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-31	Date Collected	: 10/16/25 09:50
Client ID	: B-39_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:27
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_44	Analyst	: ANH
Sample Amount	: 2.21 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.798	0.104	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.048	0.399	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.200	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.798	0.154	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.200	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.200	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.200	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.070	0.200	0.034	J U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.148	0.200	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.798	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.200	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.182	0.200	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.619	0.200	0.046	
335-76-2	Perfluorodecanoic Acid (PFDA)	0.074	0.200	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.798	0.235	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.200	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.200	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-31	Date Collected	: 10/16/25 09:50
Client ID	: B-39_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:27
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_44	Analyst	: ANH
Sample Amount	: 2.21 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/g			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.080	0.200	0.056	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.200	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.200	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.200	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.042	0.200	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.200	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.200	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.798	0.160	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.798	0.283	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.200	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.798	0.152	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.798	0.241	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.200	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.200	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-31	Date Collected	: 10/16/25 09:50
Client ID	: B-39_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:27
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_44	Analyst	: ANH
Sample Amount	: 2.21 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.00	0.249	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.00	0.241	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.399	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.399	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.399	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.399	0.120	U UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.998	0.345	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.99	0.926	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.99	1.64	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-32	Date Collected	: 10/16/25 09:52
Client ID	: B-39_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:36
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_45	Analyst	: ANH
Sample Amount	: 2.19 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

		ng/g			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.792	0.103	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.396	0.040	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.198	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.792	0.152	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.198	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.198	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.198	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.164	0.198	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.196	0.198	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.792	0.113	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.198	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.042	0.198	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.188	0.198	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.198	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.792	0.234	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.198	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.198	0.095	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-32	Date Collected	: 10/16/25 09:52
Client ID	: B-39_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:36
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_45	Analyst	: ANH
Sample Amount	: 2.19 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.198	0.055	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.198	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.198	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.198	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.198	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.198	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.198	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.792	0.158	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.792	0.281	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.198	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.792	0.150	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.792	0.239	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.198	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.198	0.065	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-32	Date Collected	: 10/16/25 09:52
Client ID	: B-39_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 16:36
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_45	Analyst	: ANH
Sample Amount	: 2.19 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.98	0.247	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.98	0.239	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.396	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.396	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.396	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.396	0.119	U/UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	0.989	0.342	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	4.95	0.918	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	4.95	1.62	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 17:03
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_48	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.803	0.104	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.401	0.040	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.201	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.803	0.154	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.201	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.201	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.201	0.072	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.038	0.201	0.034	J
335-67-1	Perfluorooctanoic Acid (PFOA)	0.102	0.201	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.803	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.201	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	0.201	0.024	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.078	0.201	0.046	J
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.201	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.803	0.237	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.201	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.201	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 17:03
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_48	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.201	0.056	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.201	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.201	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.201	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.201	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.201	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.201	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.803	0.160	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.803	0.285	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.201	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.803	0.152	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.803	0.243	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.201	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.201	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 17:03
Sample Matrix	: SOIL	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251023_48	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 95
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.01	0.251	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.01	0.243	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.401	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.401	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.401	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.401	0.120	U UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	1.00	0.347	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	5.02	0.931	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	5.02	1.64	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-36	Date Collected	: 10/16/25 08:30
Client ID	: M&S_EB01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 08:23
Sample Matrix	: WATER	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI08_251030_30	Analyst	: AC
Sample Amount	: 275.47 g	Instrument ID	: LCMS08
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/l Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	5.81	2.16	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	2.90	0.537	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.45	0.465	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	5.81	1.35	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.45	0.348	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.45	0.334	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.45	0.450	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.45	0.247	U
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.45	0.363	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	5.81	2.95	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.45	0.450	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.45	0.218	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.421	1.45	0.247	✓ U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.45	0.378	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	5.81	2.77	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.45	0.218	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.45	1.04	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-36	Date Collected	: 10/16/25 08:30
Client ID	: M&S_EB01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 08:23
Sample Matrix	: WATER	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI08_251030_30	Analyst	: AC
Sample Amount	: 275.47 g	Instrument ID	: LCMS08
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/l Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.45	0.348	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.45	0.247	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.45	0.290	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.45	0.668	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.45	0.406	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.45	0.247	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.45	0.174	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	5.81	0.857	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	5.81	1.13	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.45	0.305	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	5.81	0.639	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	5.81	0.436	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.45	0.566	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.45	0.421	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-36	Date Collected	: 10/16/25 08:30
Client ID	: M&S_EB01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 08:23
Sample Matrix	: WATER	Date Extracted	: 10/22/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI08_251030_30	Analyst	: AC
Sample Amount	: 275.47 g	Instrument ID	: LCMS08
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/l Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	14.5	1.54	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	14.5	1.28	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	2.90	0.131	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	2.90	0.755	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	2.90	0.363	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	2.90	0.857	U/UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	7.26	1.87	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	36.3	10.4	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	36.3	11.0	U

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 10:27
Sample Matrix	: SOIL	Dilution Factor	: 2
Analytical Method	: 1,6010D	Analyst	: MFR
Lab File ID	: WG2131391.pdf	Instrument ID	: TRACE8
Sample Amount	: 1.314g	%Solids	: 96
Digestion Method	: EPA 3050B	Date Digested	: 10/22/25

CAS NO.	Parameter	mg/kg Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	11000	7.97	2.59	
7440-36-0	Antimony, Total	ND	3.98	3.07	V U
7440-38-2	Arsenic, Total	5.35	0.797	0.344	
7440-39-3	Barium, Total	35.6	0.797	0.085	
7440-41-7	Beryllium, Total	0.432	0.398	0.044	
7440-43-9	Cadmium, Total	0.119	0.797	0.044	J
7440-70-2	Calcium, Total	10300	7.97	4.52	J
7440-47-3	Chromium, Total	12.3	0.797	0.676	
7440-48-4	Cobalt, Total	8.64	1.59	0.198	
7440-50-8	Copper, Total	26.4	0.797	0.181	J
7439-89-6	Iron, Total	21900	3.98	0.837	
7439-92-1	Lead, Total	14.6	3.98	0.190	
7439-95-4	Magnesium, Total	9490	7.97	1.30	
7439-96-5	Manganese, Total	830	0.797	0.427	
7440-02-0	Nickel, Total	18.8	1.99	0.644	
7440-09-7	Potassium, Total	545	199	40.4	
7782-49-2	Selenium, Total	ND	1.59	0.262	U
7440-22-4	Silver, Total	ND	0.398	0.237	U
7440-23-5	Sodium, Total	ND	159	84.5	U
7440-28-0	Thallium, Total	ND	1.59	0.719	U
7440-62-2	Vanadium, Total	12.4	0.797	0.120	
7440-66-6	Zinc, Total	55.7	3.98	0.483	J

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 22:11
Sample Matrix	: SOIL	Dilution Factor	: 2
Analytical Method	: 1,6010D	Analyst	: JMF
Lab File ID	: WG2131748.pdf	Instrument ID	: TRACE6
Sample Amount	: 1.328g	%Solids	: 96
Digestion Method	: EPA 3050B	Date Digested	: 10/22/25

CAS NO.	Parameter	mg/kg Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	16800	7.81	2.54	
7440-36-0	Antimony, Total	ND	3.90	3.01	J UJ
7440-38-2	Arsenic, Total	11.4	0.781	0.337	
7440-39-3	Barium, Total	38.4	0.781	0.083	
7440-41-7	Beryllium, Total	0.820	0.390	0.043	
7440-43-9	Cadmium, Total	0.301	0.781	0.043	J
7440-70-2	Calcium, Total	14300	7.81	4.43	
7440-47-3	Chromium, Total	20.5	0.781	0.662	
7440-48-4	Cobalt, Total	20.8	1.56	0.194	
7440-50-8	Copper, Total	51.8	0.781	0.177	J
7439-92-1	Lead, Total	16.0	3.90	0.186	
7439-95-4	Magnesium, Total	8280	7.81	1.27	
7439-96-5	Manganese, Total	407	0.781	0.419	
7440-02-0	Nickel, Total	42.2	1.95	0.631	
7440-09-7	Potassium, Total	686	195	39.6	
7782-49-2	Selenium, Total	ND	1.56	0.257	U
7440-22-4	Silver, Total	ND	0.390	0.233	U
7440-23-5	Sodium, Total	ND	156	82.8	U
7440-28-0	Thallium, Total	ND	1.56	0.704	U
7440-62-2	Vanadium, Total	19.6	0.781	0.118	
7440-66-6	Zinc, Total	91.7	3.90	0.473	J

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 00:50
Sample Matrix	: SOIL	Dilution Factor	: 5
Analytical Method	: 1,6010D	Analyst	: JMF
Lab File ID	: WG2131748.pdf	Instrument ID	: TRACE6
Sample Amount	: 1.328g	%Solids	: 96
Digestion Method	: EPA 3050B	Date Digested	: 10/22/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-89-6	Iron, Total	36800	9.76	2.05	

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/09/25 17:28
Sample Matrix	: SOIL	Dilution Factor	: 2
Analytical Method	: 1,6010D	Analyst	: MRP
Lab File ID	: WG2139223.csv	Instrument ID	: TRACE11
Sample Amount	: 1.312g	%Solids	: 95
Digestion Method	: EPA 3050B	Date Digested	: 11/04/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	11200	8.03	2.61	J
7440-36-0	Antimony, Total	ND	4.02	3.09	U J3
7440-38-2	Arsenic, Total	5.87	0.803	0.347	J
7440-39-3	Barium, Total	38.9	0.803	0.085	J
7440-41-7	Beryllium, Total	0.457	0.402	0.044	
7440-43-9	Cadmium, Total	ND	0.803	0.044	U
7440-70-2	Calcium, Total	21000	8.03	4.55	J
7440-47-3	Chromium, Total	12.5	0.803	0.681	J
7440-48-4	Cobalt, Total	9.08	1.61	0.199	
7440-50-8	Copper, Total	22.2	0.803	0.182	J
7439-89-6	Iron, Total	23000	4.02	0.843	J
7439-92-1	Lead, Total	15.3	4.02	0.191	
7439-95-4	Magnesium, Total	15200	8.03	1.31	J
7439-96-5	Manganese, Total	1000	0.803	0.430	J
7440-02-0	Nickel, Total	18.8	2.01	0.649	J
7440-09-7	Potassium, Total	514	201	40.7	J
7782-49-2	Selenium, Total	ND	1.61	0.264	U R
7440-22-4	Silver, Total	ND	0.402	0.239	U
7440-23-5	Sodium, Total	ND	161	85.1	U J3
7440-28-0	Thallium, Total	ND	1.61	0.724	U
7440-62-2	Vanadium, Total	12.2	0.803	0.121	J
7440-66-6	Zinc, Total	51.2	4.02	0.487	

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 06:57
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,7471B	Analyst	: RDB
Lab File ID	: WG2131384.pdf	Instrument ID	: NIC5
Sample Amount	: 0.336g	%Solids	: 96
Digestion Method	: EPA 7471B	Date Digested	: 10/22/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, Total	ND	0.078	0.051	U

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/23/25 07:32
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,7471B	Analyst	: RDB
Lab File ID	: WG2131384.pdf	Instrument ID	: NIC5
Sample Amount	: 0.378g	%Solids	: 96
Digestion Method	: EPA 7471B	Date Digested	: 10/22/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, Total	ND	0.069	0.045	U

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Form 1
METALS

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/07/25 14:36
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,7471B	Analyst	: JWN
Lab File ID	: WG2138421.csv	Instrument ID	: NIC4
Sample Amount	: 0.39g	%Solids	: 95
Digestion Method	: EPA 7471B	Date Digested	: 11/04/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7439-97-6	Mercury, Total	ND	0.068	0.044	U U5

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Form 1
WETCHEM

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-04	Date Collected	: 10/16/25 13:35
Client ID	: B-30_9.0-10.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/24/25 13:19
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN102425-B1	Instrument ID	: LACHAT6
Sample Amount	: 1.0915g	%Solids	: 96
Digestion Method	:	Date Digested	: 10/23/25

CAS NO.	Parameter	mg/kg Results	RL	MDL	Qualifier
57-12-5	Cyanide, Total	ND	0.96	0.20	V U5

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Form 1
WETCHEM

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-12	Date Collected	: 10/16/25 09:25
Client ID	: B-32_6.0-7.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/28/25 16:22
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN102825-C	Instrument ID	: LACHAT6
Sample Amount	: 1.0029g	%Solids	: 96
Digestion Method	:	Date Digested	: 10/28/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
57-12-5	Cyanide, Total	ND	1.0	0.22	U

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Form 1
WETCHEM

Client	: C.T. Male Associates	Lab Number	: L2566083
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566083-34	Date Collected	: 10/16/25 00:00
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 10/30/25 10:09
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JER
Lab File ID	: TCN103025-B	Instrument ID	: LACHAT
Sample Amount	: 1.0653g	%Solids	: 95
Digestion Method	:	Date Digested	: 10/29/25

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
57-12-5	Cyanide, Total	ND	0.99	0.21	U

MT 12/4/25

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
HV REGIONAL AIRPORT, POUGHKEEPSIE, NEW YORK

Client: C.T. Male Associates, Latham, New York
SDG: L2566328
Laboratory: Pace Analytical Services, Mansfield, Massachusetts
Site: HV Regional Airport, Poughkeepsie, New York
Date: December 4, 2025

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	SG-1	L2566328-01	Air
2	FD01 251016	L2566328-02	Air
3	SG-2	L2566328-03	Air

A Data Usability Summary Review was performed on the analytical data for three air samples collected on October 17, 2025 by CT Male at the HV Regional Airport site in Poughkeepsie, New York. The samples were analyzed under "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition January 1999, EPA/625/R-96/010B", Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)".

Specific method references are as follows:

Analysis	*Method References*
VOCs	USEPA Method TO-15

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-31, Revision 6, September 2016: Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15.

The following items/criteria were reviewed for this report:

Organics

- Data Completeness
- Cover letter, Narrative, and Data Reporting Forms
- Canister Certification Blanks
- Canister Certification Pressures Differences
- Chains-of-Custody and Traffic Reports
- Holding Times and sample preservation
- Laboratory Control Sample (LCS) recoveries

- GC/MS Tuning
- Method and Field Blank Contamination
- Initial and Continuing Calibration Summaries
- Compound Quantitation
- Internal Standard (IS) Area Performance
- Field Duplicate Sample Precision

Data Usability Assessment

There were no rejections of data.

The data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contamination and actions from other exceedances of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (VOC)

Cover letter, Narrative, and Data Reporting Forms

- All criteria were met.

Canister Certification Blanks

- The batch blank checks were non-detect or < RL.

Canister Certification Pressures Differences

- All criteria were met.

Chains-of-Custody and Traffic Reports

- All criteria were met.

Holding Times

- All samples were analyzed within 30 days for air samples.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

GC/MS Tuning

- All criteria were met.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC samples were not collected.

Initial Calibration

- All %RSD and mean RRF criteria were met.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF criteria.

Compound Quantitation

- Samples 1 and 2 exhibited a high concentration of 2-butanone over the instrument calibration range and was flagged (E) by the laboratory. The samples were diluted and reanalyzed and the dilution results for this compound should be used for reporting purposes.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate sample results are summarized below. The precision was unacceptable for toluene in the field duplicate pair. These results were qualified estimated (J).

Compound	SG-1 ug/m³	FD01_251016 ug/m³	RPD	Qualifier
Dichlorodifluoromethane	2.05	1.98	3%	None
Chloromethane	0.601	0.789	27%	
Ethanol	230	166	32%	
Acetone	786	694	12%	
Isopropanol	4.62	3.64	24%	
tert-Butyl Alcohol	12.7	9.70	27%	
Carbon Disulfide	3.58	3.11	14%	
2-Butanone	1020	1150	12%	
n-Hexane	5.92	5.85	1%	
Benzene	2.78	3.01	8%	
Cyclohexane	1.75	1.78	2%	
2,2,4-Trimethylpentane	11.1	11.6	4%	
Heptane	3.17	4.63	37%	
Toluene	7.12	15.1	72%	J
2-Hexanone	ND	4.96	NC	None
Tetrachloroethene	ND	2.03	NC	
p/m-Xylene	ND	1.76	NC	
1,3-Dichlorobenzene	1.85	1.93	4%	

Please contact the undersigned at (561) 475-2000 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 12/8/25

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limits is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-01	Date Collected	: 10/17/25 10:35
Client ID	: SG-1	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:21
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266383	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-71-8	Dichlorodifluoromethane	0.415	0.200	--	2.05	0.989	--	
74-87-3	Chloromethane	0.291	0.200	--	0.601	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	122	5.00	--	230	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	331	1.00	--	786	2.38	--	
75-69-4	Trichlorofluoromethane	ND	0.200	--	ND	1.12	--	U
67-63-0	Isopropanol	1.88	1.00	--	4.62	2.46	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	4.20	0.500	--	12.7	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	1.15	0.200	--	3.58	0.623	--	
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
~~78-93-3~~	~~2-Butanone~~	~~332~~	~~0.500~~	--	~~979~~	~~1.47~~	--	E
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U

use Dilution

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-01	Date Collected	: 10/17/25 10:35
Client ID	: SG-1	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:21
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266383	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	1.68	0.200	--	5.92	0.705	--	
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U
71-43-2	Benzene	0.870	0.200	--	2.78	0.639	--	
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	0.507	0.200	--	1.75	0.688	--	
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	ND	0.200	--	ND	1.07	--	U
540-84-1	2,2,4-Trimethylpentane	2.37	0.200	--	11.1	0.934	--	
142-82-5	Heptane	0.774	0.200	--	3.17	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	1.89	0.200	--	7.12	0.754	--	J
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	ND	0.200	--	ND	1.36	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-01	Date Collected	: 10/17/25 10:35
Client ID	: SG-1	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:21
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266383	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	0.308	0.200	--	1.85	1.20	--	
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
91-20-3	Naphthalene	ND	0.190	--	ND	0.996	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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/DL

Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-01D	Date Collected	: 10/17/25 10:35
Client ID	: SG-1	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/27/25 07:30
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 10
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266395	Instrument ID	: AIRLAB26
Sample Amount	: 25.0 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
78-93-3	2-Butanone	345	5.00	--	1020	14.7	--	

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-02	Date Collected	: 10/17/25 10:35
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:54
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266384	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-71-8	Dichlorodifluoromethane	0.401	0.200	--	1.98	0.989	--	
74-87-3	Chloromethane	0.382	0.200	--	0.789	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	88.3	5.00	--	166	9.42	--	
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	292	1.00	--	694	2.38	--	
75-69-4	Trichlorofluoromethane	ND	0.200	--	ND	1.12	--	U
67-63-0	Isopropanol	1.48	1.00	--	3.64	2.46	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	3.20	0.500	--	9.70	1.52	--	
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	1.00	0.200	--	3.11	0.623	--	
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
~~78-93-3~~	~~2-Butanone~~	~~326~~	~~0.500~~	--	~~961~~	~~1.47~~	--	E
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U

use Dilution

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-02	Date Collected	: 10/17/25 10:35
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:54
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266384	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	1.66	0.200	--	5.85	0.705	--	
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U
71-43-2	Benzene	0.941	0.200	--	3.01	0.639	--	
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	0.516	0.200	--	1.78	0.688	--	
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	ND	0.200	--	ND	1.07	--	U
540-84-1	2,2,4-Trimethylpentane	2.49	0.200	--	11.6	0.934	--	
142-82-5	Heptane	1.13	0.200	--	4.63	0.820	--	
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	4.01	0.200	--	15.1	0.754	--	J
591-78-6	2-Hexanone	1.21	0.200	--	4.96	0.820	--	
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	0.299	0.200	--	2.03	1.36	--	
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	0.406	0.400	--	1.76	1.74	--	
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-02	Date Collected	: 10/17/25 10:35
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 20:54
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266384	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	0.321	0.200	--	1.93	1.20	--	
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
91-20-3	Naphthalene	ND	0.190	--	ND	0.996	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

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2DL

Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-02D	Date Collected	: 10/17/25 10:35
Client ID	: FD01_251016	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/27/25 08:08
Sample Matrix	: SOIL_VAPOR	Dilution Factor	: 10
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266396	Instrument ID	: AIRLAB26
Sample Amount	: 25.0 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
78-93-3	2-Butanone	390	5.00	--	1150	14.7	--	

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-03	Date Collected	: 10/17/25 09:55
Client ID	: SG-2	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 18:08
Sample Matrix	: AIR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266379	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
75-71-8	Dichlorodifluoromethane	0.452	0.200	--	2.24	0.989	--	
74-87-3	Chloromethane	0.489	0.200	--	1.01	0.413	--	
76-14-2	Freon-114	ND	0.200	--	ND	1.40	--	U
75-01-4	Vinyl chloride	ND	0.200	--	ND	0.511	--	U
106-99-0	1,3-Butadiene	ND	0.200	--	ND	0.442	--	U
74-83-9	Bromomethane	ND	0.200	--	ND	0.777	--	U
75-00-3	Chloroethane	ND	0.200	--	ND	0.528	--	U
64-17-5	Ethanol	ND	5.00	--	ND	9.42	--	U
593-60-2	Vinyl bromide	ND	0.200	--	ND	0.874	--	U
67-64-1	Acetone	2.75	1.00	--	6.53	2.38	--	
75-69-4	Trichlorofluoromethane	ND	0.200	--	ND	1.12	--	U
67-63-0	Isopropanol	2.85	1.00	--	7.01	2.46	--	
75-35-4	1,1-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-65-0	Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--	U
75-09-2	Methylene chloride	ND	0.500	--	ND	1.74	--	U
107-05-1	3-Chloropropene	ND	0.200	--	ND	0.626	--	U
75-15-0	Carbon disulfide	ND	0.200	--	ND	0.623	--	U
76-13-1	Freon-113	ND	0.200	--	ND	1.53	--	U
156-60-5	trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
75-34-3	1,1-Dichloroethane	ND	0.200	--	ND	0.809	--	U
1634-04-4	Methyl tert butyl ether	ND	0.200	--	ND	0.721	--	U
78-93-3	2-Butanone	ND	0.500	--	ND	1.47	--	U
156-59-2	cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--	U
141-78-6	Ethyl Acetate	ND	0.500	--	ND	1.80	--	U
67-66-3	Chloroform	ND	0.200	--	ND	0.977	--	U
109-99-9	Tetrahydrofuran	ND	0.500	--	ND	1.47	--	U

MT 12/4/25

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Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-03	Date Collected	: 10/17/25 09:55
Client ID	: SG-2	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 18:08
Sample Matrix	: AIR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266379	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
107-06-2	1,2-Dichloroethane	ND	0.200	--	ND	0.809	--	U
110-54-3	n-Hexane	0.552	0.200	--	1.95	0.705	--	
71-55-6	1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--	U
71-43-2	Benzene	ND	0.200	--	ND	0.639	--	U
56-23-5	Carbon tetrachloride	ND	0.200	--	ND	1.26	--	U
110-82-7	Cyclohexane	ND	0.200	--	ND	0.688	--	U
78-87-5	1,2-Dichloropropane	ND	0.200	--	ND	0.924	--	U
75-27-4	Bromodichloromethane	ND	0.200	--	ND	1.34	--	U
123-91-1	1,4-Dioxane	ND	0.200	--	ND	0.721	--	U
79-01-6	Trichloroethene	ND	0.200	--	ND	1.07	--	U
540-84-1	2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--	U
142-82-5	Heptane	ND	0.200	--	ND	0.820	--	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
108-10-1	4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--	U
79-00-5	1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--	U
108-88-3	Toluene	ND	0.200	--	ND	0.754	--	U
591-78-6	2-Hexanone	ND	0.200	--	ND	0.820	--	U
124-48-1	Dibromochloromethane	ND	0.200	--	ND	1.70	--	U
106-93-4	1,2-Dibromoethane	ND	0.200	--	ND	1.54	--	U
127-18-4	Tetrachloroethene	ND	0.200	--	ND	1.36	--	U
108-90-7	Chlorobenzene	ND	0.200	--	ND	0.921	--	U
100-41-4	Ethylbenzene	ND	0.200	--	ND	0.869	--	U
179601-23-1	p/m-Xylene	ND	0.400	--	ND	1.74	--	U
75-25-2	Bromoform	ND	0.200	--	ND	2.07	--	U
100-42-5	Styrene	ND	0.200	--	ND	0.852	--	U

MT 12/4/25

Results Summary
Form 1
Volatile Organics in Air

Client	: C.T. Male Associates	Lab Number	: L2566328
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2566328-03	Date Collected	: 10/17/25 09:55
Client ID	: SG-2	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY WARP FALLS, NY	Date Analyzed	: 10/26/25 18:08
Sample Matrix	: AIR	Dilution Factor	: 1
Analytical Method	: 48,TO-15	Analyst	: KJD
Lab File ID	: R266379	Instrument ID	: AIRLAB26
Sample Amount	: 250 ml	GC Column	: RTX-1

		ppbV			ug/m3			
CAS NO.	Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--	U
95-47-6	o-Xylene	ND	0.200	--	ND	0.869	--	U
622-96-8	4-Ethyltoluene	ND	0.200	--	ND	0.983	--	U
108-67-8	1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
95-63-6	1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--	U
100-44-7	Benzyl chloride	ND	0.200	--	ND	1.04	--	U
541-73-1	1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
106-46-7	1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
95-50-1	1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--	U
120-82-1	1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--	U
91-20-3	Naphthalene	ND	0.190	--	ND	0.996	--	U
87-68-3	Hexachlorobutadiene	ND	0.200	--	ND	2.13	--	U

MT 12/4/25

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
HV REGIONAL AIRPORT, POUGHKEEPSIE, NEW YORK

Client: C.T. Male Associates, Latham, New York
SDG: L2573310
Laboratory: Pace Analytical Services, Westborough, Massachusetts
Site: HV Regional Airport, Poughkeepsie, New York
Date: December 5, 2025

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	B-33_0.0-0.17	L2573310-01	Soil
2	B-33_0.17-1.0	L2573310-02	Soil
3	B-34_0.0-0.17	L2573310-03	Soil
4	B-34_0.17-1.0	L2573310-04	Soil
5	B-35_0.0-0.17	L2573310-05	Soil
6	B-35_0.17-1.0	L2573310-06	Soil

A Data Usability Summary Review was performed on the analytical data for six soil samples collected on October 16, 2025 by CT Male at the HV Regional Airport site in Poughkeepsie, New York. The samples were analyzed under Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis	*Method References*
PFAS	USEPA Method 1633A

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFAS) Analyzed Using EPA Method 537, November 2018;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries

- Laboratory Control Sample (LCS) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Tentatively Identified Compounds (TICs)
- Field Duplicate sample precision

Data Usability Assessment

There were no rejections of data.

The data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contamination and actions from other exceedances of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Perfluorinated Alkyl Substances (PFAS)

Holding Times

- All samples were analyzed outside the 3-day holding time for NFDHA. The results for this compound were qualified (UJ). All other holding time criteria were met.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients and mean RRF criteria were met.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF criteria.

Method Blank

- The following table lists method blanks with contamination and the samples associated with the blanks that had results qualified as a consequence of the blank contamination. Detected sample concentrations less than ten times (10x) the highest associated blank (after taking sample dilution levels, percent moisture and sample volume into account) are negated and qualified with a (U).

Blank ID	Compound	Conc. ng/g	Qualifier	Affected Samples
WG2145068-1	PFOS	0.068	U	1-3, 5, 6

Field Blank

- Field QC samples were not collected.

Surrogate Spike Recoveries

- The samples exhibited acceptable surrogate percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Sample 5 was flagged (F) by the laboratory for PFDA indicating an ion ratio deficiency. These results were qualified estimated (J).

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (561) 475-2000 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 12/8/25

Nancy Weaver
Senior Chemist

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limits is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-01	Date Collected	: 10/16/25 12:47
Client ID	: B-33_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:01
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_25	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 94
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.813	0.106	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.067	0.406	0.041	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.203	0.037	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.813	0.156	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.049	0.203	0.035	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.203	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.203	0.073	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.203	0.035	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.222	0.203	0.045	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.813	0.116	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.203	0.035	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.167	0.203	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.453	0.203	0.047	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.071	0.203	0.033	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.813	0.240	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.203	0.096	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.203	0.098	U

MT 12/5/25

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-01	Date Collected	: 10/16/25 12:47
Client ID	: B-33_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:01
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_25	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 94
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.085	0.203	0.057	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.203	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.203	0.039	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.203	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.203	0.037	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.203	0.033	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.203	0.043	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.813	0.163	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.813	0.289	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.203	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.813	0.154	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.813	0.246	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.203	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.203	0.067	U

MT 12/5/25

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-01	Date Collected	: 10/16/25 12:47
Client ID	: B-33_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:01
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_25	Analyst	: ANH
Sample Amount	: 2.1 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 94
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.03	0.254	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.03	0.246	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.406	0.037	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.406	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.406	0.049	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.406	0.122	U UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	1.02	0.352	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	5.08	0.943	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	5.08	1.67	U

MM 12/5/25

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-02	Date Collected	: 10/16/25 12:50
Client ID	: B-33_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:10
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_26	Analyst	: ANH
Sample Amount	: 2.23 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.791	0.103	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.057	0.396	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.198	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.791	0.152	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.198	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.198	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.198	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.198	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.115	0.198	0.044	J
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.791	0.113	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.198	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	0.198	0.024	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.227	0.198	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.198	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.791	0.233	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.198	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.198	0.095	U

MT 12/5/25

2

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-02	Date Collected	: 10/16/25 12:50
Client ID	: B-33_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:10
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_26	Analyst	: ANH
Sample Amount	: 2.23 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.198	0.055	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.198	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.198	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.198	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.198	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.198	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.198	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.791	0.158	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.791	0.281	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.198	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.791	0.150	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.791	0.239	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.198	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.198	0.065	U

MM 12/5/25

2

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-02	Date Collected	: 10/16/25 12:50
Client ID	: B-33_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:10
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_26	Analyst	: ANH
Sample Amount	: 2.23 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.98	0.247	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.98	0.239	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.396	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.396	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.396	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.396	0.119	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	0.989	0.342	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	4.94	0.918	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	4.94	1.62	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-03	Date Collected	: 10/16/25 15:16
Client ID	: B-34_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:19
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_27	Analyst	: ANH
Sample Amount	: 2.67 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 75
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.115	0.795	0.103	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.060	0.397	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.199	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.795	0.153	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.199	0.034	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.199	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	0.082	0.199	0.072	J
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.199	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.276	0.199	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.795	0.113	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.199	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.216	0.199	0.024	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.628	0.199	0.046	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.133	0.199	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.795	0.234	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.199	0.093	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.199	0.095	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-03	Date Collected	: 10/16/25 15:16
Client ID	: B-34_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:19
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_27	Analyst	: ANH
Sample Amount	: 2.67 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 75
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.171	0.199	0.056	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.199	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.199	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.199	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.076	0.199	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	0.064	0.199	0.032	J
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.199	0.042	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.795	0.159	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.795	0.282	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.199	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.795	0.151	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.795	0.240	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.199	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.199	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-03	Date Collected	: 10/16/25 15:16
Client ID	: B-34_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:19
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_27	Analyst	: ANH
Sample Amount	: 2.67 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 75
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.99	0.248	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.99	0.240	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.397	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.397	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.397	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.397	0.119	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	0.993	0.344	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	4.97	0.922	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	4.97	1.63	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-04	Date Collected	: 10/16/25 15:19
Client ID	: B-34_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:28
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_28	Analyst	: ANH
Sample Amount	: 2.58 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 77
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.431	0.801	0.104	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.338	0.401	0.040	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.200	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.801	0.154	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.200	0.200	0.034	
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.200	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	0.332	0.200	0.072	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	0.066	0.200	0.034	J
335-67-1	Perfluorooctanoic Acid (PFOA)	0.841	0.200	0.044	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.801	0.114	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.200	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.386	0.200	0.024	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	1.03	0.200	0.046	
335-76-2	Perfluorodecanoic Acid (PFDA)	0.182	0.200	0.032	J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.801	0.236	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.200	0.094	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.200	0.096	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-04	Date Collected	: 10/16/25 15:19
Client ID	: B-34_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:28
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_28	Analyst	: ANH
Sample Amount	: 2.58 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 77
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.292	0.200	0.056	
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.200	0.056	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.200	0.038	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.200	0.078	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	0.110	0.200	0.036	J
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	0.108	0.200	0.032	J
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	0.092	0.200	0.042	J
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.801	0.160	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.801	0.284	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.200	0.058	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.801	0.152	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.801	0.242	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.200	0.060	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.200	0.066	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-04	Date Collected	: 10/16/25 15:19
Client ID	: B-34_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:28
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_28	Analyst	: ANH
Sample Amount	: 2.58 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 77
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.00	0.250	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.00	0.242	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.401	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.401	0.052	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.401	0.048	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.401	0.120	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	1.00	0.346	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	5.01	0.929	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	5.01	1.64	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-05	Date Collected	: 10/16/25 15:26
Client ID	: B-35_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:37
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_29	Analyst	: ANH
Sample Amount	: 2.31 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	0.785	0.102	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	0.393	0.039	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.196	0.035	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.785	0.151	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	0.196	0.033	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.196	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	0.196	0.071	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.196	0.033	U
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	0.196	0.043	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.785	0.112	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.196	0.033	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.069	0.196	0.024	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.290	0.196	0.045	U
335-76-2	Perfluorodecanoic Acid (PFDA)	0.071	0.196	0.031	JF J
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.785	0.232	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.196	0.092	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.196	0.094	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-05	Date Collected	: 10/16/25 15:26
Client ID	: B-35_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:37
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_29	Analyst	: ANH
Sample Amount	: 2.31 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	0.079	0.196	0.055	J
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.196	0.055	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.196	0.037	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.196	0.077	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.196	0.035	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.196	0.031	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.196	0.041	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.785	0.157	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.785	0.279	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.196	0.057	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.785	0.149	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.785	0.238	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.196	0.059	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.196	0.065	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-05	Date Collected	: 10/16/25 15:26
Client ID	: B-35_0.0-0.17	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:37
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_29	Analyst	: ANH
Sample Amount	: 2.31 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 88
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	1.96	0.245	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	1.96	0.238	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.393	0.035	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.393	0.051	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.393	0.047	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.393	0.118	U/UJ
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	0.982	0.340	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	4.91	0.911	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	4.91	1.61	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-06	Date Collected	: 10/16/25 15:28
Client ID	: B-35_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:46
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_30	Analyst	: ANH
Sample Amount	: 2.15 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
375-22-4	Perfluorobutanoic Acid (PFBA)	0.154	0.810	0.105	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	0.097	0.405	0.041	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	0.202	0.036	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	0.810	0.156	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	0.063	0.202	0.034	J
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	0.202	0.028	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	0.128	0.202	0.073	J
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	0.202	0.034	U
335-67-1	Perfluorooctanoic Acid (PFOA)	0.678	0.202	0.045	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	0.810	0.115	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.202	0.034	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.360	0.202	0.024	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	0.401	0.202	0.047	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	0.202	0.032	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	0.810	0.239	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	0.202	0.095	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	0.202	0.097	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-06	Date Collected	: 10/16/25 15:28
Client ID	: B-35_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:46
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_30	Analyst	: ANH
Sample Amount	: 2.15 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	0.202	0.057	U
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	0.202	0.057	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	0.202	0.039	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.202	0.079	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	0.202	0.036	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	0.202	0.032	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	0.202	0.043	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	0.810	0.162	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	0.810	0.287	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	0.202	0.059	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	0.810	0.154	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	0.810	0.245	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	0.202	0.061	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	0.202	0.067	U

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Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: C.T. Male Associates	Lab Number	: L2573310
Project Name	: HVRA	Project Number	: 18.8090
Lab ID	: L2573310-06	Date Collected	: 10/16/25 15:28
Client ID	: B-35_0.17-1.0	Date Received	: 10/17/25
Sample Location	: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY	Date Analyzed	: 11/23/25 16:46
Sample Matrix	: SOIL	Date Extracted	: 11/21/25
Analytical Method	: 168,1633A	Dilution Factor	: 1
Lab File ID	: SCI11_251123_30	Analyst	: ANH
Sample Amount	: 2.15 g	Instrument ID	: LCMS11
Extraction Method	: EPA 1633	GC Column	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 3 uL

CAS NO.	Parameter	ng/g Results	RL	MDL	Qualifier
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	2.02	0.253	U
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	2.02	0.245	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	0.405	0.036	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	0.405	0.053	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	0.405	0.049	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	0.405	0.121	U VS
356-02-5	3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	1.01	0.350	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	5.06	0.939	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	5.06	1.66	U

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APPENDIX F

CAMP Data

Maintenance and Storage Buildings PCI Investigation
Downwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Avg(VOC (TWA), ppm, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 7:54:00 AM	0.002	0	0	0.002	0	0	0.203	0	0	0
10/16/2025, 7:55:00 AM	0.001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 7:56:00 AM	0.0007	0	0	0	0	0	0.203	0	0	0
10/16/2025, 7:57:00 AM	0.0005	0	0	0	0	0	0.203	0	0	0
10/16/2025, 7:58:00 AM	0.0004	0	0	0	0	0	0.203	0	0	0
10/16/2025, 7:59:00 AM	0.0003	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:00:00 AM	0.0003	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:01:00 AM	0.0003	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:02:00 AM	0.0002	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:03:00 AM	0.0002	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:04:00 AM	0.0002	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:05:00 AM	0.0002	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:06:00 AM	0.0002	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:07:00 AM	0.0001	0	0	0	0	0	0.203	0.001	0	0
10/16/2025, 8:08:00 AM	0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:09:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:10:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:11:00 AM	-0.0001	0	0	-0.001	0	0	0.203	0	0	0
10/16/2025, 8:12:00 AM	-0.0001	0	0	-0.001	0	0	0.203	0	0	0
10/16/2025, 8:13:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:14:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:15:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:16:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:17:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:18:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:19:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:20:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:21:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:22:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:23:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:24:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:25:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:26:00 AM	-0.0001	0	0	0	0	0	0.203	0	0	0

10/16/2025, 8:27:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:28:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:29:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:30:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:31:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:32:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:33:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:34:00 AM	0	0	0	0	0	0	0.203	0	0	0
10/16/2025, 8:35:00 AM	0	0	0	0	0	0	0.203	0	0	0.001
10/16/2025, 8:36:00 AM	0	0	0	0	0	0	0.203	0	0	0.005
10/16/2025, 8:37:00 AM	0	0	0	0	0	0	0.203	0	0	0.002
10/16/2025, 8:38:00 AM	0	0	0	0	0	0	0.203	0	0	0.006
10/16/2025, 8:39:00 AM	0.0001	0	0	0.001	0	0	0.203	0	0	0.01
10/16/2025, 8:40:00 AM	0.0001	0	0	0	0	0	0.203	0.001	0	0.012
10/16/2025, 8:41:00 AM	0.0001	0	0	0.001	0	0	0.203	0.001	0	0.007
10/16/2025, 8:42:00 AM	0.0002	0	0	0.001	0	0	0.203	0.002	0	0.01
10/16/2025, 8:43:00 AM	0.0002	0	0	0	0	0	0.203	0.003	0	0.012
10/16/2025, 8:44:00 AM	0.0002	0	0	0	0	0	0.203	0.003	0	0.016
10/16/2025, 8:45:00 AM	0.0002	0	0	0	0	0	0.203	0.004	0	0.013
10/16/2025, 8:46:00 AM	0.0002	0	0	0	0	0	0.203	0.005	0	0.018
10/16/2025, 8:47:00 AM	0.0002	0	0	0	0	0	0.203	0.006	0	0.019
10/16/2025, 8:48:00 AM	0.0002	0	0	0	0	0	0.203	0.007	0	0.015
10/16/2025, 8:49:00 AM	0.0002	0	0	0	0	0	0.203	0.008	0	0.017
10/16/2025, 8:50:00 AM	0.0002	0	0	0	0	0	0.203	0.01	0	0.014
10/16/2025, 8:51:00 AM	0.0002	0	0	0	0	0	0.203	0.011	0	0.015
10/16/2025, 8:52:00 AM	0.0002	0	0	0	0	0	0.203	0.012	0	0.018
10/16/2025, 8:53:00 AM	0.0002	0	0	0	0	0	0.203	0.013	0	0.025
10/16/2025, 8:54:00 AM	0.0001	0	0	0	0	0	0.203	0.014	0	0.022
10/16/2025, 8:55:00 AM	0.0001	0	0	0	0	0	0.203	0.015	0	0.02
10/16/2025, 8:56:00 AM	0.0001	0	0	0	0	0	0.203	0.016	0	0.021
10/16/2025, 8:57:00 AM	0	0	0	0	0	0	0.203	0.016	0	0.023
10/16/2025, 8:58:00 AM	0	0	0	0	0	0	0.203	0.017	0	0.022
10/16/2025, 8:59:00 AM	0	0	0	0	0	0	0.203	0.018	0	0.026
10/16/2025, 9:00:00 AM	0	0	0	0	0	0	0.203	0.019	0	0.027
10/16/2025, 9:01:00 AM	0	0	0	0	0	0	0.203	0.02	0	0.022
10/16/2025, 9:02:00 AM	0	0	0	0	0	0	0.203	0.021	0	0.033

10/16/2025, 9:03:00 AM	0	0	0	0	0	0	0.203	0.021	0	0.033
10/16/2025, 9:04:00 AM	0	0	0.0001	0	0	0	0.203	0.022	0.001	0.029
10/16/2025, 9:05:00 AM	0	0	0.0001	0	0	0	0.203	0.023	0.001	0.025
10/16/2025, 9:06:00 AM	0	0	0.0002	0	0	0	0.203	0.024	0.001	0.028
10/16/2025, 9:07:00 AM	0	0	0.0003	0	0	0	0.203	0.024	0.001	0.038
10/16/2025, 9:08:00 AM	0	0	0.0003	0	0	0	0.203	0.025	0.001	0.028
10/16/2025, 9:09:00 AM	0	0	0.0004	0	0	0	0.203	0.026	0.001	0.018
10/16/2025, 9:10:00 AM	0	0	0.0005	0	0	0	0.203	0.026	0.001	0.04
10/16/2025, 9:11:00 AM	0	0	0.0005	0	0	0	0.203	0.027	0.001	0.038
10/16/2025, 9:12:00 AM	0	0	0.0006	0	0	0	0.203	0.027	0.001	0.035
10/16/2025, 9:13:00 AM	0	0	0.0007	0	0	0	0.203	0.028	0.001	0.031
10/16/2025, 9:14:00 AM	0	0	0.0007	0	0	0	0.203	0.028	0.001	0.041
10/16/2025, 9:15:00 AM	0	0	0.0008	0	0	0	0.203	0.029	0.001	0.046
10/16/2025, 9:16:00 AM	0	0	0.0009	0	0	0	0.203	0.029	0.001	0.039
10/16/2025, 9:17:00 AM	0	0	0.0009	0	0	0	0.203	0.03	0.001	0.04
10/16/2025, 9:18:00 AM	0	0	0.001	0	0	0	0.203	0.032	0.001	0.044
10/16/2025, 9:19:00 AM	0	0	0.0011	0	0	0	0.203	0.032	0.002	0.041
10/16/2025, 9:20:00 AM	0	0	0.0011	0	0	0	0.203	0.033	0.002	0.046
10/16/2025, 9:21:00 AM	0	0	0.0012	0	0	0	0.203	0.034	0.002	0.051
10/16/2025, 9:22:00 AM	0	0	0.0013	0	0	0	0.203	0.036	0.002	0.05
10/16/2025, 9:23:00 AM	0.0001	0	0.0013	0.001	0	0	0.203	0.037	0.002	0.052
10/16/2025, 9:24:00 AM	0.0001	0	0.0014	0	0	0	0.203	0.039	0.002	0.047
10/16/2025, 9:25:00 AM	0.0001	0	0.0015	0	0	0	0.203	0.04	0.002	0.054
10/16/2025, 9:26:00 AM	0.0001	0	0.0015	0	0	0	0.203	0.041	0.002	0.046
10/16/2025, 9:27:00 AM	0.0001	0	0.0016	0	0	0	0.203	0.042	0.002	0.051
10/16/2025, 9:28:00 AM	0.0001	0	0.0017	0	0	0	0.203	0.044	0.002	0.064
10/16/2025, 9:29:00 AM	0.0001	0	0.0018	0	0	0	0.203	0.046	0.003	0.064
10/16/2025, 9:30:00 AM	0.0001	0	0.0019	0	0	0	0.203	0.047	0.003	0.065
10/16/2025, 9:31:00 AM	0.0001	0	0.0021	0	0	0	0.203	0.049	0.003	0.079
10/16/2025, 9:32:00 AM	0.0001	0	0.0022	0	0	0	0.203	0.051	0.003	0.084
10/16/2025, 9:33:00 AM	0.0001	0	0.0023	0	0	0	0.203	0.053	0.003	0.079
10/16/2025, 9:34:00 AM	0.0001	0	0.0024	0	0	0	0.203	0.056	0.003	0.079
10/16/2025, 9:35:00 AM	0.0001	0	0.0025	0	0	0	0.203	0.059	0.003	0.089
10/16/2025, 9:36:00 AM	0.0001	0	0.0026	0	0	0	0.203	0.061	0.004	0.094
10/16/2025, 9:37:00 AM	0.0001	0	0.0027	0	0	0	0.203	0.064	0.004	0.088
10/16/2025, 9:38:00 AM	0	0	0.0029	0	0	0	0.203	0.066	0.004	0.094

10/16/2025, 9:39:00 AM	0	0	0.003	0	0	0	0.203	0.069	0.004	0.09
10/16/2025, 9:40:00 AM	0	0	0.0031	0	0	0	0.203	0.071	0.004	0.094
10/16/2025, 9:41:00 AM	0	0	0.0033	0	0	0	0.203	0.074	0.005	0.09
10/16/2025, 9:42:00 AM	0	0	0.0035	0	0	0	0.203	0.077	0.005	0.097
10/16/2025, 9:43:00 AM	0	0	0.0037	0	0	0	0.203	0.08	0.005	0.105
10/16/2025, 9:44:00 AM	0.0001	0	0.0039	0.001	0	0	0.203	0.082	0.005	0.098
10/16/2025, 9:45:00 AM	0.0001	0	0.004	0	0	0	0.203	0.085	0.005	0.102
10/16/2025, 9:46:00 AM	0.0001	0	0.0042	0	0	0	0.203	0.088	0.006	0.101
10/16/2025, 9:47:00 AM	0.0001	0	0.0044	0	0	0	0.203	0.09	0.006	0.1
10/16/2025, 9:48:00 AM	0.0001	0	0.0046	0	0	0	0.203	0.092	0.006	0.105
10/16/2025, 9:49:00 AM	0.0001	0	0.0048	0	0	0	0.203	0.093	0.006	0.102
10/16/2025, 9:50:00 AM	0.0001	0	0.005	0	0	0	0.203	0.094	0.006	0.108
10/16/2025, 9:51:00 AM	0.0002	0	0.0052	0.002	0	0	0.203	0.096	0.007	0.113
10/16/2025, 9:52:00 AM	0.0002	0	0.0054	0	0	0	0.203	0.097	0.007	0.103
10/16/2025, 9:53:00 AM	0.0003	0	0.0056	0.002	0	0	0.203	0.099	0.007	0.101
10/16/2025, 9:54:00 AM	0.0003	0	0.0058	0	0	0	0.203	0.1	0.007	0.11
10/16/2025, 9:55:00 AM	0.0003	0	0.0061	0	0	0	0.203	0.101	0.008	0.108
10/16/2025, 9:56:00 AM	0.0003	0	0.0063	0	0	0	0.203	0.102	0.008	0.108
10/16/2025, 9:57:00 AM	0.0003	0	0.0065	0	0	0	0.203	0.103	0.008	0.105
10/16/2025, 9:58:00 AM	0.0003	0	0.0067	0	0	0	0.203	0.103	0.008	0.101
10/16/2025, 9:59:00 AM	0.0003	0	0.0069	0	0	0	0.203	0.104	0.008	0.103
10/16/2025, 10:00:00 AM	0.0004	0	0.0071	0.002	0	0	0.203	0.104	0.009	0.106
10/16/2025, 10:01:00 AM	0.0005	0	0.0073	0.001	0	0	0.203	0.104	0.009	0.099
10/16/2025, 10:02:00 AM	0.0005	0	0.0075	0	0	0	0.203	0.104	0.009	0.106
10/16/2025, 10:03:00 AM	0.0005	0	0.0077	0	0	0	0.203	0.104	0.009	0.104
10/16/2025, 10:04:00 AM	0.0005	0	0.008	0	0	0	0.203	0.104	0.01	0.102
10/16/2025, 10:05:00 AM	0.0005	0	0.0083	0	0	0	0.203	0.104	0.01	0.105
10/16/2025, 10:06:00 AM	0.0003	0	0.0085	0	0	0	0.203	0.104	0.01	0.104
10/16/2025, 10:07:00 AM	0.0003	0	0.0087	0	0	0	0.203	0.103	0.01	0.107
10/16/2025, 10:08:00 AM	0.0002	0	0.0089	0	0	0	0.203	0.103	0.01	0.104
10/16/2025, 10:09:00 AM	0.0003	0	0.0091	0.001	0	0	0.203	0.103	0.011	0.107
10/16/2025, 10:10:00 AM	0.0003	0	0.0093	0	0	0	0.203	0.103	0.011	0.109
10/16/2025, 10:11:00 AM	0.0003	0	0.0095	0	0	0	0.203	0.103	0.011	0.107
10/16/2025, 10:12:00 AM	0.0003	0	0.0097	0	0	0	0.203	0.103	0.011	0.107
10/16/2025, 10:13:00 AM	0.0003	0	0.0099	0	0	0	0.203	0.103	0.011	0.105
10/16/2025, 10:14:00 AM	0.0003	0	0.0102	0	0	0	0.203	0.103	0.012	0.106

10/16/2025, 10:15:00 AM	0.0001	0	0.0104	0	0	0	0.203	0.104	0.012	0.111
10/16/2025, 10:16:00 AM	0.0001	0	0.0106	0	0	0	0.203	0.104	0.012	0.108
10/16/2025, 10:17:00 AM	0.0001	0	0.0108	0	0	0	0.203	0.104	0.012	0.108
10/16/2025, 10:18:00 AM	0.0001	0	0.0111	0	0	0	0.203	0.104	0.013	0.11
10/16/2025, 10:19:00 AM	0.0001	0	0.0113	0	0	0	0.203	0.104	0.013	0.1
10/16/2025, 10:20:00 AM	0.0001	0	0.0115	0	0	0	0.203	0.104	0.013	0.108
10/16/2025, 10:21:00 AM	0.0001	0	0.0117	0	0	0	0.203	0.104	0.013	0.098
10/16/2025, 10:22:00 AM	0.0001	0	0.0119	0	0	0	0.203	0.105	0.013	0.107
10/16/2025, 10:23:00 AM	0.0001	0	0.0121	0	0	0	0.203	0.105	0.014	0.098
10/16/2025, 10:24:00 AM	0	0	0.0123	0	0	0	0.203	0.105	0.014	0.095
10/16/2025, 10:25:00 AM	0	0	0.0125	0	0	0	0.203	0.104	0.014	0.108
10/16/2025, 10:26:00 AM	0	0	0.0127	0	0	0	0.203	0.104	0.014	0.105
10/16/2025, 10:27:00 AM	0	0	0.0129	0	0	0	0.203	0.104	0.014	0.108
10/16/2025, 10:28:00 AM	0	0	0.0132	0	0	0	0.203	0.104	0.015	0.108
10/16/2025, 10:29:00 AM	0	0	0.0134	0	0	0	0.203	0.104	0.015	0.105
10/16/2025, 10:30:00 AM	0	0	0.0136	0	0	0	0.203	0.104	0.015	0.111
10/16/2025, 10:31:00 AM	0.0001	0	0.0138	0.001	0	0	0.203	0.104	0.015	0.112
10/16/2025, 10:32:00 AM	0.0001	0	0.0141	0	0	0	0.203	0.104	0.016	0.113
10/16/2025, 10:33:00 AM	0.0001	0	0.0143	0	0	0	0.203	0.105	0.016	0.113
10/16/2025, 10:34:00 AM	0.0001	0	0.0145	0	0	0	0.203	0.105	0.016	0.114
10/16/2025, 10:35:00 AM	0.0001	0	0.0147	0	0	0	0.203	0.106	0.016	0.108
10/16/2025, 10:36:00 AM	0.0001	0	0.0149	0	0	0	0.203	0.107	0.017	0.114
10/16/2025, 10:37:00 AM	0.0002	0	0.0152	0.002	0	0	0.203	0.107	0.017	0.111
10/16/2025, 10:38:00 AM	0.0002	0	0.0154	0	0	0	0.203	0.108	0.017	0.115
10/16/2025, 10:39:00 AM	0.0002	0	0.0156	0	0	0	0.203	0.108	0.017	0.115
10/16/2025, 10:40:00 AM	0.0002	0	0.0158	0	0	0	0.203	0.109	0.017	0.113
10/16/2025, 10:41:00 AM	0.0002	0	0.0161	0	0	0	0.203	0.11	0.018	0.107
10/16/2025, 10:42:00 AM	0.0002	0	0.0163	0	0	0	0.203	0.11	0.018	0.111
10/16/2025, 10:43:00 AM	0.0002	0	0.0165	0	0	0	0.203	0.111	0.018	0.113
10/16/2025, 10:44:00 AM	0.0002	0	0.0167	0	0	0	0.203	0.111	0.018	0.107
10/16/2025, 10:45:00 AM	0.0002	0	0.017	0	0	0	0.203	0.111	0.019	0.11
10/16/2025, 10:46:00 AM	0.0001	0	0.0173	0	0	0	0.203	0.111	0.019	0.107
10/16/2025, 10:47:00 AM	0.0001	0	0.0175	0	0	0	0.203	0.111	0.019	0.11
10/16/2025, 10:48:00 AM	0.0001	0	0.0177	0	0	0	0.203	0.111	0.019	0.108
10/16/2025, 10:49:00 AM	0.0001	0	0.0179	0	0	0	0.203	0.111	0.02	0.112
10/16/2025, 10:50:00 AM	0.0001	0	0.0182	0	0	0	0.203	0.11	0.02	0.11

10/16/2025, 10:51:00 AM	0.0001	0	0.0184	0	0	0	0.203	0.11	0.02	0.105
10/16/2025, 10:52:00 AM	0	0	0.0186	0	0	0	0.203	0.11	0.02	0.111
10/16/2025, 10:53:00 AM	0	0	0.0188	0	0	0	0.203	0.11	0.02	0.108
10/16/2025, 10:54:00 AM	0	0	0.0191	0	0	0	0.203	0.11	0.021	0.11
10/16/2025, 10:55:00 AM	0	0	0.0193	0	0	0	0.203	0.109	0.021	0.108
10/16/2025, 10:56:00 AM	0	0	0.0195	0	0	0	0.203	0.109	0.021	0.111
10/16/2025, 10:57:00 AM	0	0	0.0197	0	0	0	0.203	0.109	0.021	0.105
10/16/2025, 10:58:00 AM	0	0	0.02	0	0	0	0.203	0.108	0.022	0.108
10/16/2025, 10:59:00 AM	0	0	0.0203	0	0	0	0.203	0.108	0.022	0.108
10/16/2025, 11:00:00 AM	0	0	0.0205	0	0	0	0.203	0.108	0.022	0.1
10/16/2025, 11:01:00 AM	0	0	0.0207	0	0	0	0.203	0.108	0.022	0.105
10/16/2025, 11:02:00 AM	0	0	0.0209	0	0	0	0.203	0.107	0.022	0.098
10/16/2025, 11:03:00 AM	0	0	0.0211	0	0	0	0.203	0.107	0.023	0.103
10/16/2025, 11:04:00 AM	0	0	0.0213	0	0	0	0.203	0.106	0.023	0.106
10/16/2025, 11:05:00 AM	0	0	0.0215	0	0	0	0.203	0.106	0.023	0.099
10/16/2025, 11:06:00 AM	0	0	0.0217	0	0	0	0.203	0.105	0.023	0.099
10/16/2025, 11:07:00 AM	0	0	0.022	0	0	0	0.203	0.105	0.024	0.101
10/16/2025, 11:08:00 AM	0	0	0.0223	0	0	0	0.203	0.104	0.024	0.104
10/16/2025, 11:09:00 AM	0	0	0.0225	0	0	0	0.203	0.103	0.024	0.108
10/16/2025, 11:10:00 AM	0	0	0.0227	0	0	0	0.203	0.103	0.024	0.1
10/16/2025, 11:11:00 AM	0	0	0.0229	0	0	0	0.203	0.103	0.024	0.097
10/16/2025, 11:12:00 AM	0	0	0.0231	0	0	0	0.203	0.103	0.025	0.106
10/16/2025, 11:13:00 AM	0	0	0.0233	0	0	0	0.203	0.102	0.025	0.101
10/16/2025, 11:14:00 AM	0	0	0.0235	0	0	0	0.203	0.102	0.025	0.099
10/16/2025, 11:15:00 AM	0	0	0.0237	0	0	0	0.203	0.102	0.025	0.105
10/16/2025, 11:16:00 AM	0	0	0.0239	0	0	0	0.203	0.101	0.025	0.103
10/16/2025, 11:17:00 AM	0	0	0.0242	0	0	0	0.203	0.102	0.026	0.102
10/16/2025, 11:18:00 AM	0	0	0.0244	0	0	0	0.203	0.102	0.026	0.102
10/16/2025, 11:19:00 AM	0	0	0.0246	0	0	0	0.203	0.101	0.026	0.095
10/16/2025, 11:20:00 AM	0	0	0.0248	0	0	0	0.203	0.101	0.026	0.102
10/16/2025, 11:21:00 AM	0	0	0.025	0	0	0	0.203	0.101	0.026	0.093
10/16/2025, 11:22:00 AM	0	0	0.0252	0	0	0	0.203	0.101	0.027	0.097
10/16/2025, 11:23:00 AM	0	0	0.0254	0	0	0	0.203	0.101	0.027	0.098
10/16/2025, 11:24:00 AM	0	0	0.0256	0	0	0	0.203	0.101	0.027	0.1
10/16/2025, 11:25:00 AM	0.0001	0	0.0258	0.001	0	0	0.203	0.1	0.027	0.105
10/16/2025, 11:26:00 AM	0.0001	0	0.0261	0.001	0	0	0.203	0.1	0.028	0.102

10/16/2025, 11:27:00 AM	0.0001	0	0.0263	0	0	0	0.203	0.1	0.028	0.097
10/16/2025, 11:28:00 AM	0.0001	0	0.0265	0	0	0	0.203	0.1	0.028	0.098
10/16/2025, 11:29:00 AM	0.0001	0	0.0267	0	0	0	0.203	0.099	0.028	0.099
10/16/2025, 11:30:00 AM	0.0001	0	0.0269	0	0	0	0.203	0.099	0.028	0.1
10/16/2025, 11:31:00 AM	0.0001	0	0.0271	0	0	0	0.203	0.099	0.029	0.098
10/16/2025, 11:32:00 AM	0.0001	0	0.0273	0	0	0	0.203	0.098	0.029	0.098
10/16/2025, 11:33:00 AM	0.0001	0	0.0275	0	0	0	0.203	0.098	0.029	0.089
10/16/2025, 11:34:00 AM	0.0001	0	0.0277	0	0	0	0.203	0.097	0.029	0.091
10/16/2025, 11:35:00 AM	0.0001	0	0.0279	0	0	0	0.203	0.097	0.029	0.088
10/16/2025, 11:36:00 AM	0.0001	0	0.0282	0	0	0	0.203	0.096	0.03	0.085
10/16/2025, 11:37:00 AM	0.0001	0	0.0284	0	0	0	0.203	0.096	0.03	0.089
10/16/2025, 11:38:00 AM	0.0001	0	0.0286	0	0	0	0.203	0.095	0.03	0.086
10/16/2025, 11:39:00 AM	0.0001	0	0.0288	0	0	0	0.203	0.094	0.03	0.091
10/16/2025, 11:40:00 AM	0.0001	0	0.029	0	0	0	0.203	0.093	0.03	0.086
10/16/2025, 11:41:00 AM	0	0	0.0291	0	0	0	0.203	0.093	0.03	0.097
10/16/2025, 11:42:00 AM	0	0	0.0293	0	0	0	0.203	0.092	0.031	0.088
10/16/2025, 11:43:00 AM	0	0	0.0295	0	0	0	0.203	0.091	0.031	0.093
10/16/2025, 11:44:00 AM	0.0001	0	0.0297	0.001	0	0	0.203	0.091	0.031	0.096
10/16/2025, 11:45:00 AM	0.0001	0	0.0299	0	0	0	0.203	0.091	0.031	0.09
10/16/2025, 11:46:00 AM	0.0001	0	0.0301	0	0	0	0.203	0.09	0.031	0.088
10/16/2025, 11:47:00 AM	0.0001	0	0.0303	0	0	0	0.203	0.09	0.032	0.092
10/16/2025, 11:48:00 AM	0.0001	0	0.0305	0	0	0	0.203	0.089	0.032	0.1
10/16/2025, 11:49:00 AM	0.0001	0	0.0307	0	0	0	0.203	0.089	0.032	0.098
10/16/2025, 11:50:00 AM	0.0001	0	0.0309	0	0	0	0.203	0.09	0.032	0.096
10/16/2025, 11:51:00 AM	0.0001	0	0.031	0	0	0	0.203	0.09	0.032	0.096
10/16/2025, 11:52:00 AM	0.0001	0	0.0312	0	0	0	0.203	0.09	0.033	0.094
10/16/2025, 11:53:00 AM	0.0001	0	0.0314	0	0	0	0.203	0.091	0.033	0.094
10/16/2025, 11:54:00 AM	0.0001	0	0.0316	0	0	0	0.203	0.091	0.033	0.097
10/16/2025, 11:55:00 AM	0.0001	0	0.0318	0	0	0	0.203	0.091	0.033	0.088
10/16/2025, 11:56:00 AM	0.0001	0	0.032	0	0	0	0.203	0.092	0.033	0.093
10/16/2025, 11:57:00 AM	0.0001	0	0.0321	0	0	0	0.203	0.092	0.033	0.095
10/16/2025, 11:58:00 AM	0.0001	0	0.0323	0	0	0	0.203	0.092	0.034	0.094
10/16/2025, 11:59:00 AM	0	0	0.0325	0	0	0	0.203	0.092	0.034	0.091
10/16/2025, 12:00:00 PM	0.0001	0	0.0327	0.001	0	0	0.203	0.092	0.034	0.098
10/16/2025, 12:01:00 PM	0.0001	0	0.0329	0	0	0	0.203	0.092	0.034	0.098
10/16/2025, 12:02:00 PM	0.0001	0	0.0331	0	0	0	0.203	0.093	0.034	0.096

10/16/2025, 12:03:00 PM	0.0001	0	0.0333	0	0	0	0.203	0.093	0.035	0.097
10/16/2025, 12:04:00 PM	0.0001	0	0.0335	0	0	0	0.203	0.093	0.035	0.1
10/16/2025, 12:05:00 PM	0.0001	0	0.0337	0	0	0	0.203	0.093	0.035	0.099
10/16/2025, 12:06:00 PM	0.0001	0	0.0339	0	0	0	0.203	0.094	0.035	0.102
10/16/2025, 12:07:00 PM	0.0001	0	0.034	0	0	0	0.203	0.094	0.035	0.099
10/16/2025, 12:08:00 PM	0.0001	0	0.0342	0	0	0	0.203	0.095	0.036	0.1
10/16/2025, 12:09:00 PM	0.0001	0	0.0344	0	0	0	0.203	0.095	0.036	0.1
10/16/2025, 12:10:00 PM	0.0001	0	0.0346	0	0	0	0.203	0.096	0.036	0.097
10/16/2025, 12:11:00 PM	0.0001	0	0.0348	0	0	0	0.203	0.096	0.036	0.1
10/16/2025, 12:12:00 PM	0.0001	0	0.0351	0.001	0	0	0.203	0.097	0.037	0.104
10/16/2025, 12:13:00 PM	0.0001	0	0.0353	0	0	0	0.203	0.097	0.037	0.103
10/16/2025, 12:14:00 PM	0.0001	0	0.0355	0	0	0	0.203	0.098	0.037	0.107
10/16/2025, 12:15:00 PM	0.0001	0	0.0357	0.001	0	0	0.203	0.099	0.037	0.107
10/16/2025, 12:16:00 PM	0.0001	0	0.0359	0	0	0	0.203	0.1	0.037	0.109
10/16/2025, 12:17:00 PM	0.0001	0	0.0361	0	0	0	0.203	0.101	0.038	0.103
10/16/2025, 12:18:00 PM	0.0001	0	0.0363	0	0	0	0.203	0.101	0.038	0.098
10/16/2025, 12:19:00 PM	0.0001	0	0.0365	0	0	0	0.203	0.102	0.038	0.104
10/16/2025, 12:20:00 PM	0.0001	0	0.0367	0	0	0	0.203	0.102	0.038	0.1
10/16/2025, 12:21:00 PM	0.0001	0	0.0369	0	0	0	0.203	0.102	0.038	0.11
10/16/2025, 12:22:00 PM	0.0001	0	0.0372	0	0	0	0.203	0.102	0.039	0.102
10/16/2025, 12:23:00 PM	0.0001	0	0.0374	0	0	0	0.203	0.103	0.039	0.103
10/16/2025, 12:24:00 PM	0.0002	0	0.0376	0.001	0	0	0.203	0.103	0.039	0.095
10/16/2025, 12:25:00 PM	0.0003	0	0.0378	0.001	0	0	0.203	0.103	0.039	0.103
10/16/2025, 12:26:00 PM	0.0003	0	0.0381	0.001	0	0	0.203	0.103	0.04	0.105
10/16/2025, 12:27:00 PM	0.0003	0	0.0383	0	0	0	0.203	0.104	0.04	0.112
10/16/2025, 12:28:00 PM	0.0003	0	0.0385	0	0	0	0.203	0.104	0.04	0.115
10/16/2025, 12:29:00 PM	0.0003	0	0.0387	0.001	0	0	0.203	0.105	0.04	0.115
10/16/2025, 12:30:00 PM	0.0003	0	0.0389	0	0	0	0.203	0.105	0.04	0.113
10/16/2025, 12:31:00 PM	0.0003	0	0.0391	0	0	0	0.203	0.106	0.041	0.121
10/16/2025, 12:32:00 PM	0.0003	0	0.0393	0	0	0	0.203	0.106	0.041	0.117
10/16/2025, 12:33:00 PM	0.0003	0	0.0395	0.001	0	0	0.203	0.107	0.041	0.121
10/16/2025, 12:34:00 PM	0.0004	0	0.0397	0.001	0	0	0.203	0.108	0.041	0.125
10/16/2025, 12:35:00 PM	0.0004	0	0.04	0	0	0	0.203	0.11	0.042	0.123
10/16/2025, 12:36:00 PM	0.0004	0	0.0403	0	0	0	0.203	0.111	0.042	0.125
10/16/2025, 12:37:00 PM	0.0004	0	0.0405	0	0	0	0.203	0.112	0.042	0.122
10/16/2025, 12:38:00 PM	0.0005	0	0.0407	0.001	0	0	0.203	0.113	0.042	0.122

10/16/2025, 12:39:00 PM	0.0005	0	0.0409	0.002	0	0	0.203	0.114	0.043	0.122
10/16/2025, 12:40:00 PM	0.0005	0	0.0412	0	0	0	0.203	0.116	0.043	0.121
10/16/2025, 12:41:00 PM	0.0004	0	0.0414	0	0	0	0.203	0.117	0.043	0.118
10/16/2025, 12:42:00 PM	0.0004	0	0.0416	0	0	0	0.203	0.118	0.043	0.118
10/16/2025, 12:43:00 PM	0.0004	0	0.0419	0	0	0	0.203	0.119	0.044	0.117
10/16/2025, 12:44:00 PM	0.0003	0	0.0421	0	0	0	0.203	0.119	0.044	0.117
10/16/2025, 12:45:00 PM	0.0003	0	0.0424	0	0	0	0.203	0.119	0.044	0.116
10/16/2025, 12:46:00 PM	0.0003	0	0.0426	0	0	0	0.203	0.119	0.044	0.119
10/16/2025, 12:47:00 PM	0.0003	0	0.0429	0	0	0	0.203	0.119	0.045	0.118
10/16/2025, 12:48:00 PM	0.0003	0	0.0431	0.001	0	0	0.203	0.119	0.045	0.113
10/16/2025, 12:49:00 PM	0.0003	0	0.0434	0	0	0	0.203	0.119	0.045	0.118
10/16/2025, 12:50:00 PM	0.0003	0	0.0436	0	0	0	0.203	0.119	0.045	0.119
10/16/2025, 12:51:00 PM	0.0003	0	0.0439	0	0	0	0.203	0.118	0.046	0.117
10/16/2025, 12:52:00 PM	0.0003	0	0.0441	0.001	0	0	0.203	0.118	0.046	0.119
10/16/2025, 12:53:00 PM	0.0003	0	0.0444	0.001	0	0	0.203	0.118	0.046	0.121
10/16/2025, 12:54:00 PM	0.0002	0	0.0446	0	0	0	0.203	0.117	0.046	0.116
10/16/2025, 12:55:00 PM	0.0003	0	0.0449	0.001	0	0	0.203	0.117	0.047	0.116
10/16/2025, 12:56:00 PM	0.0003	0	0.0451	0.001	0	0	0.203	0.117	0.047	0.116
10/16/2025, 12:57:00 PM	0.0003	0	0.0454	0	0	0	0.203	0.116	0.047	0.115
10/16/2025, 12:58:00 PM	0.0003	0	0.0456	0	0	0	0.203	0.116	0.047	0.114
10/16/2025, 12:59:00 PM	0.0003	0	0.0459	0	0	0	0.203	0.116	0.048	0.111
10/16/2025, 1:00:00 PM	0.0003	0	0.0461	0	0	0	0.203	0.116	0.048	0.115
10/16/2025, 1:01:00 PM	0.0004	0	0.0464	0.001	0	0	0.203	0.115	0.048	0.115
10/16/2025, 1:02:00 PM	0.0004	0	0.0466	0	0	0	0.203	0.115	0.048	0.114
10/16/2025, 1:03:00 PM	0.0003	0	0.0469	0	0	0	0.203	0.115	0.049	0.113
10/16/2025, 1:04:00 PM	0.0004	0	0.0471	0.001	0	0	0.203	0.115	0.049	0.113
10/16/2025, 1:05:00 PM	0.0004	0	0.0474	0	0	0	0.203	0.114	0.049	0.115
10/16/2025, 1:06:00 PM	0.0005	0	0.0476	0.001	0	0	0.203	0.114	0.049	0.116
10/16/2025, 1:07:00 PM	0.0005	0	0.0479	0.001	0	0	0.203	0.114	0.05	0.119
10/16/2025, 1:08:00 PM	0.0005	0	0.0481	0.001	0	0	0.203	0.114	0.05	0.12
10/16/2025, 1:09:00 PM	0.0005	0	0.0484	0.001	0	0	0.203	0.114	0.05	0.12
10/16/2025, 1:10:00 PM	0.0005	0	0.0486	0.001	0	0	0.203	0.114	0.05	0.117
10/16/2025, 1:11:00 PM	0.0005	0	0.0488	0	0	0	0.203	0.114	0.05	0.121
10/16/2025, 1:12:00 PM	0.0005	0	0.0491	0.001	0	0	0.203	0.115	0.051	0.117
10/16/2025, 1:13:00 PM	0.0006	0	0.0493	0.001	0	0	0.203	0.115	0.051	0.12
10/16/2025, 1:14:00 PM	0.0007	0	0.0495	0.001	0	0	0.203	0.115	0.051	0.121

10/16/2025, 1:15:00 PM	0.0007	0	0.0497	0.001	0	0	0.203	0.116	0.051	0.125
10/16/2025, 1:16:00 PM	0.0007	0	0.05	0.001	0	0	0.203	0.116	0.052	0.123
10/16/2025, 1:17:00 PM	0.0008	0	0.0503	0.001	0	0	0.203	0.117	0.052	0.124
10/16/2025, 1:18:00 PM	0.0009	0	0.0505	0.001	0	0	0.203	0.118	0.052	0.123
10/16/2025, 1:19:00 PM	0.0009	0	0.0507	0.001	0	0	0.203	0.118	0.052	0.124
10/16/2025, 1:20:00 PM	0.0009	0	0.0509	0.001	0	0	0.203	0.119	0.053	0.121
10/16/2025, 1:21:00 PM	0.0009	0	0.0512	0.001	0	0	0.203	0.119	0.053	0.12
10/16/2025, 1:22:00 PM	0.0009	0	0.0514	0.001	0	0	0.203	0.119	0.053	0.116
10/16/2025, 1:23:00 PM	0.0009	0	0.0516	0.001	0	0	0.203	0.119	0.053	0.114
10/16/2025, 1:24:00 PM	0.0009	0	0.0519	0.001	0	0	0.203	0.118	0.054	0.121
10/16/2025, 1:25:00 PM	0.0009	0	0.0521	0.001	0	0	0.203	0.119	0.054	0.12
10/16/2025, 1:26:00 PM	0.001	0	0.0524	0.001	0	0	0.203	0.119	0.054	0.123
10/16/2025, 1:27:00 PM	0.001	0	0.0526	0.001	0	0	0.203	0.119	0.054	0.121
10/16/2025, 1:28:00 PM	0.001	0	0.0529	0.001	0	0	0.203	0.119	0.055	0.122
10/16/2025, 1:29:00 PM	0.001	0	0.0531	0.001	0	0	0.203	0.12	0.055	0.125
10/16/2025, 1:30:00 PM	0.001	0	0.0534	0.001	0	0	0.203	0.12	0.055	0.131
10/16/2025, 1:31:00 PM	0.001	0	0.0536	0.001	0	0	0.203	0.12	0.055	0.127
10/16/2025, 1:32:00 PM	0.001	0	0.0539	0.001	0	0	0.203	0.12	0.056	0.128
10/16/2025, 1:33:00 PM	0.001	0	0.0541	0.001	0	0	0.203	0.121	0.056	0.127
10/16/2025, 1:34:00 PM	0.001	0	0.0544	0.001	0	0	0.203	0.121	0.056	0.125
10/16/2025, 1:35:00 PM	0.001	0	0.0547	0.001	0	0	0.203	0.121	0.057	0.124
10/16/2025, 1:36:00 PM	0.001	0	0.0549	0.001	0	0	0.203	0.122	0.057	0.126
10/16/2025, 1:37:00 PM	0.001	0	0.0552	0.001	0	0	0.203	0.122	0.057	0.126
10/16/2025, 1:38:00 PM	0.001	0	0.0555	0.001	0	0	0.203	0.123	0.057	0.127
10/16/2025, 1:39:00 PM	0.001	0	0.0557	0.001	0	0	0.203	0.124	0.058	0.126
10/16/2025, 1:40:00 PM	0.001	0	0.056	0.001	0	0	0.203	0.124	0.058	0.123
10/16/2025, 1:41:00 PM	0.001	0	0.0563	0.001	0	0	0.203	0.125	0.058	0.125
10/16/2025, 1:42:00 PM	0.001	0	0.0565	0.001	0	0	0.203	0.125	0.058	0.123
10/16/2025, 1:43:00 PM	0.001	0	0.0568	0.001	0	0	0.203	0.125	0.059	0.123
10/16/2025, 1:44:00 PM	0.001	0	0.0571	0.001	0	0	0.203	0.125	0.059	0.121
10/16/2025, 1:45:00 PM	0.001	0	0.0573	0.001	0	0	0.203	0.125	0.059	0.13
10/16/2025, 1:46:00 PM	0.001	0	0.0576	0.001	0	0	0.203	0.125	0.059	0.129
10/16/2025, 1:47:00 PM	0.001	0	0.0579	0.001	0	0	0.203	0.125	0.06	0.123
10/16/2025, 1:48:00 PM	0.0011	0	0.0581	0.002	0	0	0.203	0.124	0.06	0.126
10/16/2025, 1:49:00 PM	0.0011	0	0.0584	0.001	0	0	0.203	0.124	0.06	0.127
10/16/2025, 1:50:00 PM	0.0011	0	0.0586	0.001	0	0	0.203	0.124	0.06	0.126

10/16/2025, 1:51:00 PM	0.0011	0	0.0589	0.001	0	0	0.203	0.124	0.061	0.126
10/16/2025, 1:52:00 PM	0.0011	0	0.0591	0.001	0	0	0.203	0.124	0.061	0.129
10/16/2025, 1:53:00 PM	0.0011	0	0.0594	0.001	0	0	0.203	0.124	0.061	0.124
10/16/2025, 1:54:00 PM	0.0011	0	0.0597	0.001	0	0	0.203	0.125	0.062	0.125
10/16/2025, 1:55:00 PM	0.0011	0	0.0599	0.001	0	0	0.203	0.125	0.062	0.127
10/16/2025, 1:56:00 PM	0.0011	0	0.0602	0.001	0	0	0.203	0.125	0.062	0.132
10/16/2025, 1:57:00 PM	0.0011	0	0.0605	0.001	0	0	0.203	0.125	0.062	0.131
10/16/2025, 1:58:00 PM	0.0011	0	0.0607	0.001	0	0	0.203	0.125	0.063	0.125
10/16/2025, 1:59:00 PM	0.0011	0	0.061	0.001	0	0	0.203	0.126	0.063	0.135
10/16/2025, 2:00:00 PM	0.0011	0	0.0613	0.001	0	0	0.203	0.126	0.063	0.124
10/16/2025, 2:01:00 PM	0.0011	0	0.0615	0.001	0	0	0.203	0.126	0.063	0.13
10/16/2025, 2:02:00 PM	0.0011	0	0.0618	0.001	0	0	0.203	0.126	0.064	0.129
10/16/2025, 2:03:00 PM	0.001	0	0.0621	0.001	0	0	0.203	0.126	0.064	0.128
10/16/2025, 2:04:00 PM	0.001	0	0.0623	0.001	0	0	0.203	0.127	0.064	0.131
10/16/2025, 2:05:00 PM	0.001	0	0.0626	0.001	0	0	0.203	0.127	0.064	0.13
10/16/2025, 2:06:00 PM	0.001	0	0.0629	0.001	0	0	0.203	0.127	0.065	0.13
10/16/2025, 2:07:00 PM	0.001	0	0.0631	0.001	0	0	0.203	0.128	0.065	0.131
10/16/2025, 2:08:00 PM	0.001	0	0.0634	0.001	0	0	0.203	0.128	0.065	0.131
10/16/2025, 2:09:00 PM	0.001	0	0.0637	0.001	0	0	0.203	0.128	0.066	0.134
10/16/2025, 2:10:00 PM	0.001	0	0.0639	0.001	0	0	0.203	0.128	0.066	0.127
10/16/2025, 2:11:00 PM	0.001	0	0.0642	0.001	0	0	0.203	0.128	0.066	0.128
10/16/2025, 2:12:00 PM	0.001	0	0.0645	0.001	0	0	0.203	0.128	0.066	0.126
10/16/2025, 2:13:00 PM	0.001	0	0.0647	0.001	0	0	0.203	0.128	0.067	0.131
10/16/2025, 2:14:00 PM	0.0011	0	0.065	0.002	0	0	0.203	0.128	0.067	0.132
10/16/2025, 2:15:00 PM	0.0011	0	0.0653	0.001	0	0	0.203	0.128	0.067	0.129
10/16/2025, 2:16:00 PM	0.0011	0	0.0655	0.002	0	0	0.203	0.129	0.067	0.131
10/16/2025, 2:17:00 PM	0.0011	0	0.0658	0.001	0	0	0.203	0.129	0.068	0.133
10/16/2025, 2:18:00 PM	0.0011	0	0.0661	0.001	0	0	0.203	0.129	0.068	0.134
10/16/2025, 2:19:00 PM	0.0012	0	0.0663	0.002	0	0	0.203	0.13	0.068	0.134
10/16/2025, 2:20:00 PM	0.0012	0	0.0667	0.001	0	0	0.203	0.13	0.069	0.136
10/16/2025, 2:21:00 PM	0.0013	0	0.0669	0.002	0	0	0.203	0.13	0.069	0.136
10/16/2025, 2:22:00 PM	0.0013	0	0.0672	0.002	0	0	0.203	0.13	0.069	0.134
10/16/2025, 2:23:00 PM	0.0014	0	0.0675	0.002	0	0	0.203	0.131	0.069	0.137
10/16/2025, 2:24:00 PM	0.0015	0	0.0677	0.002	0	0	0.203	0.131	0.07	0.137
10/16/2025, 2:25:00 PM	0.0015	0	0.068	0.001	0	0	0.203	0.131	0.07	0.133
10/16/2025, 2:26:00 PM	0.0015	0	0.0683	0.002	0	0	0.203	0.132	0.07	0.133

10/16/2025, 2:27:00 PM	0.0016	0	0.0685	0.002	0	0	0.203	0.132	0.07	0.134
10/16/2025, 2:28:00 PM	0.0017	0	0.0688	0.002	0	0	0.203	0.133	0.071	0.131
10/16/2025, 2:29:00 PM	0.0017	0	0.0691	0.002	0	0	0.203	0.133	0.071	0.131
10/16/2025, 2:30:00 PM	0.0017	0	0.0693	0.002	0	0	0.203	0.133	0.071	0.131
10/16/2025, 2:31:00 PM	0.0017	0	0.0697	0.002	0	0	0.203	0.133	0.072	0.131
10/16/2025, 2:32:00 PM	0.0018	0	0.0699	0.002	0	0	0.203	0.133	0.072	0.133
10/16/2025, 2:33:00 PM	0.0019	0	0.0702	0.002	0	0	0.203	0.133	0.072	0.128
10/16/2025, 2:34:00 PM	0.0019	0	0.0705	0.002	0	0	0.203	0.133	0.072	0.129
10/16/2025, 2:35:00 PM	0.0019	0	0.0707	0.002	0	0	0.203	0.133	0.073	0.127
10/16/2025, 2:36:00 PM	0.0019	0	0.071	0.002	0	0	0.203	0.132	0.073	0.129
10/16/2025, 2:37:00 PM	0.0019	0	0.0713	0.002	0	0	0.203	0.132	0.073	0.132
10/16/2025, 2:38:00 PM	0.0019	0	0.0715	0.002	0	0	0.203	0.131	0.073	0.127
10/16/2025, 2:39:00 PM	0.0019	0	0.0718	0.002	0	0	0.203	0.131	0.074	0.132
10/16/2025, 2:40:00 PM	0.002	0	0.0721	0.002	0	0	0.203	0.13	0.074	0.129
10/16/2025, 2:41:00 PM	0.002	0	0.0723	0.002	0	0	0.203	0.13	0.074	0.129
10/16/2025, 2:42:00 PM	0.002	0	0.0727	0.002	0	0	0.203	0.13	0.075	0.129
10/16/2025, 2:43:00 PM	0.002	0	0.0729	0.002	0	0	0.203	0.13	0.075	0.129
10/16/2025, 2:44:00 PM	0.0021	0	0.0732	0.003	0	0	0.203	0.129	0.075	0.131
10/16/2025, 2:45:00 PM	0.0021	0	0.0735	0.002	0	0	0.203	0.129	0.075	0.13
10/16/2025, 2:46:00 PM	0.0021	0	0.0737	0.002	0	0	0.203	0.129	0.076	0.131
10/16/2025, 2:47:00 PM	0.0021	0	0.074	0.003	0	0	0.203	0.129	0.076	0.127
10/16/2025, 2:48:00 PM	0.0021	0	0.0743	0.002	0	0	0.203	0.129	0.076	0.126
10/16/2025, 2:49:00 PM	0.0022	0	0.0745	0.003	0	0	0.203	0.128	0.076	0.128
10/16/2025, 2:50:00 PM	0.0022	0	0.0748	0.002	0	0	0.203	0.128	0.077	0.128
10/16/2025, 2:51:00 PM	0.0022	0	0.0751	0.002	0	0	0.203	0.128	0.077	0.123
10/16/2025, 2:52:00 PM	0.0022	0	0.0753	0.002	0	0	0.203	0.128	0.077	0.125
10/16/2025, 2:53:00 PM	0.0022	0	0.0756	0.002	0	0	0.203	0.128	0.077	0.125
10/16/2025, 2:54:00 PM	0.0022	0	0.0759	0.002	0	0	0.203	0.128	0.078	0.126
10/16/2025, 2:55:00 PM	0.0022	0	0.0761	0.002	0	0	0.203	0.128	0.078	0.119
10/16/2025, 2:56:00 PM	0.0022	0	0.0764	0.002	0	0	0.203	0.127	0.078	0.121
10/16/2025, 2:57:00 PM	0.0023	0	0.0767	0.003	0	0	0.203	0.127	0.079	0.126
10/16/2025, 2:58:00 PM	0.0023	0	0.0769	0.002	0	0	0.203	0.126	0.079	0.126
10/16/2025, 2:59:00 PM	0.0022	0	0.0772	0.002	0	0	0.203	0.126	0.079	0.125
10/16/2025, 3:00:00 PM	0.0022	0	0.0775	0.002	0	0	0.203	0.125	0.079	0.124
10/16/2025, 3:01:00 PM	0.0022	0	0.0777	0.002	0	0	0.203	0.125	0.08	0.126
10/16/2025, 3:02:00 PM	0.0021	0	0.078	0.002	0	0	0.203	0.125	0.08	0.124

10/16/2025, 3:03:00 PM	0.0021	0	0.0783	0.002	0	0	0.203	0.124	0.08	0.126
10/16/2025, 3:04:00 PM	0.0021	0	0.0785	0.002	0	0	0.203	0.124	0.08	0.128
10/16/2025, 3:05:00 PM	0.0021	0	0.0788	0.002	0	0	0.203	0.124	0.081	0.125
10/16/2025, 3:06:00 PM	0.0021	0	0.0791	0.002	0	0	0.203	0.124	0.081	0.129
10/16/2025, 3:07:00 PM	0.0021	0	0.0793	0.002	0	0	0.203	0.124	0.081	0.129
10/16/2025, 3:08:00 PM	0.0021	0	0.0796	0.002	0	0	0.203	0.124	0.081	0.131
10/16/2025, 3:09:00 PM	0.0021	0	0.0799	0.002	0	0	0.203	0.124	0.082	0.13
10/16/2025, 3:10:00 PM	0.0021	0	0.0801	0.002	0	0	0.203	0.125	0.082	0.129
10/16/2025, 3:11:00 PM	0.0021	0	0.0804	0.002	0	0	0.203	0.125	0.082	0.129
10/16/2025, 3:12:00 PM	0.002	0	0.0806	0.002	0	0	0.203	0.125	0.082	0.127
10/16/2025, 3:13:00 PM	0.002	0	0.0809	0.002	0	0	0.203	0.125	0.083	0.128
10/16/2025, 3:14:00 PM	0.002	0	0.0811	0.002	0	0	0.203	0.126	0.083	0.131
10/16/2025, 3:15:00 PM	0.002	0	0.0814	0.002	0	0	0.203	0.126	0.083	0.133
10/16/2025, 3:16:00 PM	0.002	0.0001	0.0817	0.002	0.001	0	0.203	0.126	0.084	0.131
10/16/2025, 3:17:00 PM	0.002	0.0001	0.0819	0.002	0.001	0	0.203	0.127	0.084	0.131
10/16/2025, 3:18:00 PM	0.0021	0.0002	0.0822	0.003	0.001	0	0.203	0.127	0.084	0.127
10/16/2025, 3:19:00 PM	0.0021	0.0003	0.0825	0.002	0.001	0	0.203	0.127	0.084	0.128
10/16/2025, 3:20:00 PM	0.0021	0.0003	0.0827	0.002	0.001	0	0.203	0.127	0.085	0.124
10/16/2025, 3:21:00 PM	0.0021	0.0004	0.083	0.002	0.001	0	0.203	0.127	0.085	0.125
10/16/2025, 3:22:00 PM	0.0021	0.0005	0.0833	0.002	0.001	0	0.203	0.127	0.085	0.125
10/16/2025, 3:23:00 PM	0.0021	0.0005	0.0835	0.002	0.001	0	0.203	0.127	0.085	0.125
10/16/2025, 3:24:00 PM	0.0021	0.0006	0.0838	0.002	0.001	0	0.203	0.127	0.086	0.123
10/16/2025, 3:25:00 PM	0.0021	0.0007	0.0841	0.002	0.001	0	0.203	0.126	0.086	0.132
10/16/2025, 3:26:00 PM	0.0021	0.0007	0.0843	0.002	0.001	0	0.203	0.126	0.086	0.124
10/16/2025, 3:27:00 PM	0.0027	0.0008	0.0846	0.012	0.001	0	0.203	0.126	0.086	0.123
10/16/2025, 3:28:00 PM	0.0027	0.0009	0.0849	0.002	0.001	0	0.203	0.126	0.087	0.125
10/16/2025, 3:29:00 PM	0.0027	0.0009	0.0851	0.002	0.001	0	0.203	0.125	0.087	0.124
10/16/2025, 3:30:00 PM	0.0027	0.001	0.0854	0.002	0.001	0	0.203	0.125	0.087	0.122
10/16/2025, 3:31:00 PM	0.0027	0.001	0.0856	0.002	0.001	0	0.203	0.125	0.087	0.122
10/16/2025, 3:32:00 PM	0.0027	0.001	0.0859	0.002	0.001	0	0.203	0.124	0.088	0.122
10/16/2025, 3:33:00 PM	0.0027	0.001	0.0861	0.002	0.001	0	0.203	0.124	0.088	0.122
10/16/2025, 3:34:00 PM	0.0027	0.001	0.0864	0.002	0.001	0	0.203	0.123	0.088	0.12
10/16/2025, 3:35:00 PM	0.0027	0.001	0.0866	0.002	0.001	0	0.203	0.123	0.088	0.122
10/16/2025, 3:36:00 PM	0.0027	0.001	0.0869	0.003	0.001	0	0.203	0.123	0.089	0.124
10/16/2025, 3:37:00 PM	0.0027	0.001	0.0871	0.002	0.001	0	0.203	0.122	0.089	0.122
10/16/2025, 3:38:00 PM	0.0027	0.001	0.0874	0.002	0.001	0	0.203	0.122	0.089	0.122

Maintenance and Storage Buildings PCI Investigation
Downwind CAMP Station Data
Hudson Valley Regional Airport Site
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10/16/2025, 3:39:00 PM	0.0027	0.001	0.0876	0.002	0.001	0	0.203	0.122	0.089	0.122
10/16/2025, 3:40:00 PM	0.0027	0.001	0.0879	0.002	0.001	0	0.203	0.122	0.09	0.119
10/16/2025, 3:41:00 PM	0.0027	0.001	0.0881	0.002	0.001	0	0.203	0.121	0.09	0.117
10/16/2025, 3:42:00 PM	0.0021	0.001	0.0884	0.002	0.001	0	0.203	0.121	0.09	0.118
10/16/2025, 3:43:00 PM	0.0021	0.001	0.0886	0.002	0.001	0	0.203	0.12	0.09	0.113
10/16/2025, 3:44:00 PM	0.0021	0.001	0.0889	0.002	0.001	0	0.203	0.12	0.091	0.114
10/16/2025, 3:45:00 PM	0.0021	0.001	0.0891	0.002	0.001	0	0.203	0.12	0.091	0.113
10/16/2025, 3:46:00 PM	0.0021	0.001	0.0894	0.002	0.001	0	0.203	0.119	0.091	0.114
10/16/2025, 3:47:00 PM	0.0021	0.001	0.0896	0.002	0.001	0	0.203	0.118	0.091	0.113
10/16/2025, 3:48:00 PM	0.0021	0.001	0.0899	0.002	0.001	0	0.203	0.118	0.092	0.11
10/16/2025, 3:49:00 PM	0.0021			0.002						

Notes:
TWA = Time Weighted Average
PPM= Parts per Million
mg/m3 = milligrams per cubic meter

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 7:51:00 AM					0	0.297	0	0	0
10/16/2025, 7:52:00 AM					0	0.297	0	0	0
10/16/2025, 7:53:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 7:54:00 AM	0.0025	0	0.003	0	0	0.297	0	0	0
10/16/2025, 7:55:00 AM	0.0027	0	0.003	0	0	0.297	0	0	0
10/16/2025, 7:56:00 AM	0.0028	0	0.003	0	0	0.297	0	0	0
10/16/2025, 7:57:00 AM	0.0028	0	0.003	0	0	0.297	0	0	0
10/16/2025, 7:58:00 AM	0.003	0	0.004	0	0	0.297	0	0	0
10/16/2025, 7:59:00 AM	0.003	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:00:00 AM	0.003	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:01:00 AM	0.003	0	0.003	0	0	0.297	0.019	0	0
10/16/2025, 8:02:00 AM	0.003	0	0.003	0	0	0.297	0.009	0	0
10/16/2025, 8:03:00 AM	0.003	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:04:00 AM	0.0032	0	0.005	0	0	0.297	0	0	0
10/16/2025, 8:05:00 AM	0.0032	0	0.004	0	0	0.297	0	0	0
10/16/2025, 8:06:00 AM	0.0031	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:07:00 AM	0.0031	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:08:00 AM	0.0031	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:09:00 AM	0.003	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:10:00 AM	0.0029	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:11:00 AM	0.0029	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:12:00 AM	0.0028	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:13:00 AM	0.0027	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:14:00 AM	0.0025	0	0.001	0	0	0.297	0	0	0
10/16/2025, 8:15:00 AM	0.0025	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:16:00 AM	0.0024	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:17:00 AM	0.0024	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:18:00 AM	0.0026	0	0.006	0	0	0.297	0	0	0
10/16/2025, 8:19:00 AM	0.0025	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:20:00 AM	0.0026	0	0.006	0	0	0.297	0	0	0
10/16/2025, 8:21:00 AM	0.0027	0	0.004	0	0	0.297	0	0	0
10/16/2025, 8:22:00 AM	0.0027	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:23:00 AM	0.0027	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:24:00 AM	0.0028	0	0.003	0	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 8:25:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:26:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:27:00 AM	0.003	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:28:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:29:00 AM	0.0032	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:30:00 AM	0.0033	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:31:00 AM	0.0033	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:32:00 AM	0.0033	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:33:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:34:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:35:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:36:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:37:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:38:00 AM	0.0031	0	0.004	0	0	0.297	0	0	0
10/16/2025, 8:39:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:40:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:41:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:42:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:43:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:44:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:45:00 AM	0.0031	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:46:00 AM	0.003	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:47:00 AM	0.0029	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:48:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:49:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:50:00 AM	0.0029	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:51:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:52:00 AM	0.0029	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:53:00 AM	0.0028	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:54:00 AM	0.0028	0	0.003	0	0	0.297	0	0	0
10/16/2025, 8:55:00 AM	0.0027	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:56:00 AM	0.0027	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:57:00 AM	0.0026	0	0.002	0	0	0.297	0	0	0
10/16/2025, 8:58:00 AM	0.0025	0	0.002	0	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 8:59:00 AM	0.0025	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:00:00 AM	0.0025	0	0.003	0	0	0.297	0	0	0
10/16/2025, 9:01:00 AM	0.0025	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:02:00 AM	0.0025	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:03:00 AM	0.0025	0	0.003	0	0	0.297	0	0	0
10/16/2025, 9:04:00 AM	0.0024	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:05:00 AM	0.0024	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:06:00 AM	0.0023	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:07:00 AM	0.0023	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:08:00 AM	0.0022	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:09:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:10:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:11:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:12:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:13:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:14:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:15:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:16:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:17:00 AM	0.0021	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:18:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:19:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:20:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:21:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:22:00 AM	0.002	0	0.002	0	0	0.297	0	0	0
10/16/2025, 9:23:00 AM	0.002	0.0001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:24:00 AM	0.002	0.0001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:25:00 AM	0.002	0.0002	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:26:00 AM	0.002	0.0003	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:27:00 AM	0.002	0.0003	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:28:00 AM	0.0021	0.0004	0.003	0.001	0	0.297	0	0	0
10/16/2025, 9:29:00 AM	0.0021	0.0005	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:30:00 AM	0.0021	0.0005	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:31:00 AM	0.0021	0.0006	0.002	0.001	0	0.297	0	0	0
10/16/2025, 9:32:00 AM	0.0021	0.0007	0.002	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 9:33:00 AM	0.002	0.0007	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:34:00 AM	0.0019	0.0008	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:35:00 AM	0.0019	0.0009	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:36:00 AM	0.0018	0.0009	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:37:00 AM	0.0017	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:38:00 AM	0.0017	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:39:00 AM	0.0016	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:40:00 AM	0.0015	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:41:00 AM	0.0015	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:42:00 AM	0.0014	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:43:00 AM	0.0013	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:44:00 AM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:45:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:46:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:47:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:48:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:49:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:50:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:51:00 AM	0.0009	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 9:52:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:53:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:54:00 AM	0.0009	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 9:55:00 AM	0.0008	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 9:56:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 9:57:00 AM	0.0007	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 9:58:00 AM	0.0007	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 9:59:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:00:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:01:00 AM	0.0006	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:02:00 AM	0.0006	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:03:00 AM	0.0006	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:04:00 AM	0.0006	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:05:00 AM	0.0006	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:06:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 10:07:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:08:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:09:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:10:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:11:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:12:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:13:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:14:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:15:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:16:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:17:00 AM	0.0009	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:18:00 AM	0.0009	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:19:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:20:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:21:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:22:00 AM	0.0008	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:23:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:24:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:25:00 AM	0.0007	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:26:00 AM	0.0007	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:27:00 AM	0.0006	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:28:00 AM	0.0005	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:29:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:30:00 AM	0.0005	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:31:00 AM	0.0004	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:32:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:33:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:34:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:35:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:36:00 AM	0.0005	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:37:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:38:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:39:00 AM	0.0005	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:40:00 AM	0.0006	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 10:41:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:42:00 AM	0.0007	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:43:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:44:00 AM	0.0007	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 10:45:00 AM	0.0008	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:46:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:47:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:48:00 AM	0.0009	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 10:49:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:50:00 AM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:51:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:52:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:53:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:54:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:55:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:56:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:57:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:58:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 10:59:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:00:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:01:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:02:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:03:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:04:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:05:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:06:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:07:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:08:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:09:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:10:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:11:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:12:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:13:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:14:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 11:15:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:16:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:17:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:18:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:19:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:20:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:21:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:22:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:23:00 AM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 11:24:00 AM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 11:25:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:26:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:27:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:28:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:29:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:30:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:31:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:32:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:33:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:34:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:35:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:36:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:37:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:38:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:39:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:40:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:41:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:42:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:43:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:44:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:45:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:46:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:47:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:48:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 11:49:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:50:00 AM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:51:00 AM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 11:52:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:53:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:54:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:55:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:56:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:57:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:58:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 11:59:00 AM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:00:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:01:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:02:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:03:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:04:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:05:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:06:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:07:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 12:08:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 12:09:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:10:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:11:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:12:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:13:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:14:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:15:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:16:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:17:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:18:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:19:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:20:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:21:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:22:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 12:23:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:24:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:25:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:26:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 12:27:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:28:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:29:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:30:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:31:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:32:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:33:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:34:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:35:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:36:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:37:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:38:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:39:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:40:00 PM	0.001	0.001	0	0.001	0	0.297	0	0	0
10/16/2025, 12:41:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:42:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:43:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:44:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:45:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:46:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:47:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:48:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:49:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:50:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:51:00 PM	0.0009	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:52:00 PM	0.001	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 12:53:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:54:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:55:00 PM	0.0012	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 12:56:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
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Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 12:57:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:58:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 12:59:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:00:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:01:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:02:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:03:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:04:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:05:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:06:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:07:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:08:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:09:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:10:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:11:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:12:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:13:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:14:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:15:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:16:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:17:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:18:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:19:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:20:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:21:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 1:22:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:23:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:24:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:25:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:26:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:27:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:28:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:29:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:30:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 1:31:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:32:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:33:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:34:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:35:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:36:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:37:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:38:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:39:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:40:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:41:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:42:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:43:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:44:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:45:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:46:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:47:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:48:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:49:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:50:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:51:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:52:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:53:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:54:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:55:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:56:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:57:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:58:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 1:59:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:00:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:01:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:02:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:03:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:04:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 2:05:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:06:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:07:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:08:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:09:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:10:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:11:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:12:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:13:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:14:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:15:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:16:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:17:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:18:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:19:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:20:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:21:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:22:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:23:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:24:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:25:00 PM	0.001	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:26:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:27:00 PM	0.0011	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:28:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:29:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:30:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:31:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:32:00 PM	0.0011	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:33:00 PM	0.0012	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:34:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:35:00 PM	0.0012	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:36:00 PM	0.0013	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:37:00 PM	0.0013	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:38:00 PM	0.0014	0.001	0.002	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 2:39:00 PM	0.0015	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:40:00 PM	0.0015	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:41:00 PM	0.0015	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:42:00 PM	0.0015	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:43:00 PM	0.0016	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:44:00 PM	0.0016	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:45:00 PM	0.0016	0.001	0.001	0.001	0	0.297	0	0	0
10/16/2025, 2:46:00 PM	0.0017	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:47:00 PM	0.0017	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:48:00 PM	0.0017	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:49:00 PM	0.0018	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:50:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:51:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:52:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:53:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:54:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:55:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:56:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:57:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:58:00 PM	0.0019	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 2:59:00 PM	0.002	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:00:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:01:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:02:00 PM	0.0021	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:03:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:04:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:05:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:06:00 PM	0.0021	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:07:00 PM	0.0022	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:08:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:09:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:10:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:11:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:12:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 3:13:00 PM	0.0023	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:14:00 PM	0.0023	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:15:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:16:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:17:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:18:00 PM	0.0023	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:19:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:20:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:21:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:22:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:23:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:24:00 PM	0.0022	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:25:00 PM	0.0023	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:26:00 PM	0.0023	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:27:00 PM	0.0024	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:28:00 PM	0.0024	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:29:00 PM	0.0023	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:30:00 PM	0.0024	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:31:00 PM	0.0025	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:32:00 PM	0.0025	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:33:00 PM	0.0025	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:34:00 PM	0.0025	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:35:00 PM	0.0025	0.001	0.002	0.001	0	0.297	0	0	0
10/16/2025, 3:36:00 PM	0.0026	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:37:00 PM	0.0027	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:38:00 PM	0.0027	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:39:00 PM	0.0028	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:40:00 PM	0.0028	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:41:00 PM	0.0028	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:42:00 PM	0.0028	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:43:00 PM	0.0028	0.001	0.003	0.001	0	0.297	0	0	0
10/16/2025, 3:44:00 PM	0.0029	0.0011	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:45:00 PM	0.0029	0.0011	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:46:00 PM	0.0029	0.0012	0.003	0.002	0	0.297	0	0	0

Maintenance and Storage Buildings PCI Investigation
Upwind CAMP Station Data
Hudson Valley Regional Airport Site
Dutchess County, New York

Timestamp	Avg(Mass Conc. Total, mg/m³, 15m)	Avg(Total TWA, mg/m³, 15m)	Mass Conc. Total, mg/m³	Total TWA, mg/m³	VOC (Low), ppm	VOC (Peak), ppm	VOC (STEL), ppm	VOC (TWA), ppm	VOC, ppm
10/16/2025, 3:47:00 PM	0.0029	0.0013	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:48:00 PM	0.0029	0.0013	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:49:00 PM	0.0029	0.0014	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:50:00 PM	0.003	0.0015	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:51:00 PM	0.003	0.0015	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:52:00 PM	0.003	0.0016	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:53:00 PM	0.003	0.0017	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:54:00 PM	0.003	0.0017	0.003	0.002	0	0.297	0	0	0
10/16/2025, 3:55:00 PM	0.0036		0.012						

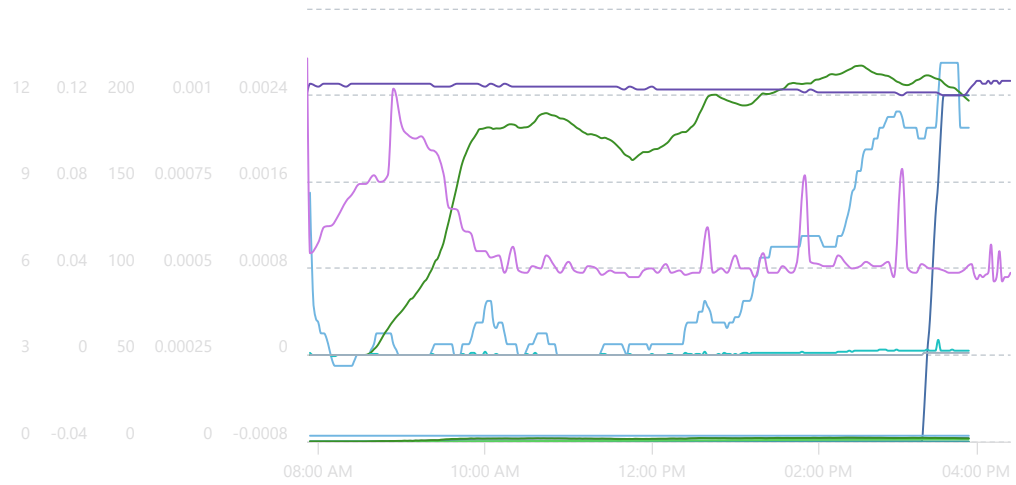
Notes:
TWA = Time Weighted Average
PPM= Parts per Million
mg/m3 = milligrams per cubic meter

HVRA Downwind

2B275679

10/16/2025 07:00 - 10/16/2025 17:00

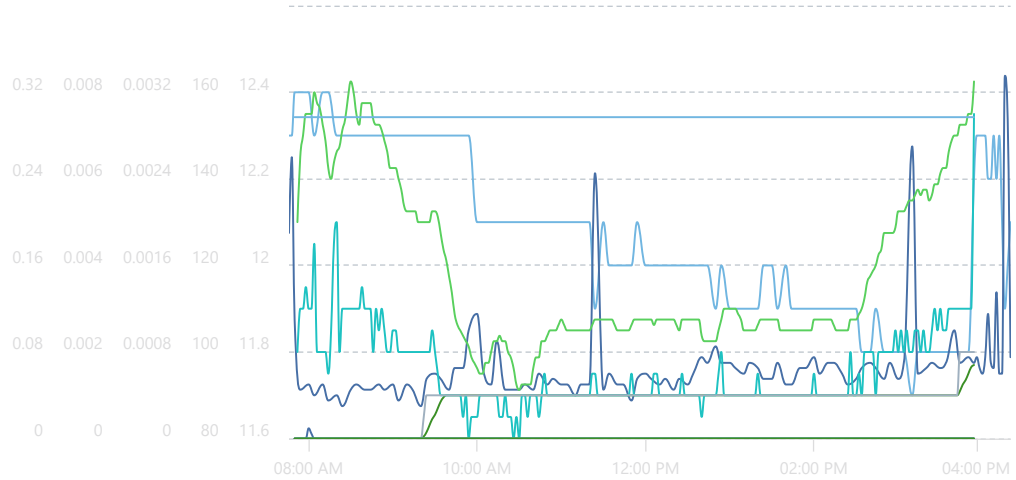
(GMT-05:00) Eastern Time (US & Canada)



- Avg(Mass Conc. Total, mg/m³, 15m) — MIN **0** AVG **0.001** MAX **0.003**
- Avg(Total TWA, mg/m³, 15m) — MIN **0** AVG **0** MAX **0.001**
- Avg(VOC (TWA), ppm, 15m) — MIN **0** AVG **0.034** MAX **0.09**
- Avg(VOC, ppm, 15m) — MIN **0** AVG **0.092** MAX **0.134**
- Batt. Voltage, V — MIN **12** AVG **12.27** MAX **12.5**
- Current, mA — MIN **92.5** AVG **112.778** MAX **221.3**
- Mass Conc. Total, mg/m³ — MIN **-0.001** AVG **0.001** MAX **0.012**
- Total TWA, mg/m³ — MIN **0** AVG **0** MAX **0.001**
- VOC (Low), ppm — MIN **0** AVG **0** MAX **0**
- VOC (Peak), ppm — MIN **0.203** AVG **0.203** MAX **0.203**
- VOC (STEL), ppm — MIN **0** AVG **0.091** MAX **0.133**
- VOC (TWA), ppm — MIN **0** AVG **0.036** MAX **0.092**
- VOC, ppm — MIN **0** AVG **0.094** MAX **0.137**

● HVRA Upwind
2B510587

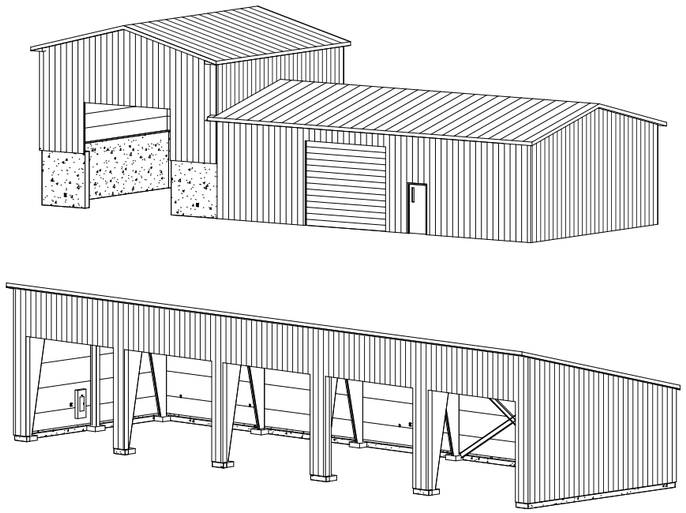
10/16/2025 07:00 - 10/16/2025 17:00
(GMT-05:00) Eastern Time (US & Canada)



- Batt. Voltage, V — MIN **11.7** AVG **12.075** MAX **12.4**
- Current, mA — MIN **87.5** AVG **97.812** MAX **163.8**
- Avg(Mass Conc. Total, mg/m^3, 15m) — MIN **0** AVG **0.002** MAX **0.004**
- Avg(Total TWA, mg/m^3, 15m) — MIN **0** AVG **0.001** MAX **0.002**
- Avg(VOC (TWA), ppm, 15m) — MIN **0** AVG **0** MAX **0**
- Avg(VOC, ppm, 15m) — MIN **0** AVG **0** MAX **0**
- Mass Conc. Total, mg/m^3 — MIN **0** AVG **0.002** MAX **0.012**
- Total TWA, mg/m^3 — MIN **0** AVG **0.001** MAX **0.002**
- VOC (Low), ppm — MIN **0** AVG **0** MAX **0**
- VOC (Peak), ppm — MIN **0.297** AVG **0.297** MAX **0.297**
- VOC (STEL), ppm — MIN **0** AVG **0** MAX **0.019**
- VOC (TWA), ppm — MIN **0** AVG **0** MAX **0**
- VOC, ppm — MIN **0** AVG **0** MAX **0**

EXHIBIT 1

FOUNDATION PLANS AND SITE/UTILITY PERMIT DRAWINGS FOR THE AIRPORT SUPPORT BUILDINGS



HUDSON VALLEY REGIONAL AIRPORT

C&S COMPANIES

DESIGN DEVELOPMENT

CONTRACT DRAWINGS FOR THE CONSTRUCTION OF

AIRPORT SUPPORT BUILDINGS

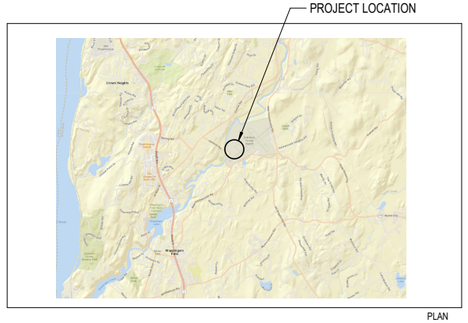
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

AUGUST 2024

C&S PROJECT NUMBER: 128.065.001

DRAWING LIST

G-001	COVER SHEET
GC-101	GENERAL AND CONSTRUCTION SAFETY PHASING PLAN
GC-102	CONSTRUCTION SAFETY AND PHASING PLAN
CG-101	GRADING PLAN
EL-101	ELECTRICAL PLAN
CG-501	DETAILS
CG-502	DETAILS
S-001	GENERAL NOTES
S-002	LOADING DIAGRAMS
S-101	COLD STORAGE FOUNDATION AND SLAB PLAN
S-102	SALT STORAGE FOUNDATION AND SLAB PLAN
S-103	SALT STORAGE ROOF PLAN
S-501	TYPICAL DETAILS
S-502	TYPICAL DETAILS
S-503	DETAILS
S-504	DETAILS
A-001	SYMBOLS, ABBREVIATIONS, AND LEGENDS
A-101	FLOOR PLAN - COLD STORAGE
A-102	FLOOR PLAN - SALT/UREA STORAGE
A-201	ELEVATIONS - COLD STORAGE
A-202	ELEVATIONS - SALT / UREA STORAGE
A-302	WALL SECTIONS
A-601	SCHEDULES AND DETAILS
E-001	SYMBOLS, GENERAL NOTES, ONE-LINE DIAGRAM
E-101	SALT AND UREA STORAGE POWER AND LIGHTING PLAN
E-102	COLD STORAGE POWER AND LIGHTING PLAN
E-601	SCHEDULES AND DETAILS



LOCATION MAP

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF THE PLANS AND SPECIFICATIONS FOR THIS PROJECT ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE AND THE BUILDING CODE OF NEW YORK STATE

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G-001

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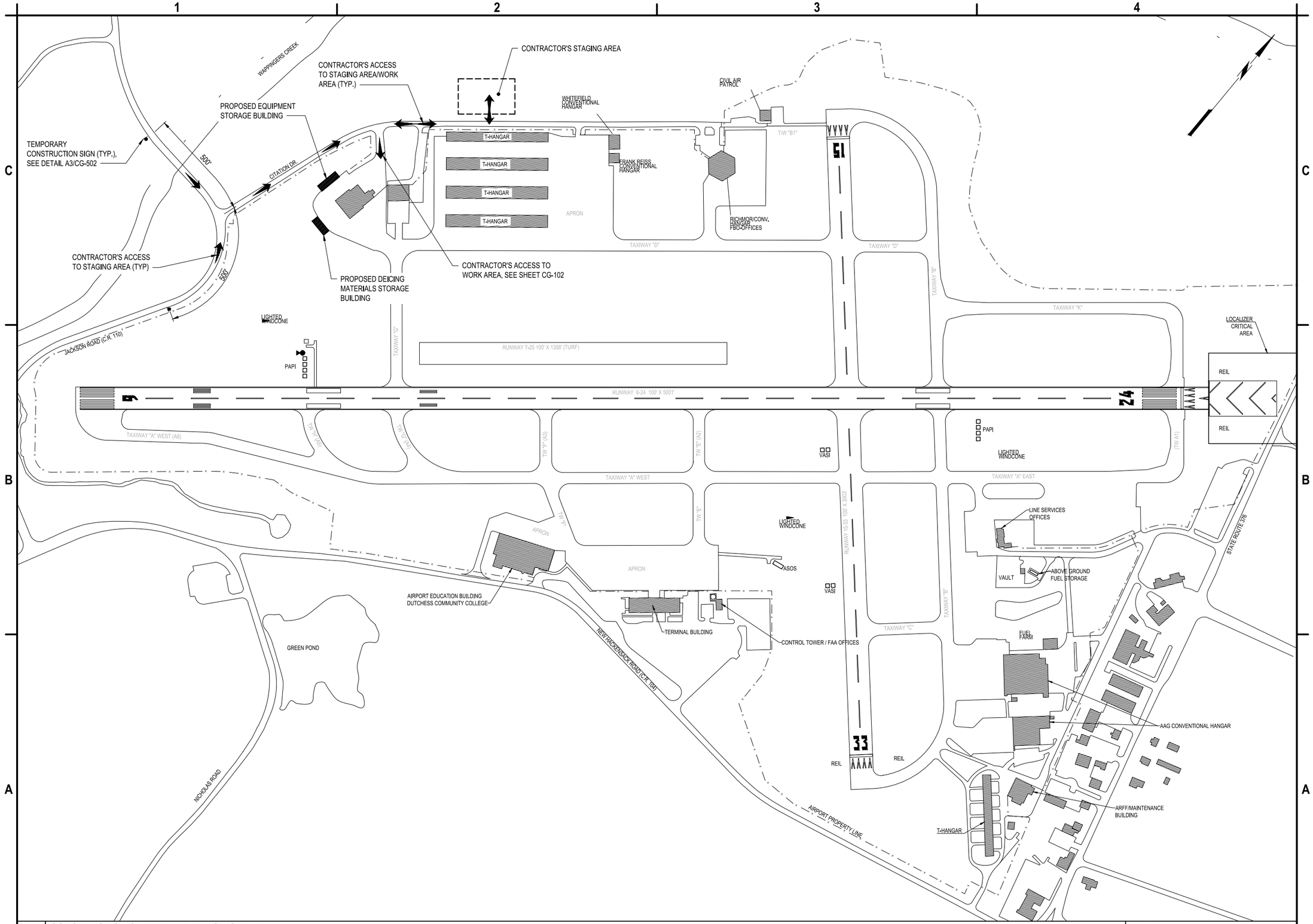

A1 CONSTRUCTION SAFETY AND PHASING PLAN

SCALE: 1" = 200'

200' 200 0 200 400FT.

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PRELIMINARY NOT FOR CONSTRUCTION

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	128.056.001
DATE:	AUGUST 2024
DRAWN BY:	JWP
DESIGNED BY:	JWP
CHECKED BY:	PMH

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GENERAL AND CONSTRUCTION SAFETY AND PHASING PLAN

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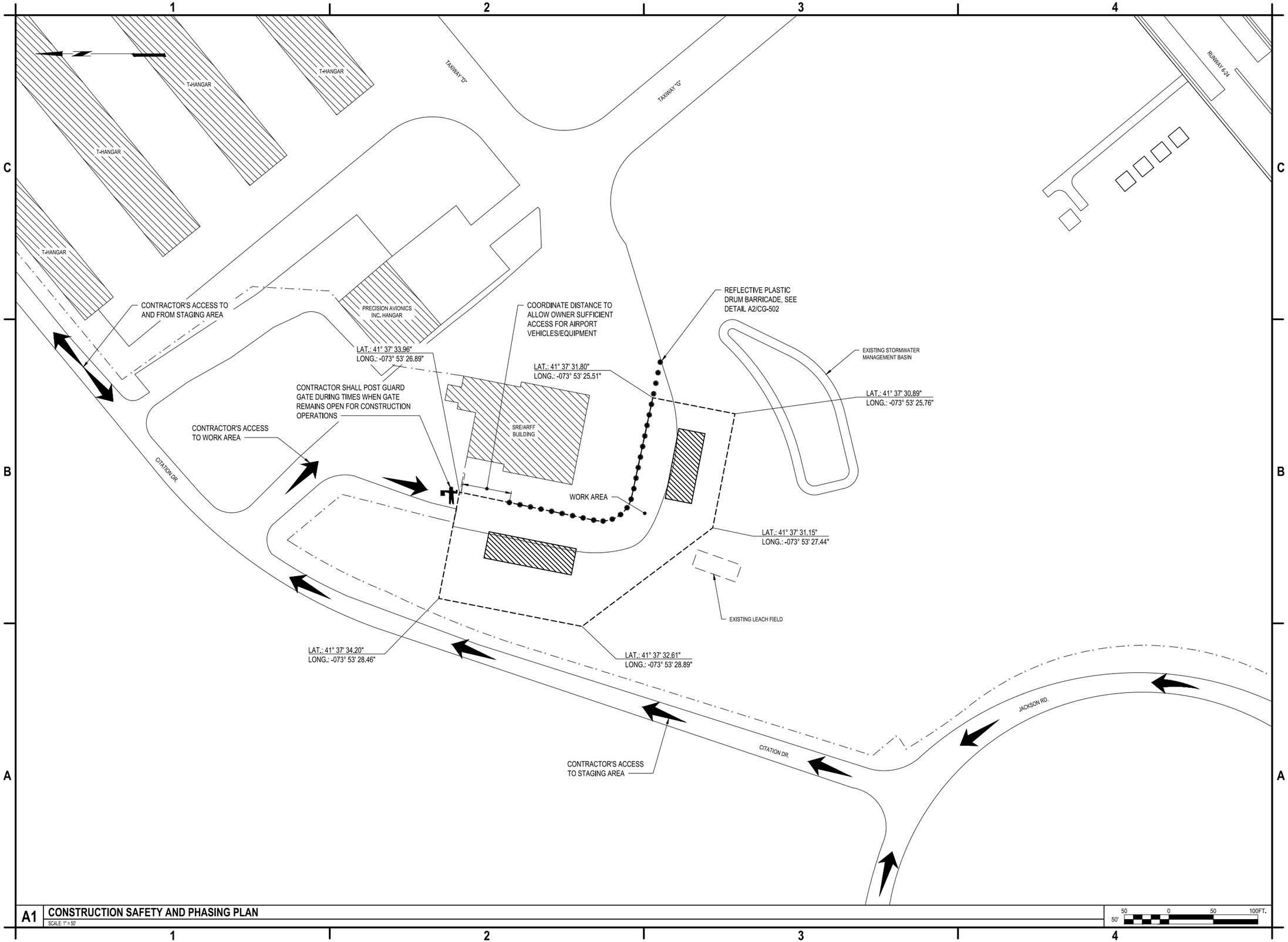

A1 CONSTRUCTION SAFETY AND PHASING PLAN
SCALE: 1" = 50'

50' 50 0 50 100FT.

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CONSTRUCTION SAFETY AND PHASING PLAN

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100. SAW CUT PAVEMENT PRIOR TO REMOVAL.

101. EXISTING BITUMINOUS PAVEMENT TO BE REMOVED.

102. SEE DETAIL B4/CG-501 FOR PAVEMENT SECTION.

103. SEE KEYING DETAIL A4/CG-501.

104. GRADING LIMITS, (TYP.).

105. SILT FENCE, SEE DETAIL B4/CG-502 (TYP.).

106. SEE DETAIL C1/CG-502.

107. CLEAR BRUSH AS REQUIRED TO COMPLETE GRADING/EMBANKMENT.

C4 KEYED NOTES
SCALE: NOT TO SCALE

Benchmark No. 1
Hydrant Bonnet Bolt
Elev.=146.05'

Benchmark No. 2
Nail Set Conc. Pad
Elev.=144.53'

APPROXIMATE LOCATION OF EXISTING SEPTIC SYSTEM ABSORPTION FIELD

A1 GRADING PLAN
SCALE: 1" = 20'

20 0 20 40FT.
20'

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GRADING PLAN

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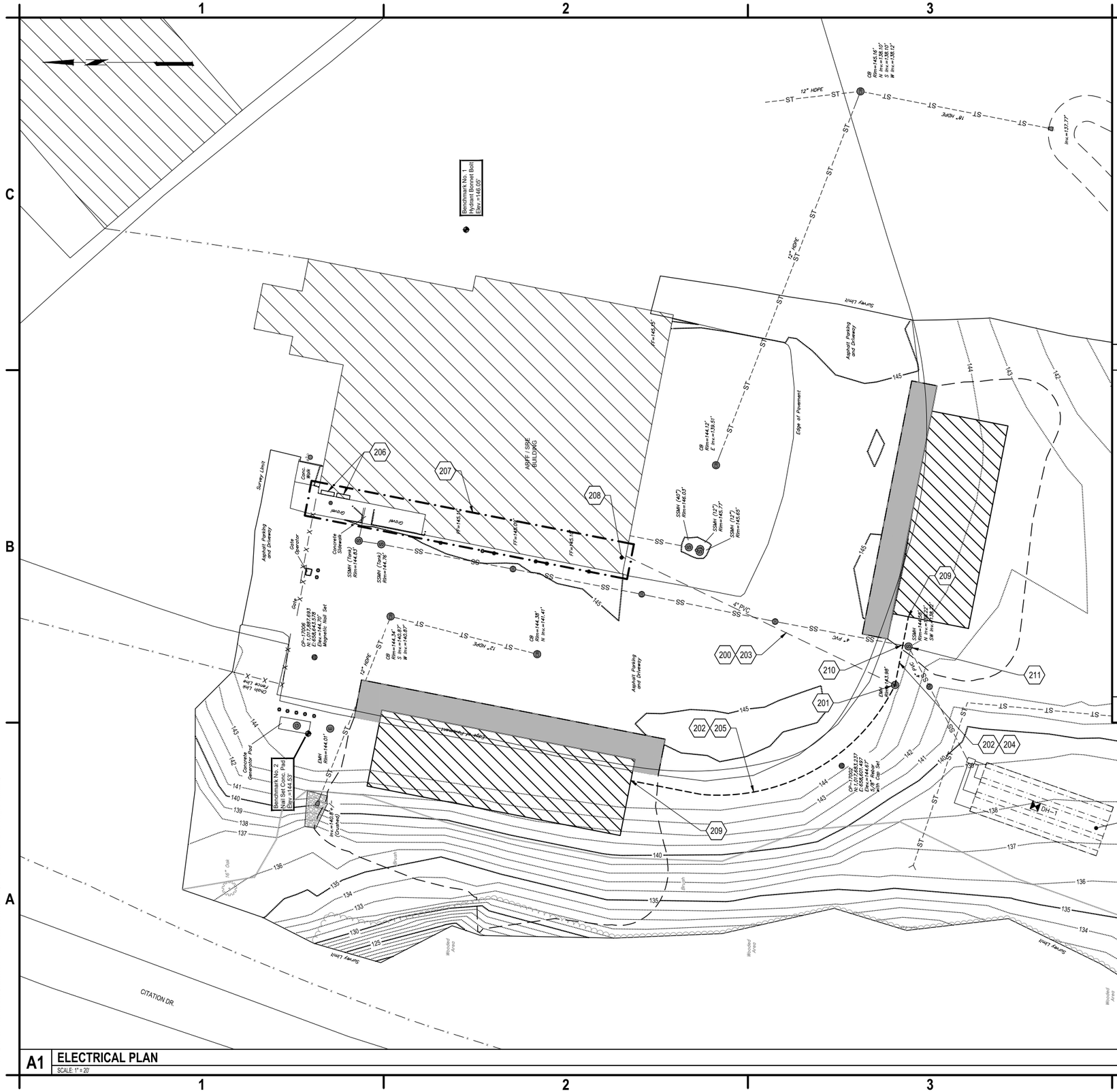

200. EXISTING PVC CONDUIT.

201. EXISTING PULL BOX.

202. PROPOSED 2-INCH PVC CONDUIT, SEE DETAIL A1/CG-501. (GC)

203. PROPOSED XX CABLES. (EC)

204. PROPOSED XX CABLES. (EC)

205. PROPOSED XX CABLES. (EC)

206. LOCATION OF ELECTRICAL PANELS.

207. ROUTE CABLE AND CONDUIT TO PANEL XX IN BUILDING ELECTRICAL ROOM. MAKE FINAL CONNECTION IN PANEL XX. (EC)

208. EXISTING CONDUIT STUB AND PULL WIRE LOCATION. CONTRACTOR SHALL UTILIZE FOR PROPOSED BUILDING(S) POWER ROUTING. (EC)

209. CONDUIT ENTRANCE. SEE DETAIL XX/CG-XXX. (EC)

210. EXISTING SANITARY LINE. PROTECT IN PLACE.

211. EXISTING SANITARY STRUCTURE, PROTECT IN PLACE.

C4 KEYED NOTES

SCALE: NOT TO SCALE

1. DEMARCATION POINT BETWEEN GC AND EC WORK IS 5' FROM FACE OF PROPOSED BUILDING(S) UNLESS OTHERWISE STATED OR SHOWN.

B4 SHEET NOTES

SCALE: NOT TO SCALE

A1 ELECTRICAL PLAN

SCALE: 1" = 20'

20' 20 0 20 40FT.

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ELECTRICAL PLAN

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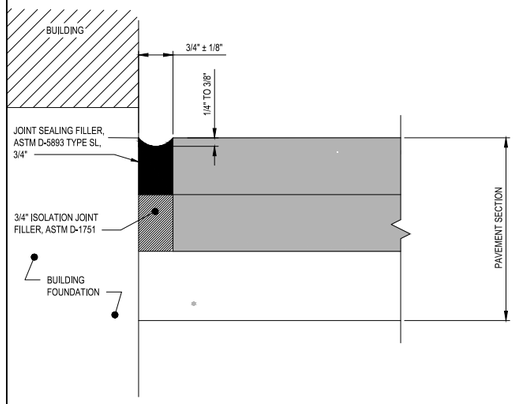
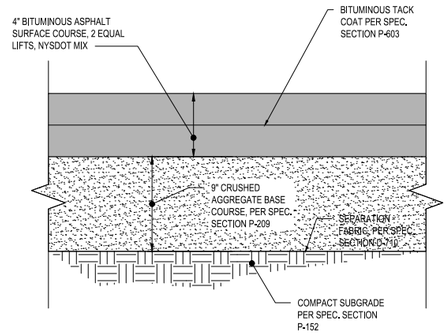
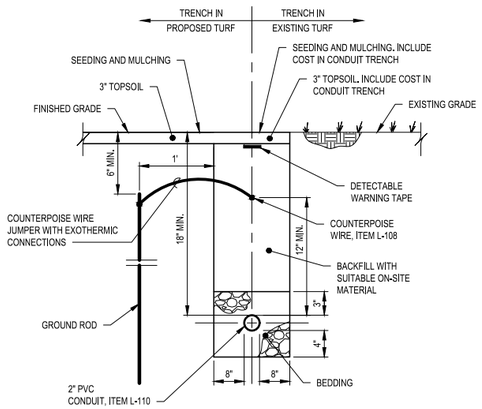


B3 ISOLATION JOINT AT FOUNDATION DETAIL
SCALE: NOT TO SCALE



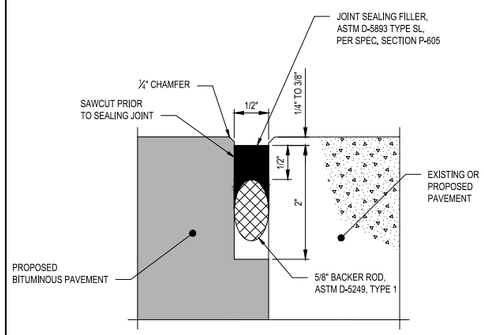
B4 PAVEMENT SECTION
SCALE: NOT TO SCALE



A1 CONDUIT TRENCHING DETAIL (IN TURF)
SCALE: NOT TO SCALE

CONDUIT TRENCHING NOTES:

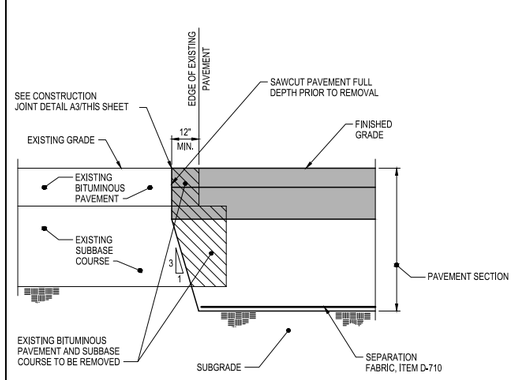
1. COUNTERPOISE WIRE SHALL ONLY BE INSTALLED IN CONDUIT TRENCHES WHERE THE CONDUIT RUN IS NOT PARALLEL WITH AND ADJACENT TO A PAVEMENT EDGE.
2. WHERE REQUIRED, ONE COUNTERPOISE WIRE SHALL BE PROVIDED FOR EVERY 2 CONDUITS OR INCREMENT THERE OF, PLACED IN A COMMON TRENCH. COUNTERPOISE WIRE SHALL BE PLACED PROPORTIONATELY ACROSS THE WIDTH OF CONDUITS.
3. DETECTABLE WARNING TAPE SHALL BE INSTALLED OVER EACH COUNTERPOISE WIRE PRIOR TO PLACING TOPSOIL.
4. PROVIDE 3" BETWEEN MULTIPLE CONDUITS IN A CONDUIT TRENCH. SEE LIGHTING PLANS FOR NUMBER OF CONDUITS PER TRENCH.
5. COUNTERPOISE WIRE SHALL BE CONNECTED TO A 5/8" DIA. x 8 FT LONG (MIN.) GROUND ROD EVERY 500 FT AND AT DUCT BANK ENDS AND CABLE CROSSINGS.ALL CONNECTIONS SHALL BE EXOTHERMIC.
6. THE CONTRACTOR SHALL RESTORE TRENCHED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE ORIGINAL SURFACE.



NOTE:

1. JOINT CONSTRUCTION IS CONSIDERED INCIDENTAL TO THIS CONTRACT AND NO DIRECT PAYMENT SHALL BE MADE.
2. SEALANT SHALL NOT BE HIGHER THAN BOTTOM OF CHAMGER.

A3 CONSTRUCTION JOINT SEALING DETAIL
SCALE: NOT TO SCALE



A4 KEYING DETAIL
SCALE: NOT TO SCALE

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AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
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DETAILS

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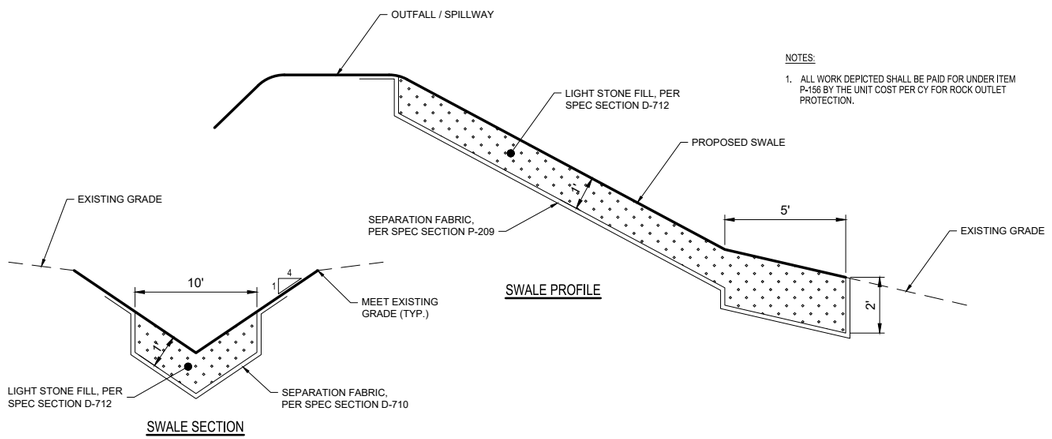
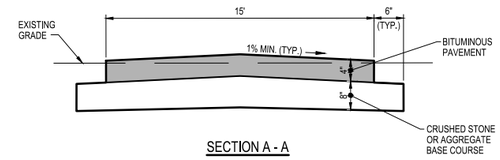


SWALE PROFILE

SWALE SECTION

C1 ROCK OUTLET PROTECTION DETAIL TYPE 1 (RP)

SCALE: NOT TO SCALE

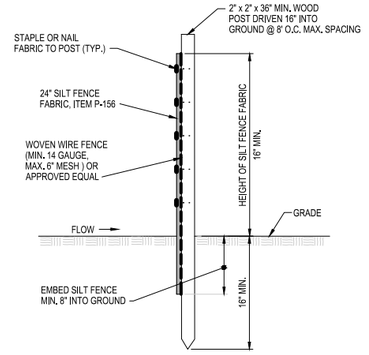


SECTION A - A

PLAN

STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. SURFACE WATER SHALL BE PIPED ACROSS STABILIZED CONSTRUCTION ENTRANCE AS DIRECTED BY THE ENGINEER.
2. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVEMENT. SHOULD SEDIMENT BECOME DISPLACED ONTO PAVEMENT, THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL SUCH SEDIMENT FROM THE PAVEMENT SURFACE.
3. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE REMOVED UPON SITE STABILIZATION AND RESTORED TO EXISTING CONDITION UNLESS ORDERED TO REMAIN BY ENGINEER.
4. ALL MATERIALS REQUIRED FOR THIS ITEM SHALL BE PAID FOR UNDER ITEM P-156 BY THE UNIT COST PER EACH FOR STABILIZED CONSTRUCTION ENTRANCE.

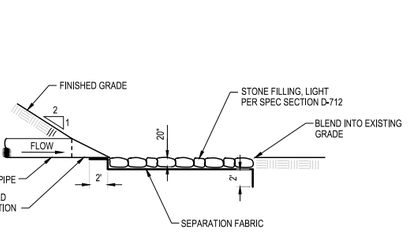


SILT FENCE NOTES:

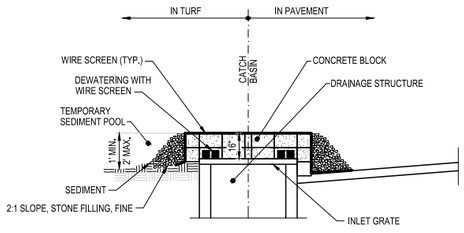
1. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
2. MAINTENANCE SHALL BE PROVIDED BY THE CONTRACTOR AS DIRECTED BY ENGINEER AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
3. WOVEN WIRE FENCE SHALL BE SECURELY FASTENED TO FENCE POSTS WITH WIRE TIES OR STAPLES.
4. SILT FENCE FABRIC SHALL BE SECURELY FASTENED TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION.

B4 SILT FENCE DETAIL (SF)

SCALE: NOT TO SCALE



SECTION A - A

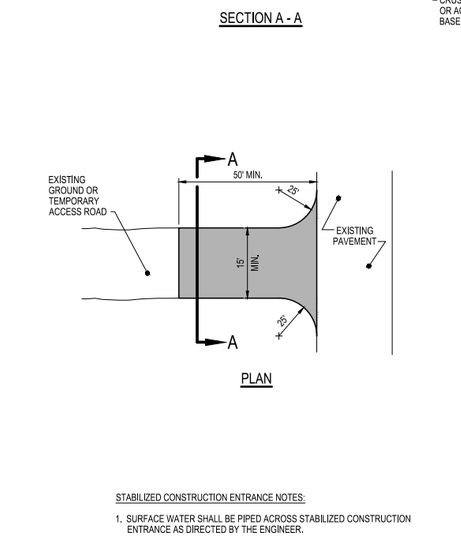


STORM DRAIN INLET PROTECTION NOTES:

1. SEDIMENT TRAP SHALL BE INSPECTED AND CLEANED IF NEEDED AFTER EVERY RAIN STORM OR AS DIRECTED BY THE ENGINEER.
2. WEEPS SHALL BE BULKHEADED BY CONTRACTOR UPON COMPLETION OF PROJECT.
3. ALL MATERIALS REQUIRED FOR THIS ITEM SHALL BE PAID FOR UNDER ITEM P-156 BY THE UNIT COST PER EACH FOR STORM DRAIN INLET PROTECTION.

B2 STORM INLET PROTECTION DETAIL (SD)

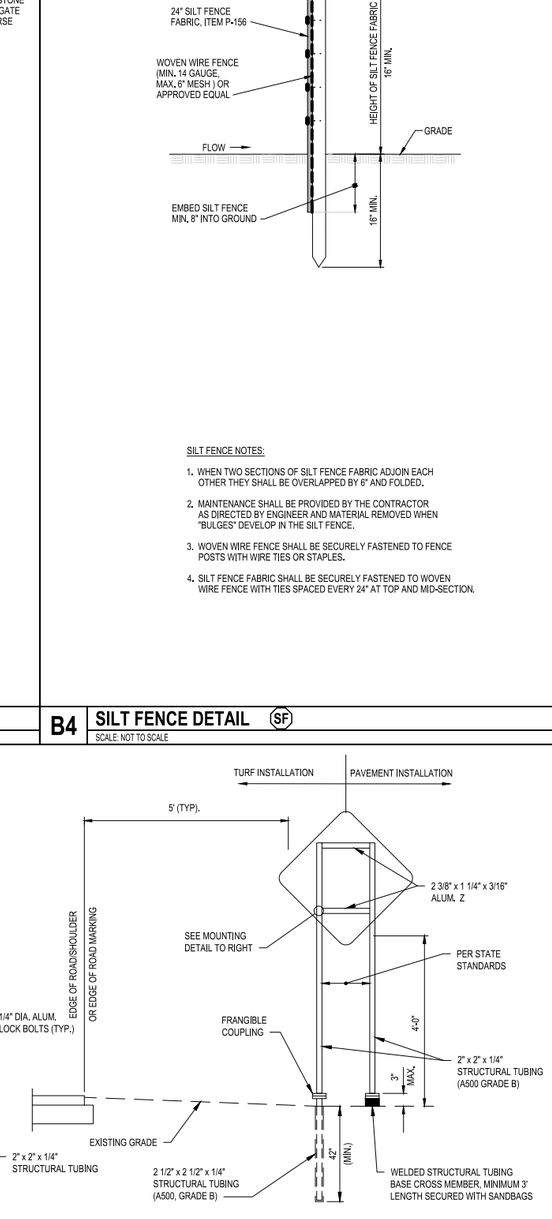
SCALE: NOT TO SCALE



SIGN NOTES:

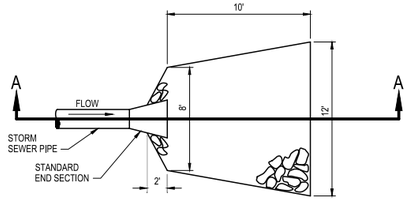
1. SIGN BACKGROUND IS TO BE ORANGE. SIGN LETTERING IS TO BE BLACK, MINIMUM HEIGHT OF 3", AND BE A BOLD LETTERING STYLE SIMILAR TO DETAIL SHOWN ON THIS SHEET.
2. SIGN SHALL BE LOCATED HIGH ENOUGH TO ALLOW EASY VIEWING FROM ALL CONSTRUCTION VEHICLES ENTERING THE CONSTRUCTION SITE.
3. SEE CONSTRUCTION SAFETY PHASING PLANS FOR GENERAL LOCATIONS. THE CONTRACTOR SHALL COORDINATE THE EXACT PLACEMENT AND LOCATION OF ALL CONSTRUCTION TRAFFIC SIGNS WITH THE AIRPORT AND RPR.
4. ALL COSTS FOR PROVIDING INSTALLING, MAINTAINING, AND REMOVAL OF TEMPORARY SIGNS SHALL BE INCLUDED UNDER ITEM [XXXX].

MOUNTING DETAIL



B3 STABILIZED CONSTRUCTION ENTRANCE DETAIL (CE)

SCALE: NOT TO SCALE

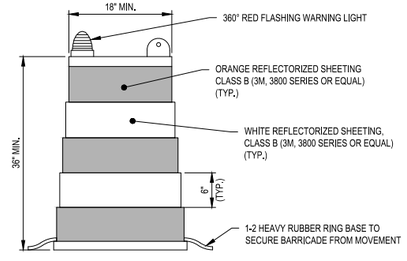


PLAN

NOTE:
ALL MATERIALS REQUIRED FOR THIS ITEM SHALL BE PAID FOR UNDER ITEM P-156 BY THE UNIT COST PER C.Y. FOR ROCK OUTLET PROTECTION

A1 ROCK OUTLET PROTECTION DETAIL TYPE 2 (RP)

SCALE: NOT TO SCALE



NOTE:
BARRICADES SHALL BE SPACED 8' MAX. O.C.

A2 PLASTIC DRUM BARRICADE DETAIL

SCALE: NOT TO SCALE

A3 TEMPORARY CONSTRUCTION SIGN DETAIL

SCALE: NOT TO SCALE

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DETAILS

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SECTION I: DESIGN PARAMETERS

1. CODES AND REFERENCE STANDARDS: 2020 NYS BUILDING CODE, ASCE 7-16

2. STRUCTURAL LOADING DESIGN DATA:

A. ROOF LIVE LOAD:	20 PSF
B. PEMB ROOF COLLATERAL LOAD:	5 PSF
LIVE LOAD REDUCTION	NONE
C. WIND LOAD (3-SEC. GUST):	
ULTIMATE WIND SPEED:	113 MPH
RISK CATEGORY:	II
EXPOSURE CATEGORY:	C
INTERNAL PRESSURE COEFFICIENT:	±0.55
WIND-BORNE DEBRIS REGION	NA
D. SNOW LOAD	
GROUND SNOW LOAD	30 PSF
FLAT-ROOF SNOW LOAD	26 PSF
SNOW EXPOSURE FACTOR (Ce)	1.0
SNOW IMPORTANCE FACTOR (Is)	1.0
THERMAL FACTOR (Ct)	1.2
DRIFT LOADS CALCULATED PER ASCE 7-16	
E. SEISMIC LOAD:	
RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR	1.25
SS	.209
S1	.056
SITE CLASS	D
Sds	.223
Sd1	.089
SEISMIC DESIGN CATEGORY	B
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE
COLD STORAGE:	
BASIC SEISMIC FORCE-RESISTING SYSTEM	BY PEMB MANUFACTURER
RESPONSE MODIFICATION COEFFICIENT, R	BY PEMB MANUFACTURER
SEISMIC RESPONSE COEFFICIENT, Cs	BY PEMB MANUFACTURER
SEISMIC BASE SHEAR, V	BY PEMB MANUFACTURER
UREA/SALT STORAGE	
BASIC SEISMIC FORCE-RESISTING SYSTEM	TIMBER FRAMES
RESPONSE MODIFICATION COEFFICIENT, R	1.5
SEISMIC RESPONSE COEFFICIENT, Cs	0.1486
SEISMIC BASE SHEAR, V	2.32 KIPS

3. HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED FOR 50 PLF OR A CONCENTRATED LOAD OF 200 LBS LOCATED AT ANY POINT APPLIED IN ANY DIRECTION AT THE TOP AND TRANSFER THE LOAD TO THE SUPPORT STRUCTURE. THE LOADS NEED NOT TO ACT CONCURRENTLY.

GENERAL: (THE FOLLOWING REQUIREMENTS TOGETHER WITH THE PROJECT PLANS AND SPECIFICATIONS SHALL APPLY TO THE STRUCTURES IN THIS CONTRACT.)

1. THE CONTRACTOR IS RESPONSIBLE FOR THE SURVEY AND FIELD VERIFYING ALL EXISTING CONDITIONS.

2. WORK ON STRUCTURAL DRAWINGS REPRESENTS FINAL CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL STABILITY OF ALL INTERMEDIATE CONDITIONS DURING CONSTRUCTION.

3. THE CONTRACTOR SHALL COORDINATE THE ARCHITECTURAL, PLUMBING, HVAC, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION NOT INDICATED ON THE STRUCTURAL DRAWINGS. SUCH INFORMATION INCLUDES, AS A MINIMUM, EMBEDDED SLEEVES AND INSERTS, MISCELLANEOUS DETAILS, SPECIAL FLOOR FINISHES, DOOR THRESHOLDS, SLOPES TO DRAINS, NAILERS, OPENINGS IN STRUCTURAL ELEMENTS, ETC.

4. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, TIE-DOWNS, AND/OR SHORING MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.

5. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROCEDURES. THE STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION OR FOR RELATED SAFETY PROCEDURES.

6. TYPICAL NOTES AND DETAILS SHOWN ON STRUCTURAL TYPICAL DETAILS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE ON THE CONTRACT DOCUMENTS. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION ON THE DRAWINGS AS DETERMINED BY THE ENGINEER.

7. DO NOT SCALE DRAWING DIMENSIONS. IN THE EVENT OF A GRID LINE DIMENSION CONFLICT, THE ARCHITECTURAL DRAWINGS SHALL GOVERN.

8. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR ALL PARTS OF THE WORK INCLUDING DESCRIPTION OF DEMOLITION, TEMPORARY BRACING, CONSTRUCTION METHODS AND SEQUENCING, WHERE APPLICABLE NO PERFORMANCE OF WORK SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER.

9. FABRICATION PRIOR TO THE RECEPT OF AN APPROVED SHOP DRAWINGS SHALL BE AT THE CONTRACTOR'S OWN RISK AND THAT INSTALLATION OF ANY WORK PRIOR TO RECEIPT OF AN APPROVED SHOP DRAWING SHALL BE STRICTLY PROHIBITED.

10. FOR ELEVATIONS REFER TO THE PLAN SHEETS.

11. DRILLING, CORING, SAW CUTTING AND ETC. INTO CONCRETE SHALL MEET THE LATEST OSHA REGULATIONS FOR SILICA DUST EXPOSURE.

SECTION II: EXCAVATION

1. DEWATER, EXCAVATE, FILL AND COMPACT SOIL IN PREPARATION FOR SLAB ON GRADE, WALLS, AND FOUNDATION IN ACCORDANCE WITH THE RECOMMENDATIONS PRESENTED IN THE GEOTECHNICAL REPORT PREPARED BY _____ REPORT NUMBER _____ DATED ____ __, 20__.

2. ALL EXCAVATIONS SHALL BE DEWATERED TO MAINTAIN GROUNDWATER AT LEAST 24" BELOW FOOTING BEFORE PLACING OF CONCRETE.

3. SLOPE THE EXTERIOR GRADE AWAY FROM THE STRUCTURE. REFER TO CIVIL PLANS FOR DETAILS.

4. PROVIDE TEMPORARY OR PERMANENT SUPPORTS, SHORING, SHEETING OR BRACING SO THAT NO HORIZONTAL MOVEMENT OR VERTICAL SETTLEMENT OCCURS TO ADJACENT STRUCTURES, STREETS, SOILS OR UTILITIES ADJACENT TO OR WITHIN THE PROJECT SITE.

5. BACKFILL SHALL BE PLACED IN COMPACTED LIFTS PER THE EARTHWORK SPECIFICATIONS.

6. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER.

7. DO NOT BACKFILL BEHIND FOUNDATION WALLS UNTIL THE PERMANENT LATERAL SUPPORT SYSTEM IS IN PLACE AND OF FULL STRENGTH.

8. COMPONENTS OF ANY SUPPORT OF EXCAVATION SYSTEM SHALL REMAIN IN PLACE UNTIL ALL PERMANENT STRUCTURAL SYSTEMS AT AND BELOW GROUND ARE IN PLACE.

SECTION III: SOILS

1. THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT PREPARED BY _____

2. THE GEOTECHNICAL REPORT NAMED ABOVE IS AVAILABLE TO THE CONTRACTOR UPON REQUEST TO THE OWNER. THE ARCHITECT AND ENGINEER WILL NOT BE RESPONSIBLE FOR THE ACCURACY OR APPLICABILITY OF SUCH DATA THEREIN.

3. NO RESPONSIBILITY IS ASSUMED BY THE ENGINEER FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, TEST BORINGS, OR TEST PITS. THESE DATA ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION. THEY REPRESENT CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AT THE TIME DATA WAS COLLECTED.

4. MAXIMUM ALLOWABLE SOIL BEARING PRESSURE = 3000 PSF

5. FOOTINGS TO BEAR ON NATURAL UNDISTURBED SOIL OR COMPACTED FILL PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS TO EXHIBIT A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 (MODIFIED PROCTOR).

6. GEOTECHNICAL ENGINEER MUST REVIEW THE FINAL SITE AND GRADING PLANS TO VALIDATE ALL RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND CONFIRM THEIR FINDINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF INSPECTIONS OR EXAMINATIONS PRIOR TO CONSTRUCTION COMMENCEMENT.

7. PERFORM SOIL COMPACTION TESTING, AT LEAST ONE TEST EVERY 100 FEET OF WALL FOOTING. PROVIDE A MINIMUM OF 4 SOIL COMPACTION TESTS AT EVERY BUILDING.

SECTION IV: POST-INSTALLED ANCHORS

1. ALL POST INSTALLED ANCHORS INTO MASONRY USE HILTI HIT-HY 70 SYSTEM OR APPROVED EQUAL.

2. ALL POST INSTALLED ANCHORS INTO EXISTING CONCRETE USE HILTI HIT-HY 200 INJECTION ADHESIVE ANCHOR OR APPROVED EQUAL.

3. ALL POST-INSTALLED ANCHOR PRODUCTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION PROCEDURES.

4. DRILLING, CORING, SAW CUTTING AND ETC. INTO CONCRETE SHALL MEET THE LATEST OSHA REGULATIONS FOR SILICA DUST EXPOSURE.

SECTION V: CAST-IN-PLACE CONCRETE

1. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

2. STANDARDS:
   - DESIGN: ACI 318 - 2014
   - DETAILS: ACI 315 - 1999
   - MATERIALS: ACI 301 - 2010

3. DESIGN STRENGTH:
   - SLAB ON GRADE: 4000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT AIR ENTRAINED CONCRETE.
   - FOUNDATION WALLS: 4000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT AIR ENTRAINED CONCRETE.
   - SALT STORAGE: 4500 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT AIR ENTRAINED CONCRETE.

4. SUBMIT PROPOSED CONCRETE MIX DESIGN TO THE OWNER'S REPRESENTATIVE AND TESTING LABORATORY CONCURRENTLY FOR REVIEW AND APPROVAL.

5. CONCRETE COVER OVER BARS:
   - CONCRETE DEPOSITED ON GROUND 3".
   - FORMED CONCRETE EXPOSED TO GROUND, WEATHER OR WATER 2".
   - WALLS & SLABS NOT DIRECTLY EXPOSED TO GROUND, WATER, OR WEATHER 1-1/2".

6. CLEAN AND APPLY BONDING AGENT TO ALL EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE. ALL CONCRETE TO CONFORM WITH THE LATEST ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE. (ACI - 301)

7. SECTIONS AND DETAILS MAY NOT SHOW ALL REQUIRED CONCRETE REINFORCEMENT. ADDITIONAL REINFORCEMENT MAY BE DESCRIBED IN SCHEDULES (IF APPLICABLE) AND NOTES.

8. PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH REQUIREMENTS OF ACI 315 UNLESS NOTED OTHERWISE.

9. NOT ALL ITEMS EMBEDDED IN THE CONCRETE ARE SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL OPENINGS AND EMBEDDED ITEMS IN THE CONCRETE PERTAINING TO THE DIFFERENT TRADES AS SHOWN ON THEIR PERSPECTIVE DRAWINGS. SLEEVES, MECHANICAL OPENINGS, CONDUITS, PIPES, RECESSES, DEPRESSIONS, CURBS, AND ALL EMBEDDED ITEMS SHALL BE PROVIDED AS SHOWN ON THE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURERS.

10. EMBEDDED CONDUITS, PIPES, OR OTHER UTILITIES NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. WHERE EMBEDDED ITEMS ARE ALLOWED, THEY SHALL BE SPACED NOT LESS THAN THREE DIAMETERS ON CENTER EACH WAY BUT WITH NOT LESS THAN TWO INCHES CLEAR SPACE BETWEEN EMBEDDED ITEMS. THE TOTAL DEPTH OF ALL EMBEDDED ITEMS AND THE CLEAR SPACE BETWEEN THEM SHALL NOT EXCEED 1/3 OF THE TOTAL CONCRETE DEPTH AND SHALL BE CONFINED TO THE MIDDLE THIRD OF THE CONCRETE DEPTH.

11. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS (EXCEPT SHEAR WALLS) ARE PROHIBITED UNLESS AUTHORIZED BY ENGINEER.

12. UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE SIZE OF CONCRETE PLACEMENTS SHALL BE LIMITED AS FOLLOWS:
   - A. STRIP FOOTINGS AND WALLS: 60 FT (UNLESS INTERMEDIATE CONTROL JOINTS ARE PROVIDED)
   - B. SLABS ON GRADE: 30 FT MAX DIMENSION AND 900 SQ FT. (UNLESS INTERMEDIATE CONTROL JOINTS ARE PROVIDED)
   - C. SLABS ON METAL DECK: 100 FT MAX DIMENSION AND 10,000 SQ FT.

13. PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES U.N.O

14. THROUGH PENETRATIONS FOR CONCRETE WALLS OR SLABS SHALL CONFORM TO STANDARD DETAIL DRAWINGS.

15. MULTIPLE PENETRATIONS SHALL NOT BE SPACED CLOSER THAN THREE TIMES THE DIAMETER OR THREE TIMES THE WIDTH OF THE LARGER OPENING WITHOUT APPROVAL OF THE ENGINEER.

SECTION VI: CONCRETE REINFORCING

1. REINFORCING:
   - MESH: ASTM A-185 (FLAT SHEETS)
   - BARS: ASTM A-615 GRADE 60 - DEFORMED.
   - BARS: WELDABLE REINFORCING BARS TO CONFORM TO ASTM A-706 GRADE 60.

2. SPLICES IN REINFORCEMENT: UNLESS OTHERWISE NOTED, ALL SPLICES AND ANCHORAGES SHALL BE PER ACI. STAGGER SPLICES WHEREVER POSSIBLE AND LOCATE SO AS NOT TO IMPAIR STRENGTH OF MEMBERS.

3. REINFORCEMENT WORK OF DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318), ACI DETAILING MANUAL-2004 (SP 66) CRSI MANUAL OF STANDARD PRACTICE (MSP 2009), AND THE STRUCTURAL WELDING CODE- REINFORCING STEEL (AWS D1.1).

4. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD ALL REINFORCEMENT SECURELY IN POSITION.

5. WHERE CONTINUOUS REINFORCEMENT IS CALLED FOR , IT SHALL BE EXTENDED CONTINUOUSLY AROUND CORNERS AND LAPPED AT SPLICES OR AT DISCONTINUOUS ENDS. LAPS SHALL BE CLASS B TENSION LAP SPLICES UNLESS OTHERWISE NOTED.

6. WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ENGINEER. IN NO CASE SHALL THE REINFORCEMENT BE LESS THAN THE MINIMUM PERMITTED BY THE APPLICABLE CODES.

7. WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.

8. WHERE THERE IS A CONFLICT BETWEEN COLUMN VERTICAL BARS AND SLAB OR BEAM HORIZONTAL BARS THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND THE HORIZONTAL BARS SHALL BE ADJUSTED.

9. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

10. COLUMN DOWELS SHALL BE SET WITH A TEMPLATE SO AS TO BE ENCLOSED BY THE COLUMN TIES.

11. DOWELS SHALL MATCH BAR SIZES UNLESS OTHERWISE NOTED.

12. WELDED WIRE FABRIC SHALL BE LAPPED 8 INCHES OR 1 1/2 SQUARES WHICHEVER IS LARGER AND SHALL BE WIRED TOGETHER.

13. REINFORCEMENT SHALL NOT BE TACK WELDED. REINFORCING BARS TO BE WELDED SHALL CONFORM TO ASTM A706 FY=60KSI.

14. REINFORCEMENT INSTALLATION SHALL BE COMPLETED AT LEAST 24 HOURS BEFORE A CONCRETE PLACEMENT OR SHALL BE COORDINATED WITH THE SPECIAL INSPECTOR TO ENSURE PROPER TIME IS ALLOWED FOR THE INSPECTION OF THE REINFORCING. NOTIFY THE ENGINEER OF COMPLETION.

15. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE AT THE POSITIONS SHOWN ON THE DRAWINGS BEFORE PLACING CONCRETE.

16. UNLESS NOTED OTHERWISE, ALL BARS SHALL BE EMBEDDED TO A MINIMUM DEPTH (Ld OR Ldh)

SECTION VII: CONCRETE FLOOR SLABS

1. ALL SLABS SHALL BE PLACED ON 6" OF FREE DRAINING COMPACTED SELECT STRUCTURAL FILL.

2. THE DESIGN OF CONCRETE MIXES, LOCATING OF CONSTRUCTION JOINTS IN SLABS, STAGGERING OF POUR PLACEMENTS, LOCATION OF POUR STRIPS, AND PLACEMENT AND CURING PROCEDURES ARE TO BE PERFORMED BY THE CONTRACTOR IN A MANNER THAT WILL MINIMIZE SHRINKAGE CRACKING OF THE SLABS.

3. PLACE INTERIOR SLABS ON VAPOR RETARDER (15 MIL. MIN UNO) WITH SOILS PREPARED PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

4. SUBSEQUENT PLACEMENT OF ALTERNATE SLAB STRIPS SHOULD NOT BE MADE SOONER THAN 24 HOURS AFTER THE COMPLETION OF SLAB FINISHING OPERATIONS AND THE INITIATION OF CURING PROCEDURES.

5. THE CONTRACTOR SHALL REPAIR ALL SHRINKAGE CRACKS DESIGNATED AS UNACCEPTABLE BY THE ENGINEER BY EPOXY INJECTION AT NO ADDITIONAL COST TO THE CONTRACT.

6. REPAIR MATERIAL SHALL BE APPROPRIATE FOR THE APPLICATION AS RECOMMENDED BY THE MANUFACTURER. PRODUCTS SHALL BE BY SIKA CORPORATION, OR APPROVED EQUAL.

7. THE CONTRACTOR SHALL SUBMIT TO THE EOR FOR REVIEW PRIOR TO THE DEVELOPMENT OF SLAB REINFORCING SHOP DRAWINGS, A PROPOSED SLAB CONSTRUCTION JOINT LAYOUT PLAN, ALONG WITH PROPOSED METHODS FOR CONTROLLING SHRINKAGE CRACKING IN THE SLABS. CONTROL JOINT SPACING NOT TO EXCEED 15 FEET IN ANY DIRECTION, WITH CONTROL JOINT LAYOUT CREATING RECTANGULAR SHAPED SLAB SECTIONS. CONTROL JOINT SLAB RECTANGULAR SHAPE CONFIGURATION NOT TO EXCEED A LENGTH TO WIDTH RATIO OF 1.5 IN ANY DIRECTION.

SECTION VIII: WOOD TRUSSES

1. DESIGN OF PLATE CONNECTED TRUSSES SHALL CONFORM TO NATIONAL DESIGN STANDARDS (NDS-2018). TRUSS PLATE INSTITUTE CRITERIA (TPI-2014). TRUSS FABRICATION SHALL COMPLY WITH TPI QUALITY CONTROL STANDARDS (QCM-77).

2. TRUSS DESIGNS AND LAYOUTS SHALL BE SEALED BY A NEW YORK LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO FABRICATION. SUBMITTAL SHALL CLEARLY INDICATE DESIGN LOADS, MEMBER STRESSES, LUMBER GRADES, SPLICE LOCATIONS, REQUIRED BLOCKING, BRIDGING, BRACING, PLACEMENT, PLACEMENT PROCEDURES, LOAD BEARING WALLS, TRUSS DESIGNATION, BUILDING NUMBER, AND NAME OF PROJECT. LOADING SHALL BE AS NOTED ON THE DRAWINGS.

3. DURING CONSTRUCTION, TRUSSES SHALL BE ERECTED, BRACE, AND BLOCKED IN ACCORDANCE WITH COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES (HIB-91) BY TPI. ALL TEMPORARY BRACING SHALL NOT BE REMOVED AND CONSIDERED PERMANENT UNLESS REMOVAL IS REQUIRED FOR COMPLETION OF WORK.

4. PROVIDE PERMANENT 2X4 LATERAL "X" BRACING IN THE PLANE OF THE TRUSS WEBS AND FRAME AT A 45 DEGREE ANGLE. NAIL TO ARCH CROSSING TRUSS WITH AT LEAST 2-16D NAILS. THE "X" BRACING SHALL ALIGN WITH THE BOTTOM CHORD LATERAL BRACING AND OCCUR AT EACH END OF THE BUILDING AT 25' INTERVALS.

5. PROVIDE PRE-ENGINEERED TRUSS SHEAR BLOCKING BETWEEN TRUSSES AT ALL SHEAR WALL LOCATIONS. TRUSS SUPPLIER SHALL PROVIDE TRUSS SHEAR BLOCK TO TRUSS COMPONENT CONNECTION/DETAIL. SHEAR BLOCK SHALL BE FULL HEIGHT OF TRUSS ASSEMBLY.

LEGEND / ABBREVIATIONS:

AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	FD	FLOOR DRAIN	SCH	SCHEDULE
ADDL	ADDITIONAL	FF	FINISHED FLOOR	SIM	SIMILAR
AFF	ABOVE FINISHED FLOOR	FS	FOUNDATION STEP	SLBB	SHORT LEG BACK TO BACK
ALT	ALTERNATE	GALV	GALVANIZED	SOG	SLAB ON GRADE
BPE	BOTTOM OF PILE ELEVATION	GB-_	GRADE BEAM	TB-_	TIE BEAM
B/F	BOTTOM OF FOOTING	HORIZ	HORIZONTAL	T&B	TOP AND BOTTOM
BRG	BEARING	HP	HIGH POINT	T/PC	TOP OF PILE CAP
CANT	CANTILEVER	K	KIP	T/PIER	TOP OF PIER ELEVATION
CFMF	COLD-FORMED METAL FRAMING	L	ANGLE	T/S	TOP OF STEEL ELEVATION
CJ	CONTROL JOINT	LLBB	LONG LEG BACK TO BACK	T/SLAB	TOP OF SLAB ELEVATION
CJP	COMPLETE JOINT PENETRATION WELD	LLH	LONG LEG HORIZONTAL	T/WALL	TOP OF WALL ELEVATION
CL	CENTERLINE	LLV	LONG LEG VERTICAL	TYP	TYPICAL
CLR	CLEAR	LONG	LONGITUDINAL	UNO	UNLESS NOTED OTHERWISE
CMU	CONCRETE MASONRY UNIT	LP	LOW POINT	VERT	VERTICAL
COL	COLUMN	LW	LIGHT WEIGHT	WP	WORK POINT
COMP	COMPRESSIBLE	MAX	MAXIMUM	WWF	WELDED WIRE FABRIC
CONC	CONCRETE	MIN	MINIMUM	[_]	NUMBER OF STUDS
CONT	CONTINUOUS	MO	MASONRY OPENING	2L	DOUBLE ANGLE
DIA	DIAMETER	NIC	NOT IN CONTRACT		
do	DO OVER	OC	ON CENTER		
DW	DOWEL	OCEF	ON CENTER, EACH FACE		
D2L	DEFORMED BAR ANCHOR	OCEW	ON CENTER, EACH WAY		
EF	EACH FACE	P_	PIER		
EFEW	EACH FACE, EACH WAY	PC_	PILE CAP		
EL	ELEVATION	PJP	PARTIAL JOINT PENETRATION WELD		
EJ	EXPANSION JOINT	PL	PLATE		
EMB	EMBEDMENT	RD	ROOF DRAIN		
EMP	EMBED PLATE	REINF	REINFORCEMENT		
EW	EACH WAY	REQD	REQUIRED		
EXIST	EXISTING	RO	ROOF OPENING		
EXP	EXPANSION				

C4 ABBREVIATIONS
SCALE: NOT TO SCALE

A1 GENERAL NOTES
SCALE: NOT TO SCALE

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PRELIMINARY NOT FOR CONSTRUCTION

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	128.065.001
DATE:	AUGUST 2024
DRAWN BY:	B. ZUHRIC
DESIGNED BY:	B. ZUHRIC
CHECKED BY:	K. SPYTKO, PE

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

GENERAL NOTES

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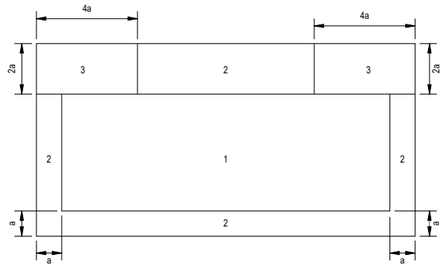


PLAN ON ROOF

ELEVATION OF SIDE WALLS

ZONE	EFF. AREA (SQFT)	PRES (+VE) (PSF)	PRES (-VE) (PSF)
1	<10sf	26	36
	20sf	25	35
	50sf	23	34
	>100sf	21	33
2	<10sf	26	56
	20sf	25	52
	50sf	23	47
	>100sf	21	43
3	<10sf	26	78
	20sf	25	73
	50sf	23	67
	>100sf	21	63
4	<10sf	38	41
	20sf	37	40
	50sf	35	38
	100sf	34	37
	>500sf	31	34
5	<10sf	38	48
	20sf	37	46
	50sf	35	42
	100sf	34	40
	>500sf	31	34

COMPONENTS AND CLADDING WIND PRESSURE NOTES:

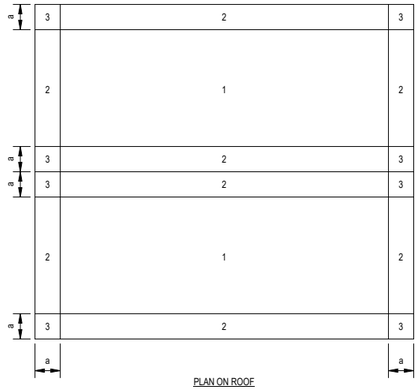
1. WIND PRESSURES SHOWN ARE ULTIMATE LOADS CALCULATED IN ACCORDANCE WITH ASCE 7-16

2. LINEAR INTERPOLATION FOR VALUES BETWEEN THOSE SHOWN IN THE TABLE IS ALLOWED.

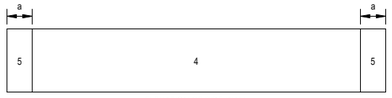
3. SEE ASCE 7-16 FOR DEFINITIONS OF AREAS SHOWN.

4. (+VE) ACTS TOWARDS THE SURFACE; (-VE) ACTS AWAY FROM THE SURFACE

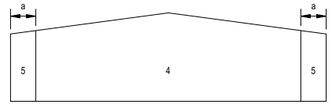
A3 C&C WIND LOAD DIAGRAM - MONOSLOPE ROOF
SCALE: 1" = 1'-0"



PLAN ON ROOF



ELEVATION OF SIDE WALL



ELEVATION OF GABLE WALL

ZONE	EFF. AREA (SQFT)	PRES (+VE) (PSF)	PRES (-VE) (PSF)
1	<10sf	37	38
	20sf	35	37
	50sf	34	35
	>100sf	34	34
2	<10sf	37	43
	20sf	35	42
	50sf	34	40
	>100sf	34	38
3	<10sf	37	43
	20sf	35	42
	50sf	34	40
	>100sf	34	38
4	<10sf	38	41
	20sf	37	40
	50sf	35	38
	100sf	34	37
	>500sf	31	34
5	<10sf	38	48
	20sf	37	46
	50sf	35	42
	100sf	34	40
	>500sf	31	34

COMPONENTS AND CLADDING WIND PRESSURE NOTES:

1. WIND PRESSURES SHOWN ARE ULTIMATE LOADS CALCULATED IN ACCORDANCE WITH ASCE 7-16

2. LINEAR INTERPOLATION FOR VALUES BETWEEN THOSE SHOWN IN THE TABLE IS ALLOWED.

3. SEE ASCE 7-16 FOR DEFINITIONS OF AREAS SHOWN.

4. (+VE) ACTS TOWARDS THE SURFACE; (-VE) ACTS AWAY FROM THE SURFACE

A4 C&C WIND LOAD DIAGRAM - GABLE ROOF
SCALE: 1" = 1'-0"

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CHECKED BY: K. SPYTKO, PE

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LOADING DIAGRAMS

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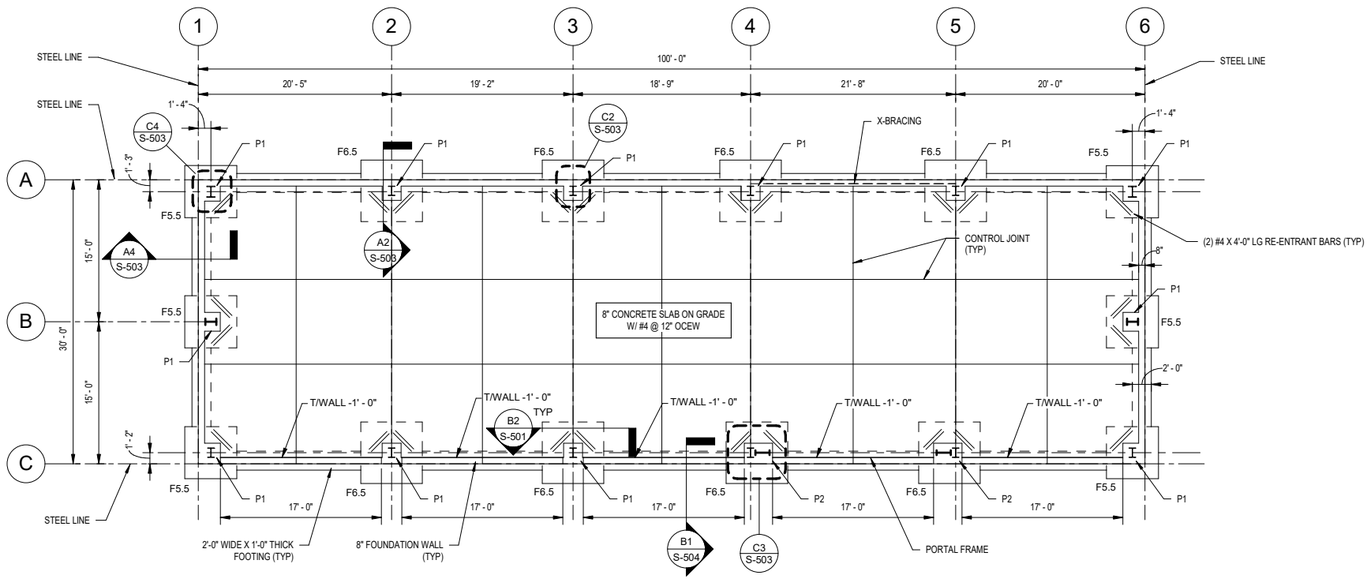

NOTE: FOUNDATION PLAN IS FOR BIDDING PURPOSES ONLY. FINAL FOUNDATION DESIGN WILL BE PROVIDED ONCE APPROVED PRE-ENGINEERED METAL BUILDING SHOP DRAWINGS HAVE BEEN RECEIVED

FOUNDATION AND SLAB PLAN GENERAL NOTES:

1. ELEVATIONS REFERENCED FROM LEVEL 1 T/CONC = 0'-0"
2. REFER TO SHEETS S-001, S-501 AND S-502 FOR GENERAL FOUNDATION NOTES AND STANDARD DETAILS
3. COORDINATE ACTUAL SIZE AND LOCATION OF WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS INCLUDING THEIR APPROVED SHOP DRAWINGS TO ENSURE COORDINATION OF ALL TRADES
4. REFER TO CIVIL DRAWINGS FOR LOCATIONS OF UNDERGROUND UTILITIES
5. T/FOOTING = -4'-0" UNLESS NOTED OTHERWISE
6. T/WALL = 1'-0" UNLESS NOTED OTHERWISE
7. T/PIER = 1'-0" UNLESS NOTES OTHERWISE
8. ALL FOUNDATION FOOTINGS SHALL BE PLACED ON AT LEAST 1'-0" OF COMPACTED SELECT STRUCTURAL FILL PER THE GEOTECHNICAL REPORT
9. PROVIDE (2) - #4 x 4'-0" LONG SLAB REINFORCEMENT AT ALL RE-ENTRANT CORNERS OF SLABS
10. PROVIDE VAPOR RETARDER BELOW ALL INTERIOR SLABS ON GRADE
11. ALL SLABS ON GRADE SHALL BE PLACED ON AT LEAST 0'-6" OF COMPACTED SELECT STRUCTURAL FILL

T/CONC = 0'-0" UNO

REFER TO CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATION

PLAN NORTH

A1 FOUNDATION PLAN - COLD STORAGE BUILDING

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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PRELIMINARY
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HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION
	REVISIONS	

PROJECT NO:	128.065.001
DATE:	AUGUST 2024
DRAWN BY:	B. ZUHRIC
DESIGNED BY:	B. ZUHRIC
CHECKED BY:	K. SPYTKO, PE

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COLD STORAGE FOUNDATION AND SLAB PLAN

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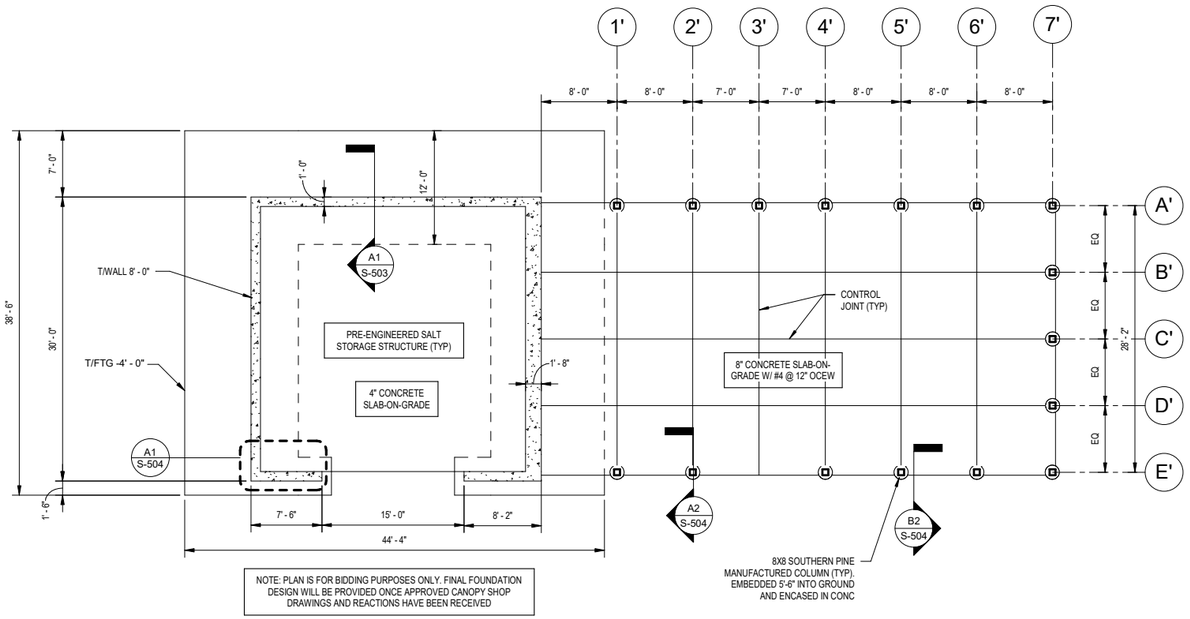

NOTE: PLAN IS FOR BIDDING PURPOSES ONLY. FINAL FOUNDATION DESIGN WILL BE PROVIDED ONCE APPROVED CANOPY SHOP DRAWINGS AND REACTIONS HAVE BEEN RECEIVED

FOUNDATION AND SLAB PLAN GENERAL NOTES:

1. ELEVATIONS REFERENCED FROM LEVEL 1 T/CONC = 0'-0"
2. REFER TO SHEETS S-001, S-501 AND S-502 FOR GENERAL FOUNDATION NOTES AND STANDARD DETAILS
3. COORDINATE ACTUAL SIZE AND LOCATION OF WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS INCLUDING THEIR APPROVED SHOP DRAWINGS TO ENSURE COORDINATION OF ALL TRADES
4. REFER TO CIVIL DRAWINGS FOR LOCATIONS OF UNDERGROUND UTILITIES
5. T/FOOTING = -4'-0" UNLESS NOTED OTHERWISE
6. T/WALL = 0'-0" UNLESS NOTED OTHERWISE
7. T/PIER = 0'-6" UNLESS NOTES OTHERWISE
8. ALL FOUNDATION FOOTINGS SHALL BE PLACED ON AT LEAST 1'-0" OF COMPACTED SELECT STRUCTURAL FILL PER THE GEOTECHNICAL REPORT
9. PROVIDE (2) - #4 x 4'-0" LONG SLAB REINFORCEMENT AT ALL RE-ENTRANT CORNERS OF SLABS
10. PROVIDE VAPOR RETARDER BELOW ALL INTERIOR SLABS ON GRADE
11. ALL SLABS ON GRADE SHALL BE PLACED ON AT LEAST 6" OF COMPACTED SELECT STRUCTURAL FILL

T/CONC = 0'-0" UNO

REFER TO CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATION

PLAN NORTH

A1 FOUNDATION PLAN - SALT STORAGE

SCALE: 1/8" = 1'-0"

0 4" 8" 16"

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SALT STORAGE FOUNDATION AND SLAB PLAN

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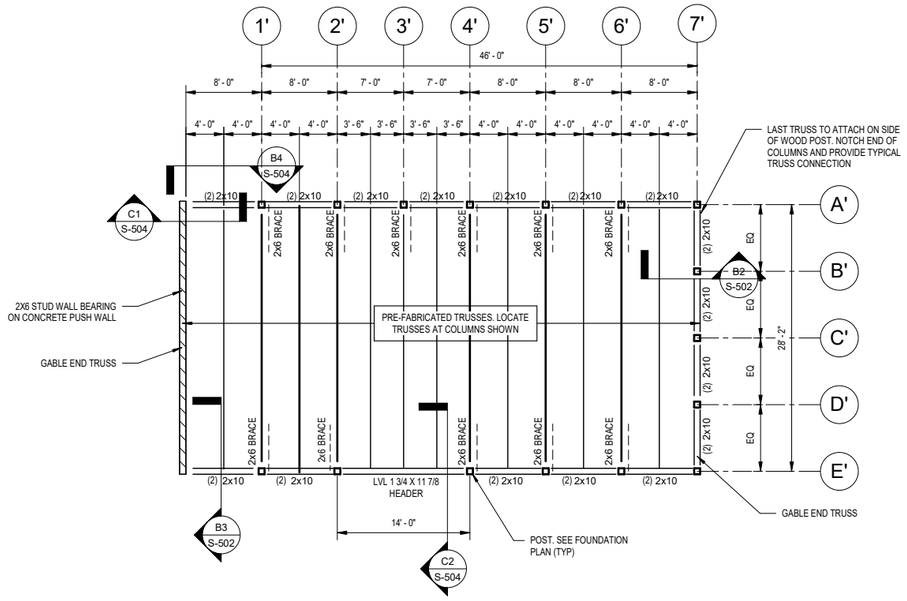

ROOF PLAN GENERAL NOTES:

1. REFER TO SHEET S-001 FOR STEEL, JOIST, AND METAL DECK NOTES
2. REFER TO SHEET S-601 FOR COLUMN SCHEDULE
3. TOP OF FRAMING (T/FRAMING) ELEVATION IS 13'-6". ELEVATIONS NOTES (+X") OR (-X") DENOTES THE ELEVATION FROM PLAN T/S ELEVATION
4. FOR TRUSS LOADING DIAGRAM, SEE A3 / S-504

T/FRAMING = 13'-6" UNO

REFER TO CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATION

PLAN NORTH

A1 FRAMING PLAN - SALT STORAGE

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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SALT STORAGE ROOF PLAN

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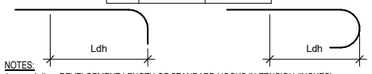
BAR SIZE	F'c = 4000 psi	
	Lhb	0.7Lhb
#3	7	6
#4	9	7
#5	12	8
#6	14	10
#7	17	12
#8	19	13
#9	21	15
#10	24	17
#11	27	19



NOTES:
1. Ldh = DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION (INCHES).
2. Ldh = Lhb UNLESS CONDITIONS OF ITEM 3 ARE SATISFIED.
3. Ldh = 0.7Lhb WHEN SIDE COVER NORMAL TO PLANE OF HOOK IS NOT LESS THAN 2 1/2 INCHES AND FOR 90 DEGREE HOOKS, COVER ON BAR EXTENSION BEYOND HOOK IS NOT LESS THAN 2 INCHES.
4. HOOKS SHALL NOT BE CONSIDERED EFFECTIVE FOR DEVELOPING BARS IN COMPRESSION.
5. VALUES SHOWN ARE FOR GRADE 60 BARS. MULTIPLY BY 1.25 FOR GRADE 75 BARS.
6. Ldh SHALL BE MULTIPLIED BY 1.2 FOR EPOXY-COATED HOOKED BARS.

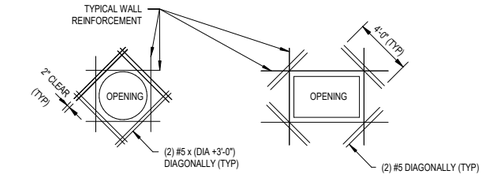
TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS- NORMAL WEIGHT CONCRETE (GRADE 60 REINFORCING BARS)

BAR SIZE	F'c = 4000 psi	
	CLASS A (1.0 Ld)	CLASS B (1.3 Ld)
#3	12	12
#4	12	15
#5	15	19
#6	17	22
#7	28	37
#8	36	47
#9	44	57
#10	54	70
#11	64	84

NOTES:
1. Ld = TENSION DEVELOPMENT LENGTH.
2. ALL SPLICE LENGTHS ARE IN INCHES.
3. FOR TOP BARS, MULTIPLY SPLICE LENGTHS BY 1.30. TOP BARS REQUIRE A MINIMUM OF 12" FRESH CONCRETE BELOW BAR. FOR TOP REINFORCEMENT IN SLABS 12" THICK OR LESS, USE VALUES IN TABLE.
4. FOR EPOXY-COATED BARS, MULTIPLY SPLICE LENGTHS BY 1.5. THE PRODUCT OF THE TOP BAR MULTIPLIER AND THE EPOXY-COATED BAR MULTIPLIER NEED NOT BE MORE THAN 1.7.
5. WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR, BUT MAY NOT BE LESS THAN THE CLASS A SPLICE LENGTH OF THE LARGER BAR.
6. SPLICE LENGTHS ARE BASED OFF A MINIMUM OF 1 1/2" OF COVER.

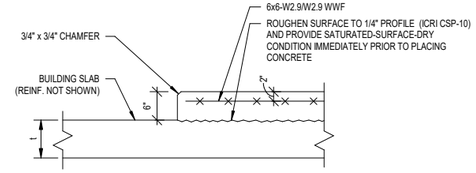
TENSION DEVELOPMENT AND SPLICE LENGTHS- NORMAL WEIGHT CONCRETE (GRADE 60 REINFORCING BARS)

C1 CONCRETE REINFORCEMENT TENSION DEVELOPMENT AND SPLICE LENGTHS
SCALE: 1/2" = 1'-0"



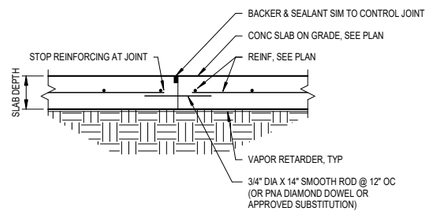
NOTES:
1.) FOR WALLS WITH OPENINGS GREATER THAN 6" IN ANY DIRECTION. PLACE BARS AT EACH FACE FOR WALLS WITH (2) LAYERS OF REINFORCING.
2.) FOR WALLS WITH REINFORCEMENT LARGER THAN #5 BARS, MATCH WALL REINFORCEMENT BAR SIZE.

C3 WALL OPENING REINFORCING DETAIL
SCALE: 3/4" = 1'-0"



NOTES:1) HOUSEKEEPING PADS NOT SHOWN ON STRUCTURAL DRAWINGS.
2) SEE ARCHITECTURAL DRAWINGS FOR PAD SIZES AND LOCATIONS.
3) DETAIL NOT APPLICABLE FOR MECHANICAL EQUIPMENT BASES.
4) SEE PLAN AND TYPICAL SLAB DETAILS FOR BUILDING SLAB INFORMATION.

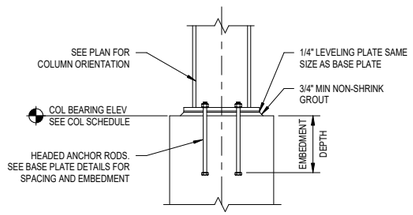
C4 TYP HOUSEKEEPING PAD
SCALE: 3/4" = 1'-0"



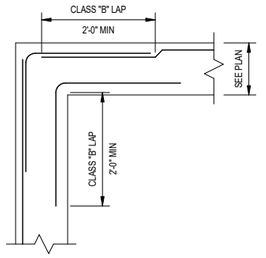
NOTES:

1. CONTRACTOR TO PROVIDE A PROPOSED CONSTRUCTION JOINT LAYOUT PLAN FOR APPROVAL. SEE THE STRUCTURAL GENERAL NOTES FOR LAYOUT GUIDELINES.

B1 SOG CONSTR JOINT
SCALE: 3/4" = 1'-0"



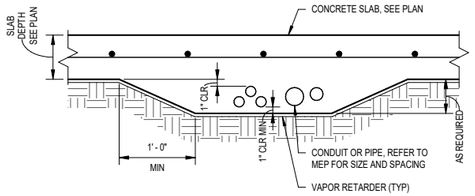
B2 TYPICAL COLUMN BASE PLATE ELEVATION
SCALE: 3/4" = 1'-0"



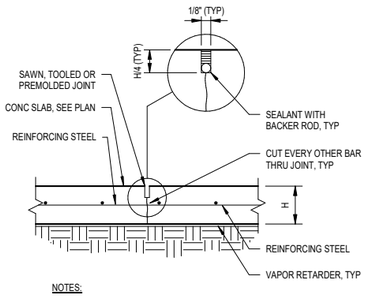
NOTE:

VERTICAL REINFORCING NOT SHOWN FOR CLARITY.

B3 TYPICAL CONCRETE WALL CORNER DETAIL
SCALE: 3/4" = 1'-0"



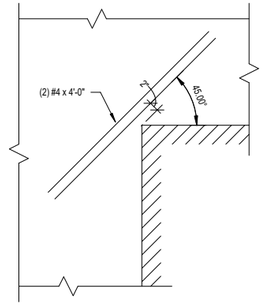
B4 SOG @ CONDUIT
SCALE: 1" = 1'-0"



NOTES:

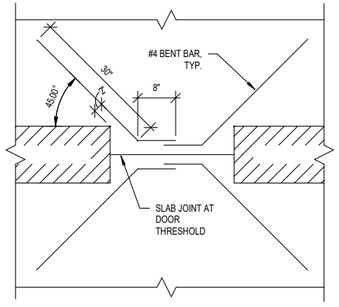
1. JOINT TO BE SAWN WITHIN 12 HOURS AFTER PLACING CONCRETE.
2. PROVIDE CONTROL JOINTS AS SHOWN ON PLAN.

A1 SOG CONTROL JOINT
SCALE: 3/4" = 1'-0"

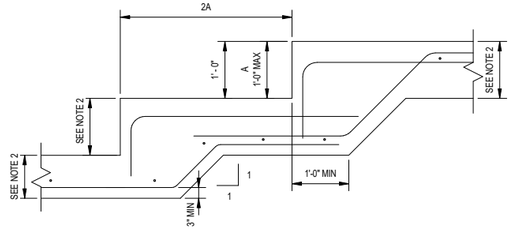


TYP. RE-ENTRANT CORNER

A2 SOG RE-ENTRANT CORNER REINF
SCALE: 3/4" = 1'-0"



RE-ENTRANT CORNERS AT DOORS



NOTE:
1.) REINFORCING SIZE AND SPACING TO MATCH FOOTING REINFORCEMENT.
2.) THICKNESS TO MATCH CONTINUOUS FOUNDATION. SEE PLAN.

A4 FOUNDATION STEP DETAIL
SCALE: 3/4" = 1'-0"

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TYPICAL DETAILS

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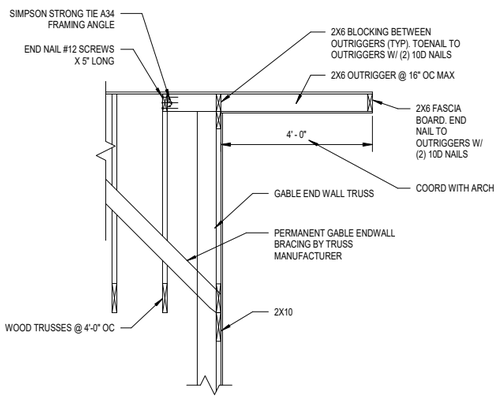
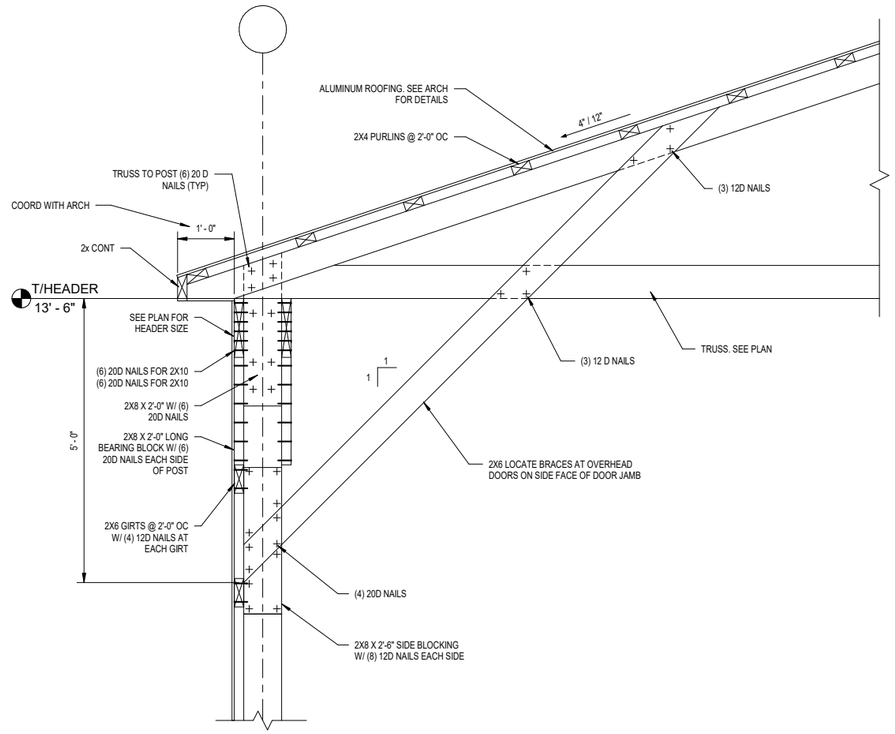
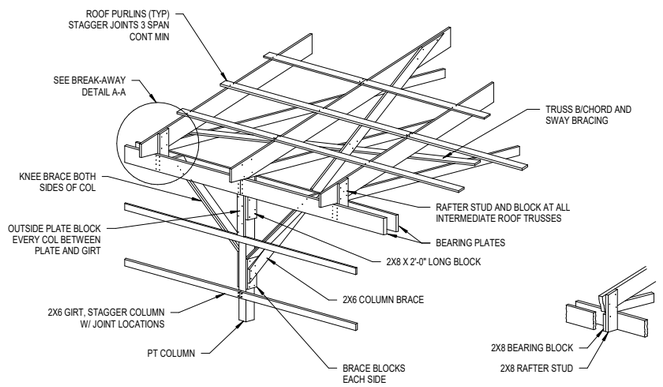


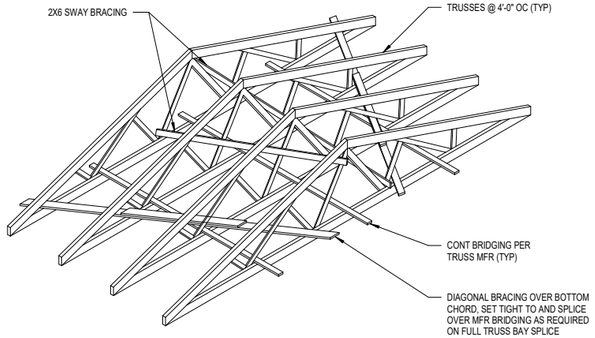
B2 GABLE END ROOF SECTION
SCALE: 1/2" = 1'-0"



B3 TYPICAL HEADER CONENCTION
SCALE: 3/4" = 1'-0"



A1 TYPICAL TRUSS CONNECTION DETAIL
SCALE: 1/4" = 1'-0"



A3 SWAY BRACING DETAIL
SCALE: 3/4" = 1'-0"

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TYPICAL DETAILS

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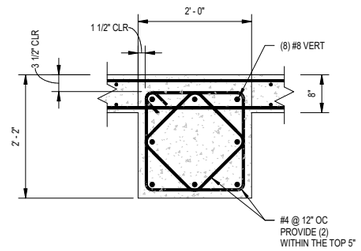
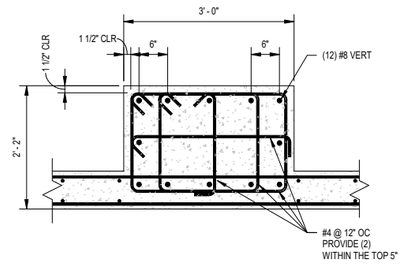
(F) FOOTING SCHEDULE				
MARK	DIMENSIONS			REINFORCING
	"W"	"L"	"H"	
F5.5	5' - 6"	5' - 6"	1' - 6"	(8) #6 EACH WAY BOTTOM
F6.5	6' - 6"	6' - 6"	1' - 6"	(8) #6 EACH WAY BOTTOM

PIER SCHEDULE				
MARK	SIZE (WIDTH×LENGTH)	VERT. REINF.	T/PIER EL.	REF. DETAIL
P1	24 x 24	(8) #8	0' - 8"	C2/S-504
P2	36 x 24	(12) #8	0' - 8"	C3/S-504

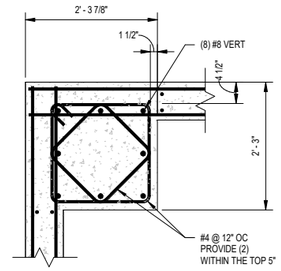
C1 FOOTING AND PIER SCHEDULE
SCALE: NTS



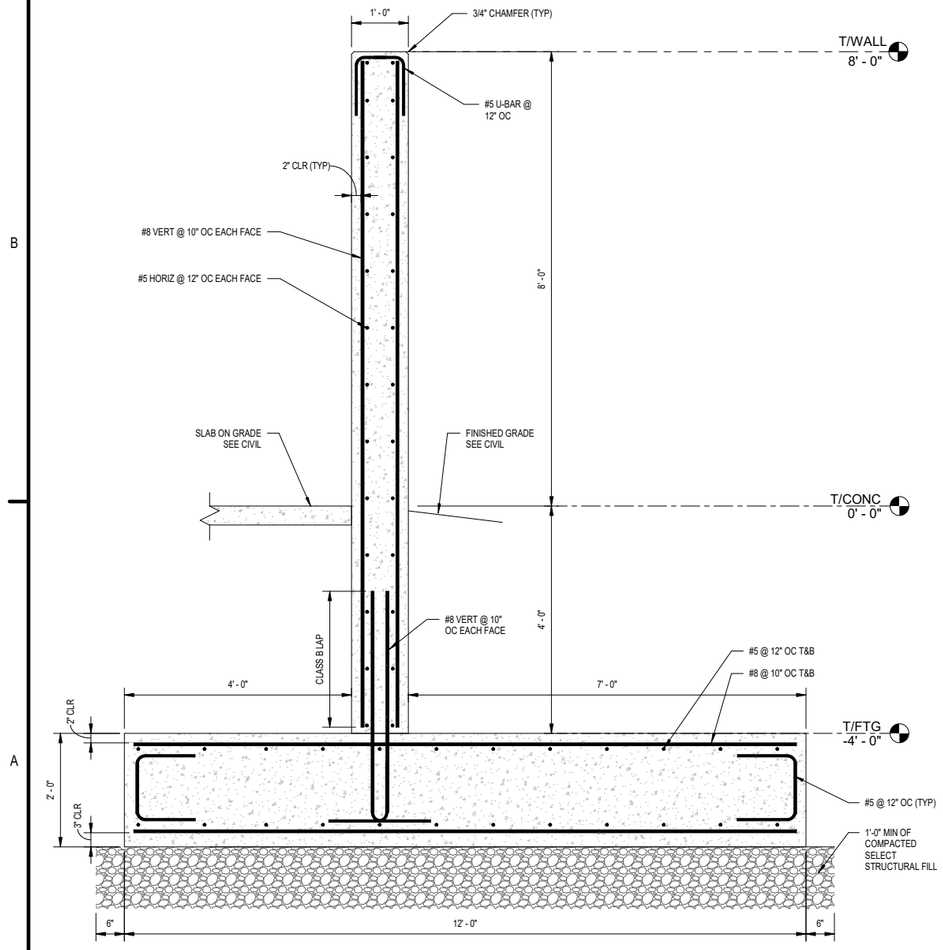
C2 PIER P1
SCALE: 3/4" = 1'-0"



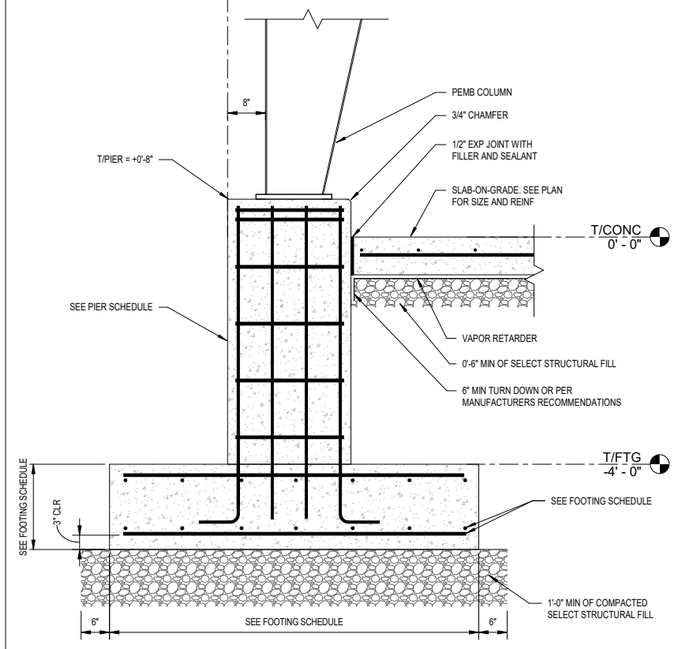
C3 PIER P2
SCALE: 3/4" = 1'-0"



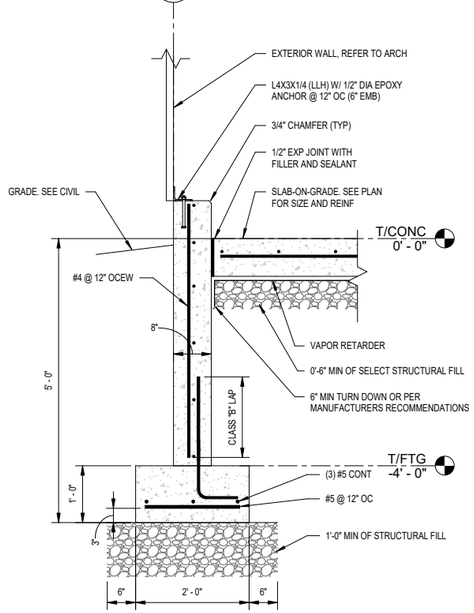
C4 PIER P1 - CORNER DETAIL
SCALE: 3/4" = 1'-0"



A1 PUSH WALL SECTION
SCALE: 3/4" = 1'-0"



A2 COLD STORAGE COLUMN FOUNDATION
SCALE: 3/4" = 1'-0"



A4 TYP COLD STORAGE FOUNDATION WALL DETAIL
SCALE: 3/4" = 1'-0"

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DETAILS

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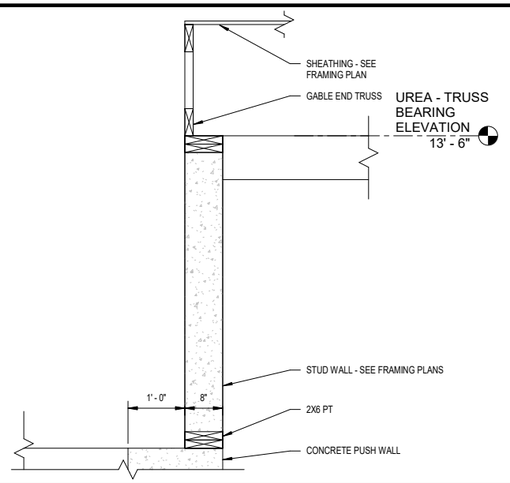
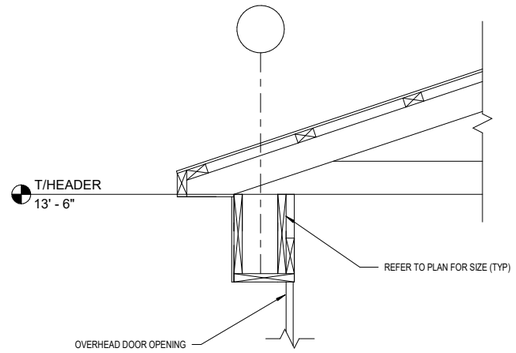
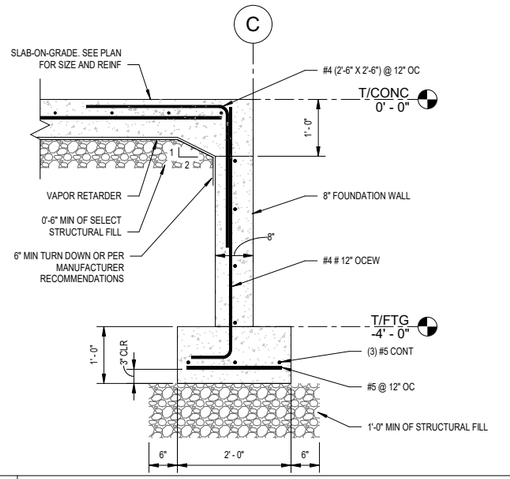


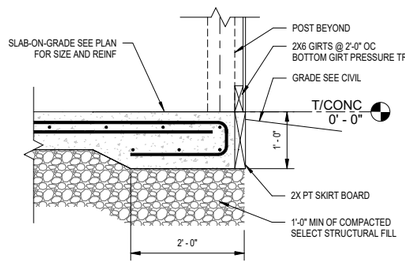
C1 SHEAR WALL FRAMING DETAIL
SCALE: 3/4" = 1'-0"



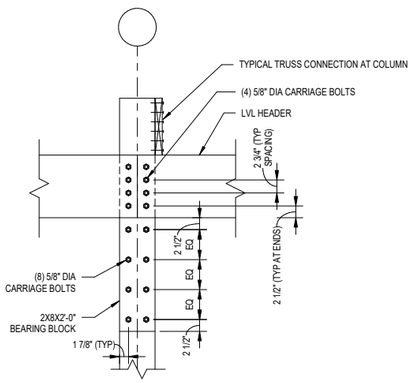
C2 OVERHEAD DOOR HEADER
SCALE: 3/4" = 1'-0"



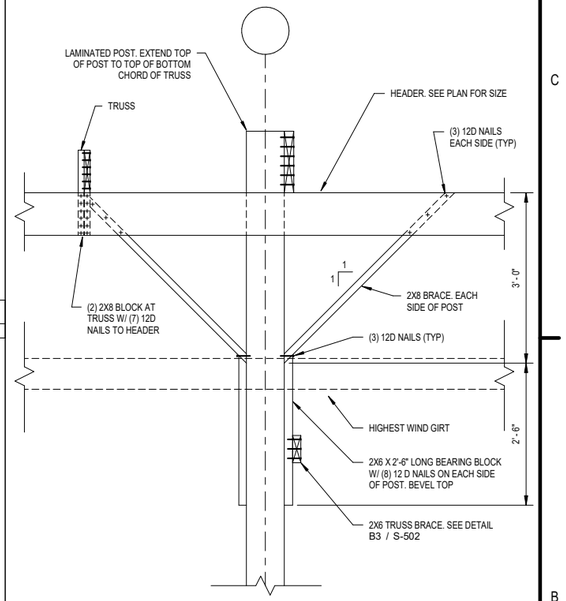
B1 COLD STORAGE OVERHEAD DOOR FOUNDATION
SCALE: 3/4" = 1'-0"



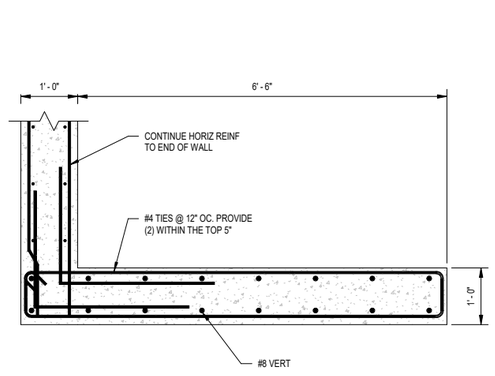
B2 TYP UREA STORAGE THICKENED SLAB EDGE
SCALE: 3/4" = 1'-0"



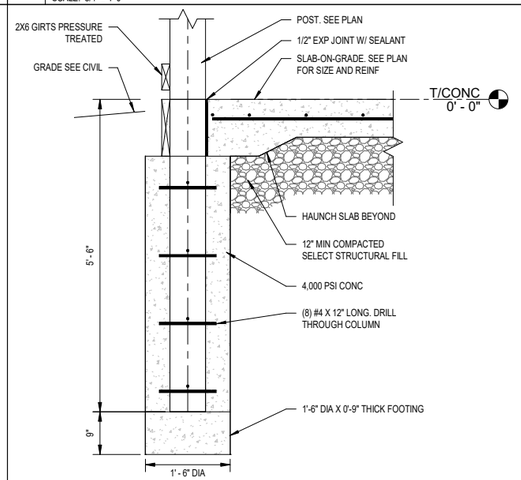
B3 TYP HEADER CONNECTION AT OVERHEAD DOOR
SCALE: 3/4" = 1'-0"



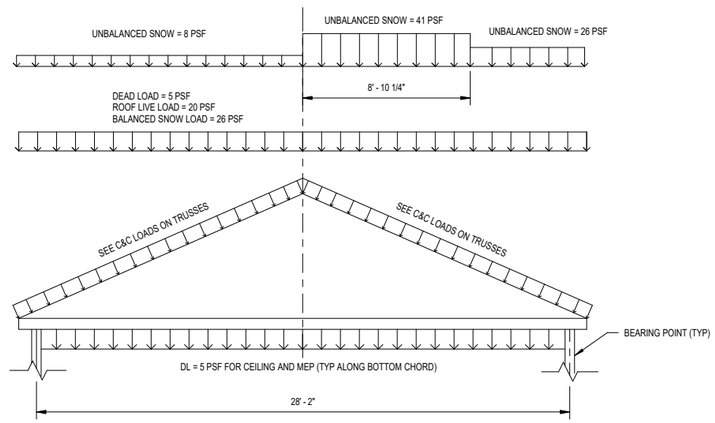
B4 TYPICAL BRACING DETAIL
SCALE: 3/4" = 1'-0"



A1 SALT STORAGE END OF WALL DETAIL
SCALE: 3/4" = 1'-0"



A2 TYP UREA STORAGE POST DETAIL
SCALE: 3/4" = 1'-0"



A3 TRUSS LOADING DIAGRAM
SCALE: 1/4" = 1'-0"

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HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	128.065.001
DATE:	AUGUST 2024
DRAWN BY:	B. ZUHRIC
DESIGNED BY:	B. ZUHRIC
CHECKED BY:	K. SPYTKO, PE

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DETAILS

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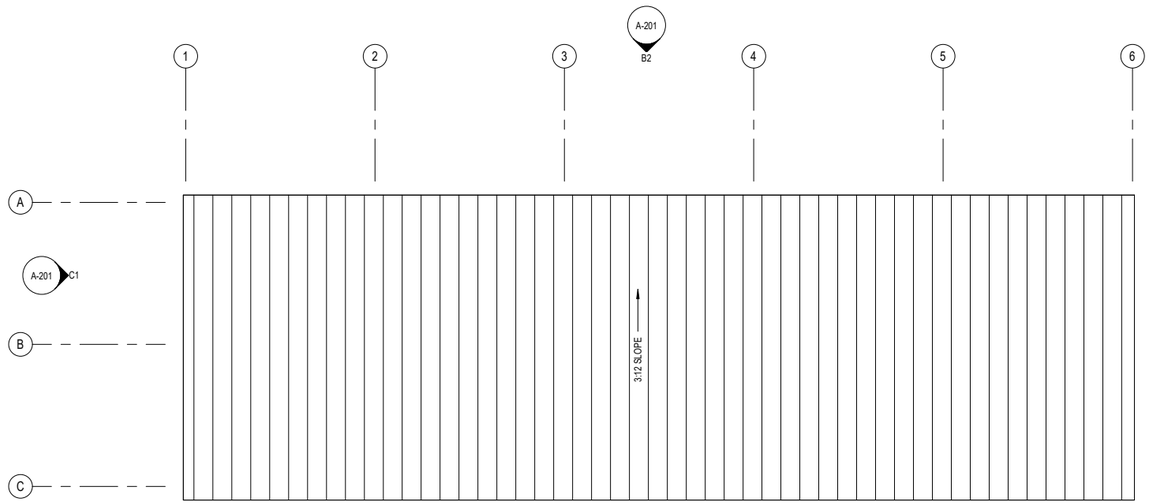
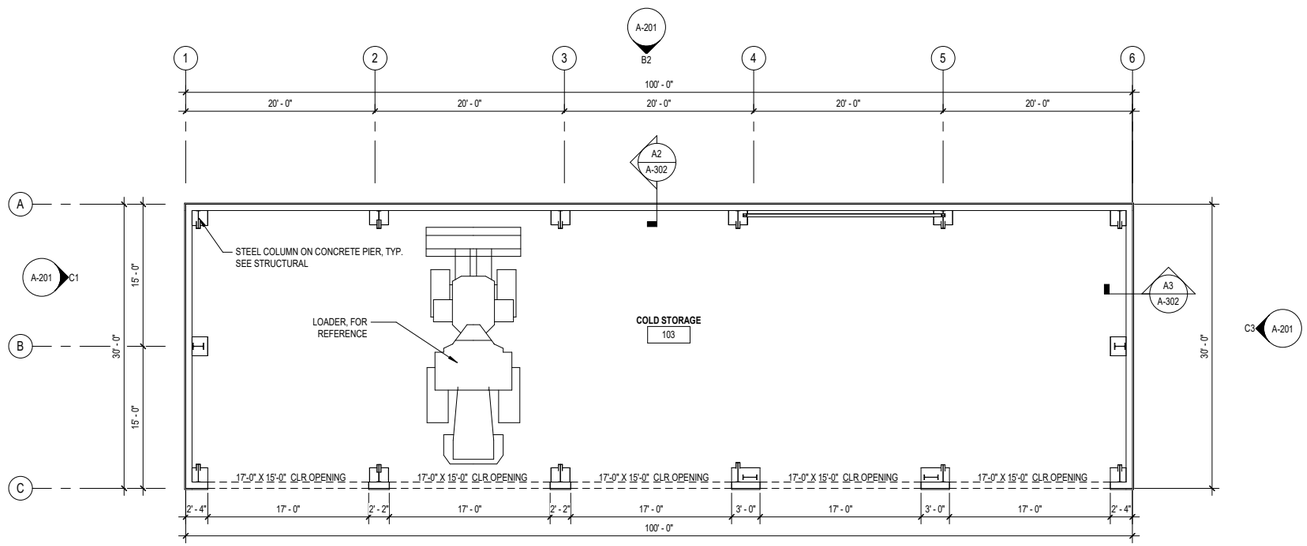


B1 ROOF PLAN - COLD STORAGE

SCALE: 1/8" = 1'-0"

0 4' 8' 16'



A1 FLOOR PLAN - COLD STORAGE

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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CHECKED BY:	-

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FLOOR PLAN - COLD STORAGE

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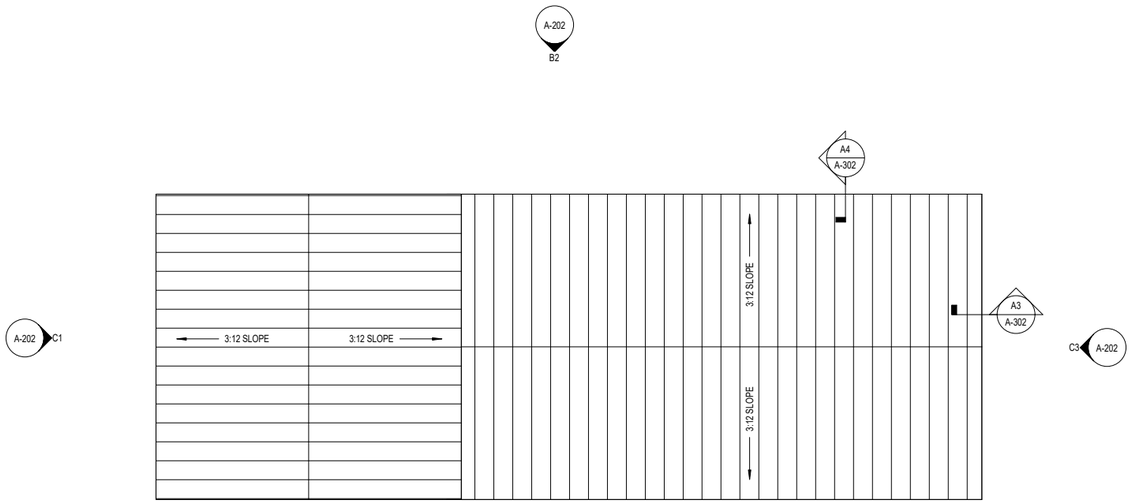
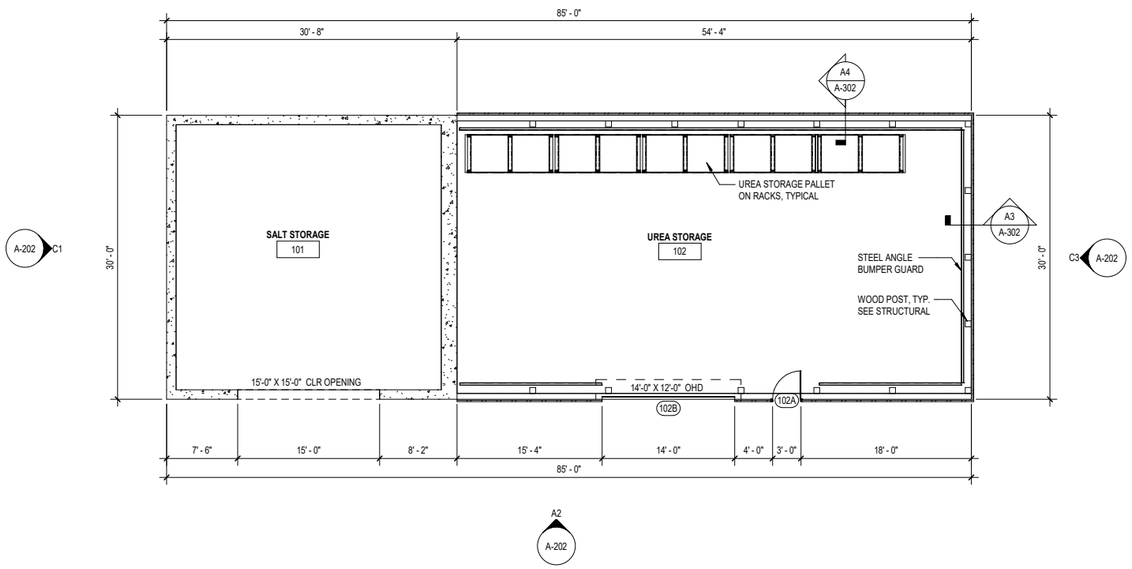


B1 ROOF PLAN - SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"

0 4' 8' 16'



A1 FLOOR PLAN - SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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FLOOR PLAN - SALT/UREA STORAGE

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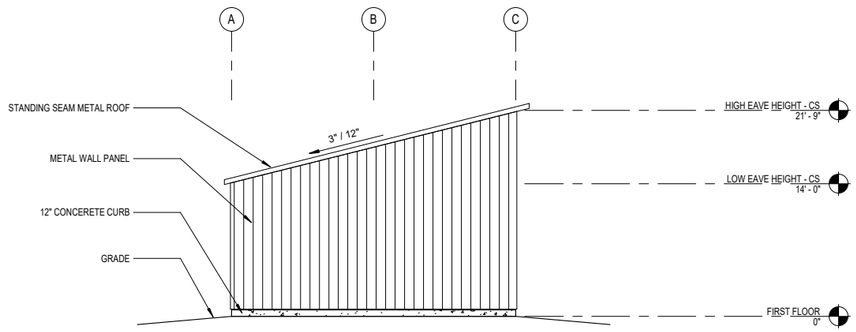
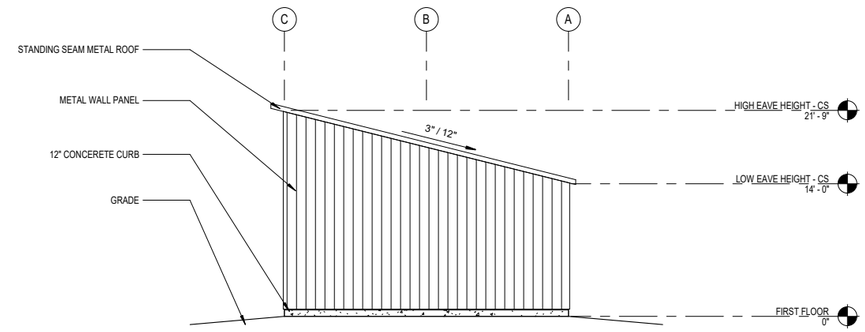
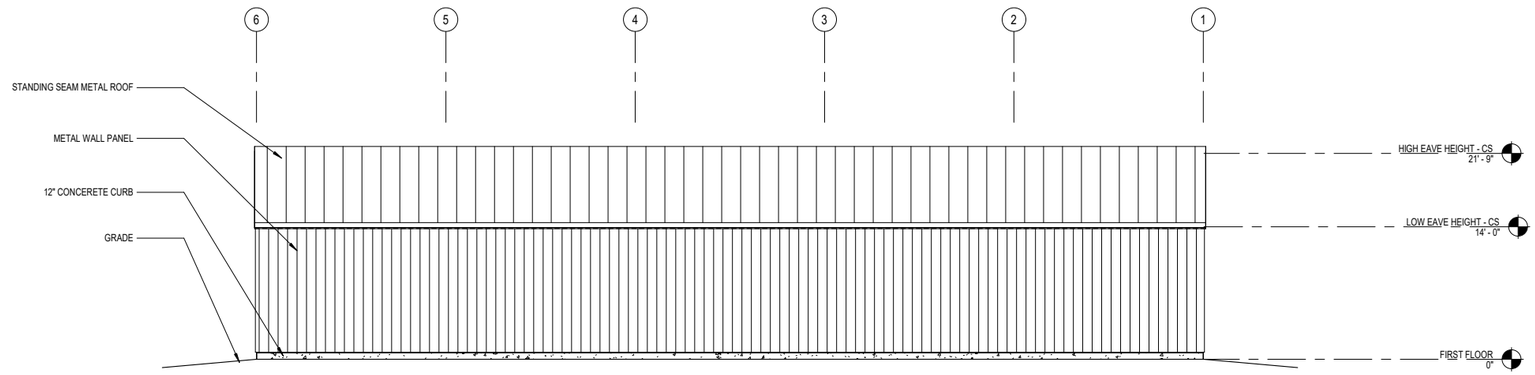


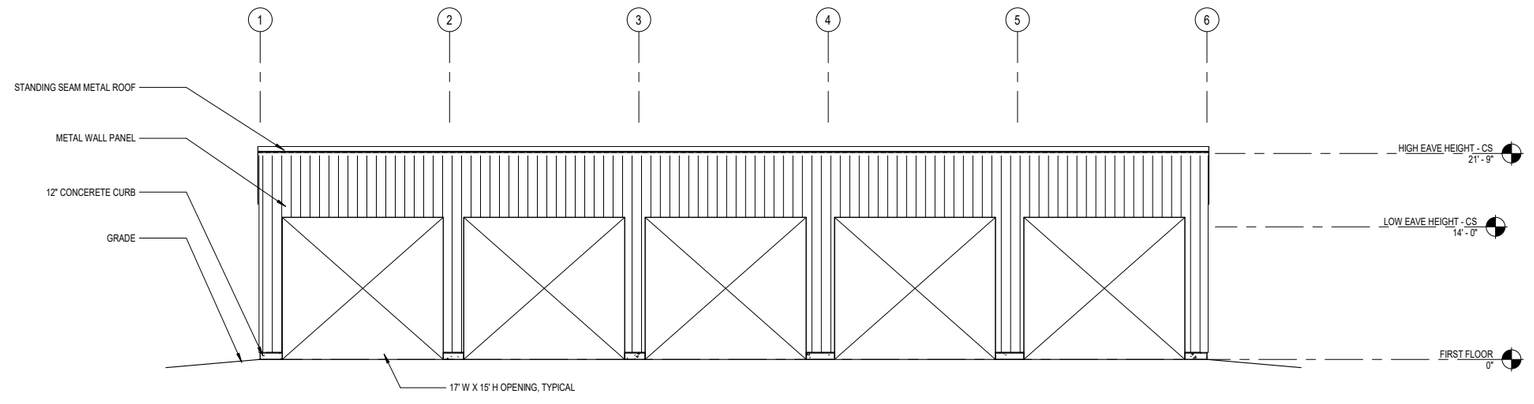
C1 SOUTH ELEVATION - COLD STORAGE
SCALE: 1/8" = 1'-0"



C3 NORTH ELEVATION - COLD STORAGE
SCALE: 1/8" = 1'-0"



B2 WEST ELEVATION - COLD STORAGE
SCALE: 1/8" = 1'-0"



A2 EAST ELEVATION - COLD STORAGE
SCALE: 1/8" = 1'-0"

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ELEVATIONS - COLD STORAGE

A-201

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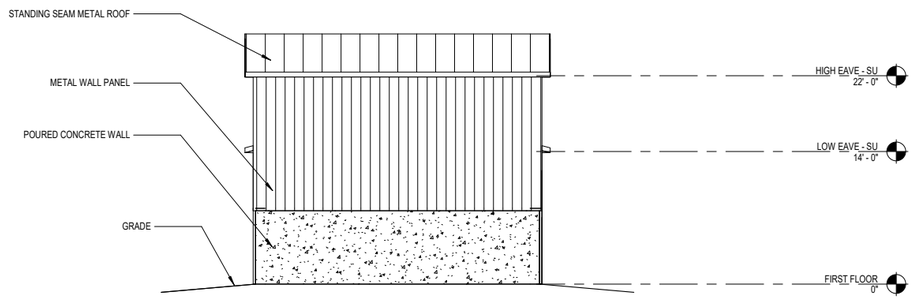
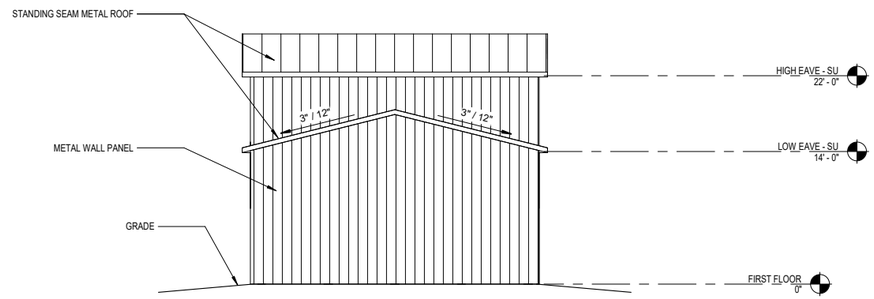
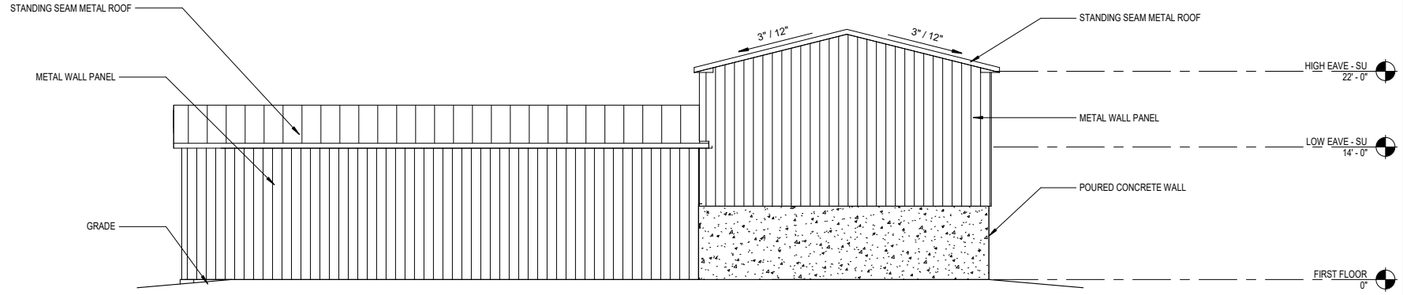


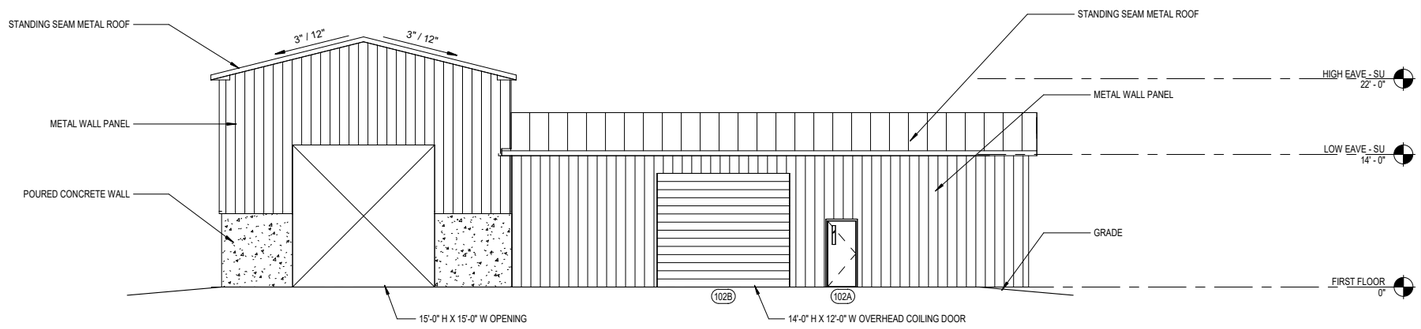
C1 WEST ELEVATION - SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"



C3 EAST ELEVATION SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"



B2 SOUTH ELEVATION - SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"



A2 NORTH ELEVATION - SALT / UREA STORAGE
SCALE: 1/8" = 1'-0"

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ELEVATIONS - SALT / UREA STORAGE

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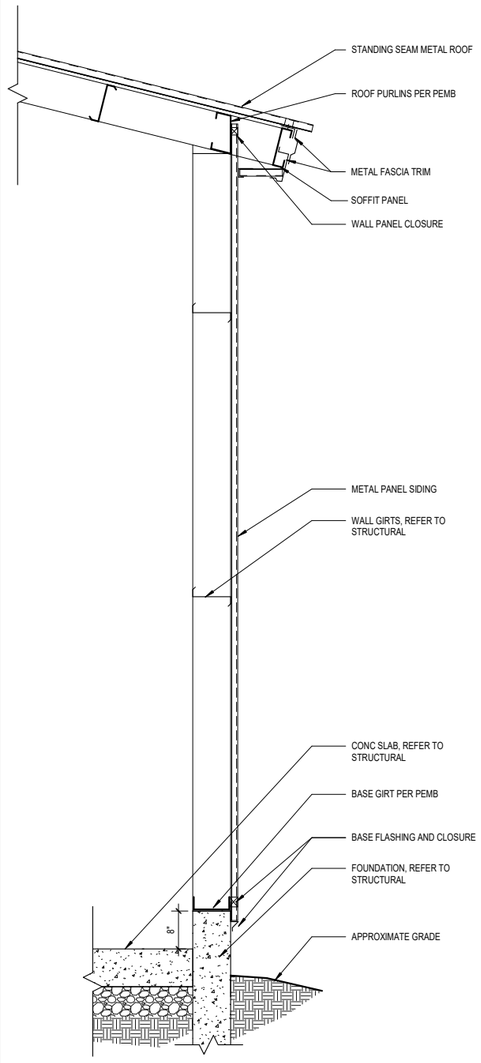
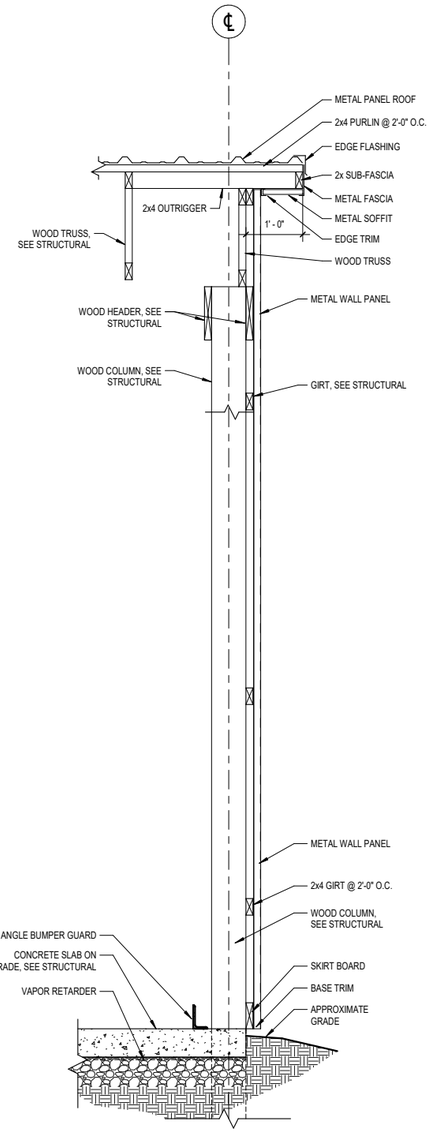
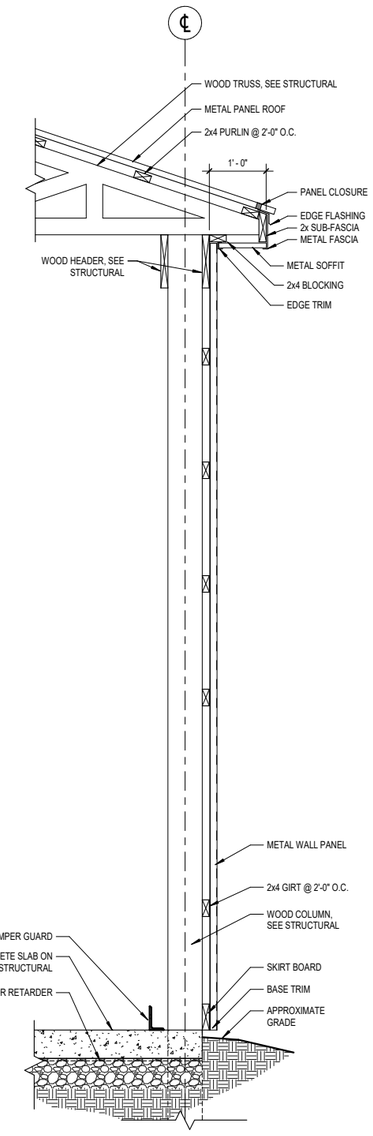


A2 COLD STORAGE EAVE SECTION
SCALE: 3/4" = 1'-0"



A3 POLE BARN RAKE SECTION
SCALE: 3/4" = 1'-0"



A4 POLE BARN EAVE SECTION
SCALE: 3/4" = 1'-0"

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WALL SECTIONS

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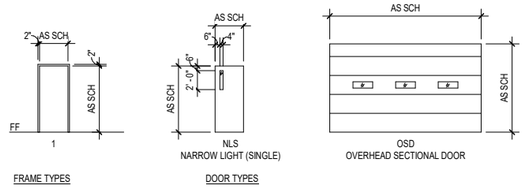
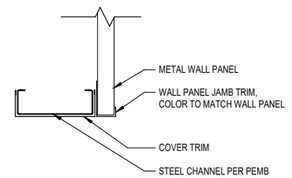
DOOR SCHEDULE

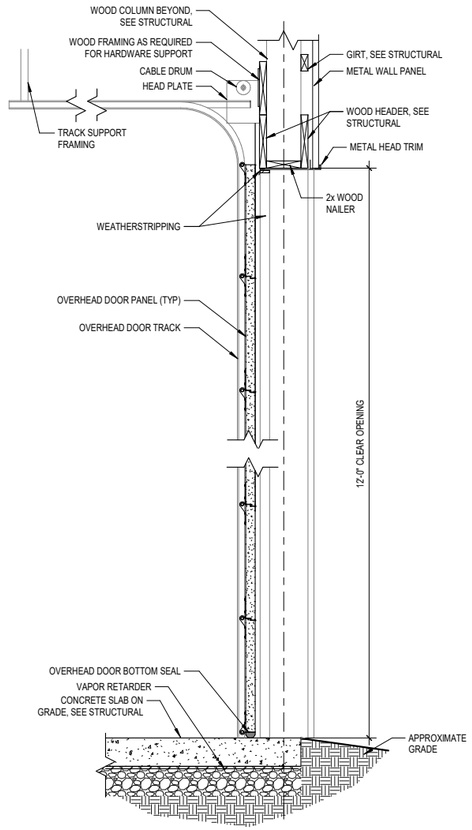
DOOR NO.	ROOM NO.	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	DETAILS HEAD DETAIL	DETAILS JAMB DETAIL	DETAILS SILL DETAIL	HARDWARE SET	NOTES
102A			3' - 0"	7' - 0"										
102B	102		14' - 0"	12' - 0"										



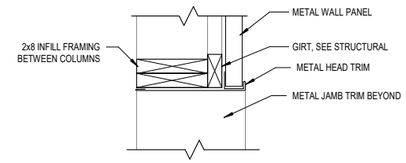
C2 DOOR AND FRAME TYPES
SCALE: 1/8" = 1'-0"



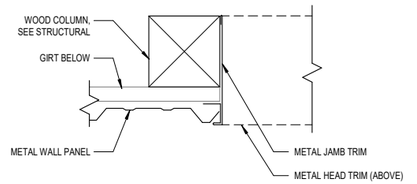
B1 PEMB CLEAR OPENING HEAD
SCALE: 1 1/2" = 1'-0"



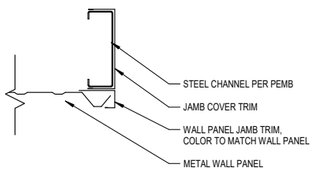
B2 POLE BARN OVERHEAD DOOR SECTION
SCALE: 3/4" = 1'-0"



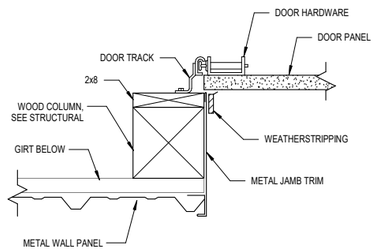
B3 POLE BARN CLEAR OPENING HEAD
SCALE: 1 1/2" = 1'-0"



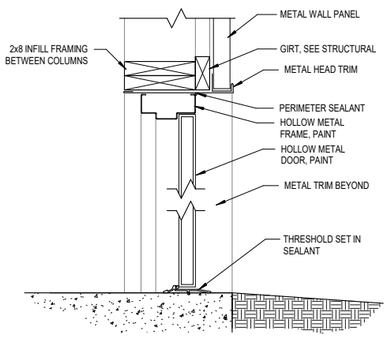
B4 POLE BARN CLEAR OPENING JAMB
SCALE: 1 1/2" = 1'-0"



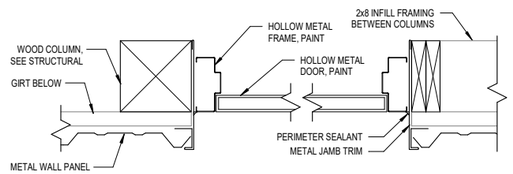
A1 PEMB CLEAR OPENING JAMB
SCALE: 1 1/2" = 1'-0"



A2 POLE BARN OVERHEAD DOOR JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



A3 POLE BARN DOOR HEAD AND SILL DETAILS
SCALE: 1 1/2" = 1'-0"



A4 POLE BARN DOOR JAMB DETAILS
SCALE: 1 1/2" = 1'-0"

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DESIGNED BY:	A. BRUCE, AIA
CHECKED BY:	-

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SCHEDULES AND DETAILS

A-601

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A	AMPERE
A/C	AIR CONDITIONING
AC	ALTERNATE CURRENT
ACCU	AIR COOLED CONDENSING UNIT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
A/H	AIR HANDLER
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AU	AT UNIT
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BFG	BELOW FINISHED GRADE
BRK	BREAKER
BOH	BACK OF HOUSE
C	CONDUIT
CA	CABLE
CAB	CABINET
CAT5E	CATEGORY-5E
CC	CABLED CONDUCTORS
CH	CHILLER
CKT	CIRCUIT
CLL	CONTRACT LIMIT LINE
CMH	COMMUNICATION MANHOLE
CO	CONDUIT ONLY
COMM	COMMUNICATION
CPB	COMMUNICATION PULLBOX
CT	CURRENT TRANSFORMER
CTR	ABOVE COUNTER
CUC	COMMON USER CABLE
CUTC	COMMON USER TERMINAL CABINET
D	DEEP
DC	DIRECT CURRENT
DISC	DISCONNECT
DN	DOWN
DP	DISTRIBUTION PANEL
DPST	DOUBLE POLE SINGLE THROW
DPDT	DOUBLE POLE DOUBLE THROW
EER	ELECTRICAL EQUIPMENT ROOM
ELECT	ELECTRICAL
ELEV	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EXIST	EXISTING
F	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAT	FIRE ALARM TERMINATION
FBO	FURNISHED BY OWNER
FD/SD	FIRE DAMPER / SMOKE DETECTOR
FDR	FEEDER
FLA	FULL LOAD AMPERES
GFI	GROUND FAULT INTERRUPT
GND	GROUND
H	HIGH
HP	HORSEPOWER
HZ	HERTZ
I/C	INTERCOM
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KA	KILOAMP
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
KWHD	KILOWATT HOUR DEMAND METER
L	LENGTH, LONG
LGT	LIGHTING
MA	MILLIAMPERES
MBB	MONITOR BREAKOUT BOX
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	1000 CIRCULAR MILLS
MECH	MECHANICAL
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MM	MULTI MODE
MTD	MOUNTED
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASS.
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASS.
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OLS	OVERLOADS
OC	ON CENTER
P	POLE
PB	PULLBOX
PNL	PANEL
PR	PAIR
PVC	POLYVINYL CHLORIDE
PWR	POWER
POC	POINT OF CONNECTION
POS	POINT OF SALES
PT	POTENTIAL TRANSFORMER
REF	REFERENCE
REM	REMARKS
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT-MEAN-SQUARE
RCPT	RECEPTACLE
SBB	SOUND BREAKOUT BOX
SDB	SOUND DISTRIBUTION BOX
SLC	SIGNALING LINE CIRCUIT
SM	SINGLE MODE
SPECS	SPECIFICATIONS
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
SR	SOUND RACK
SST	STAINLESS STEEL
ST	SHUNT TRIP
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TP	TWISTED PAIR CABLE
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE, WIDE
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

B2 ABBREVIATIONS
SCALE: NOT TO SCALE

ONE-LINE SYMBOLS	
	CIRCUIT BREAKER (TICKS INDICATE NUMBER OF POLES)
	TRANSFORMER
	GROUND
	CONNECTION POINT OR CABLE SPLICE

B3 ONELINE SYMBOLS
SCALE: NOT TO SCALE

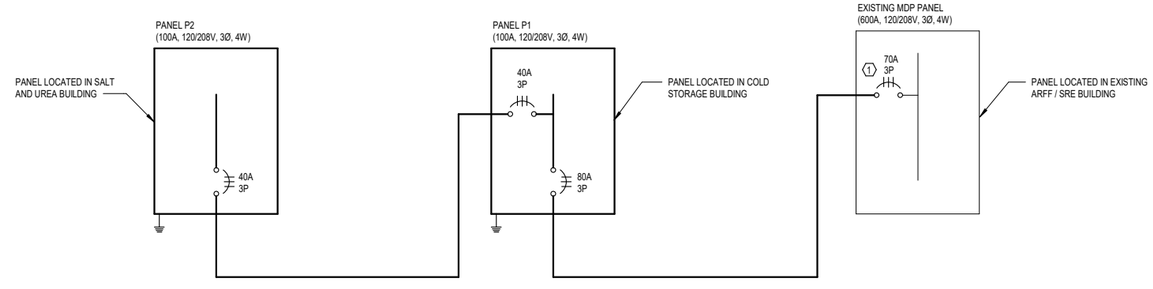
PLAN SYMBOLS	
	EXISTING WORK LINETYPE
	DEMOLITION WORK LINETYPES
	NEW WORK LINETYPE
Φ^{XX}	DUPLEX RECEPTACLE, MOUNT AT 18" AFF UNLESS NOTATION INDICATES OTHERWISE. GFI = GROUND FAULT CIRCUIT INTERRUPTER, MOUNT AT 48" AFF UNLESS OTHERWISE NOTED WP = GFI WITH WEATHERPROOF COVER, MOUNT AT 42" AFF UNLESS OTHERWISE NOTED
	SPECIAL RECEPTACLE
S^{XX}	SINGLE POLE SWITCH, UNLESS NOTATION INDICATES OTHERWISE. 3 = THREE-WAY SWITCH
PC	PHOTO CELL FOR EXTERIOR LIGHTING CONTROL
	FUSED DISCONNECT SWITCH
	NON FUSED DISCONNECT SWITCH
J	JUNCTION BOX
	ELECTRICAL MOTOR (SEE EQUIPMENT CONNECTION SCHEDULE)
	PANEL BOARD, REFER TO PANEL BOARD SCHEDULE
XXX	BRANCH CIRCUIT HOME RUN WITH CIRCUIT NUMBER SEE PANEL SCHEDULES FOR DETAILS
A	1'X4' LUMINAIRE, LETTER DENOTES TYPE, SEE LUMINAIRE SCHEDULE NL = NIGHT LIGHT
OS	CEILING MOUNTED OCCUPANCY SENSOR
MH	MANHOLE
HH	HANDHOLE
UE	UNDERGROUND ELECTRIC

B4 PLAN SYMBOLS
SCALE: NOT TO SCALE

1. ALL ELECTRICAL WORK SHALL CONFORM TO ALL STATE, LOCAL, AND NATIONAL ELECTRICAL CODES.
2. ELECTRICAL CHARACTERISTICS SHALL BE VERIFIED WITH EQUIPMENT MANUFACTURER.
3. ITEMS OF SPECIFIC MANUFACTURERS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND/OR MANUFACTURER'S REPRESENTATIVE'S DIRECTIONS.
4. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS AND DIMENSIONS SHOWN ON DRAWINGS
5. ALL CONDUIT AND WIRING SCHEDULES SHALL BE VERIFIED BEFORE INSTALLATION.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT WITH OTHER CONTRACTORS.
7. ALL AREAS DISTURBED BY WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ORIGINAL AS DETERMINED BY THE ENGINEER.
8. THE CONTRACTOR SHALL PROVIDE RACEWAYS, WIRING, AND CONNECTIONS FOR ALL CONTROL CIRCUITS AND INTERLOCK.
9. ALL ELECTRICAL CONDUIT AND CONDUCTORS DISCONNECTED AND NOT TO BE REUSED SHALL BE REMOVED.
10. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS BEFORE STARTING WORK. IF ONLY A PORTION OF AN EXISTING CIRCUIT IS BEING REMOVED FOR DEMOLITION, CONTINUITY SHALL BE MAINTAINED TO THE REST OF THE REMAINING CIRCUIT.
11. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE #12AWG UNLESS OTHERWISE SHOWN.
12. ALL BRANCH CIRCUITS SHALL CONSIST OF 2 CONDUCTORS PLUS GROUND, UNLESS OTHERWISE SHOWN.

A1 ELECTRICAL GENERAL NOTES
SCALE: NOT TO SCALE

(1) PROVIDE CIRCUIT BREAKER IN EXISTING MDP PANEL LOCATED IN THE ARFF / SRE BUILDING. CONTRACTOR SHALL MATCH EXISTING BREAKER KAIC RATING



A2 ONE-LINE DIAGRAM
SCALE: NOT TO SCALE

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HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS
HUDSON VALLEY REGIONAL AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	128.065.001
DATE:	AUGUST 2024
DRAWN BY:	JMB
DESIGNED BY:	JMB
CHECKED BY:	RMG, P.E.

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SYMBOLS, GENERAL NOTES, ONE-LINE DIAGRAM

E-001

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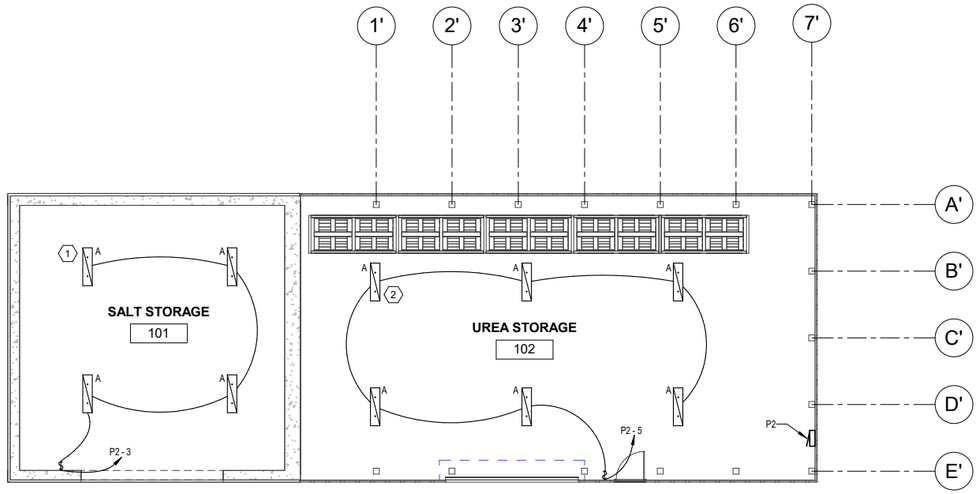
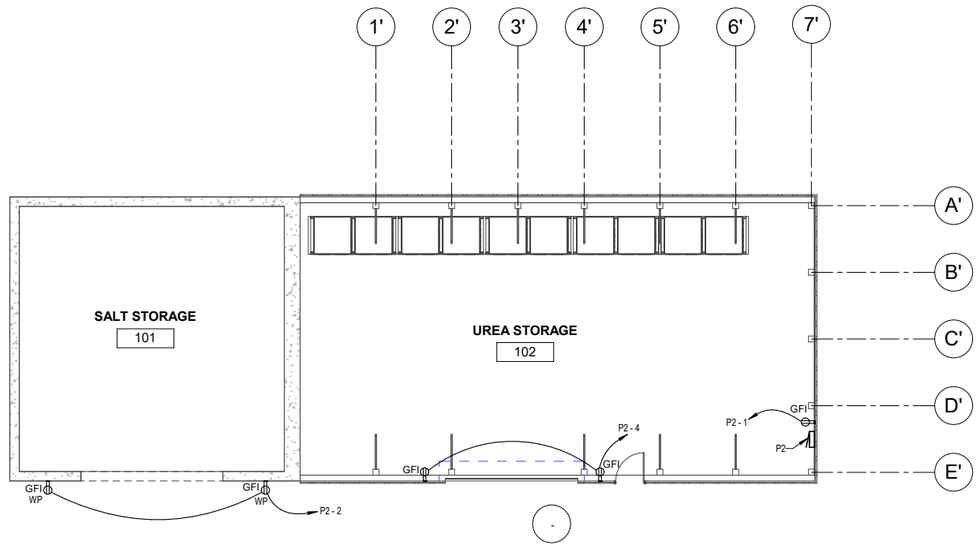
KEYED NOTES:

1. PROVIDE LIGHT FIXTURES ON SALT STORAGE AREA CEILING. MOUNTING HEIGHT = 21'. SEE LUMINAIRE SCHEDULE FOR MORE INFORMATION.
2. PROVIDE LIGHT FIXTURES ON UREA STORAGE AREA CEILING. MOUNTING HEIGHT = 13' 6". SEE LUMINAIRE SCHEDULE FOR MORE INFORMATION.



B1 SALT AND UREA STORAGE LIGHTING PLAN
SCALE: 1/8" = 1'-0"



A1 SALT AND UREA STORAGE POWER PLAN
SCALE: 1/8" = 1'-0"

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SALT AND UREA STORAGE POWER AND LIGHTING PLAN

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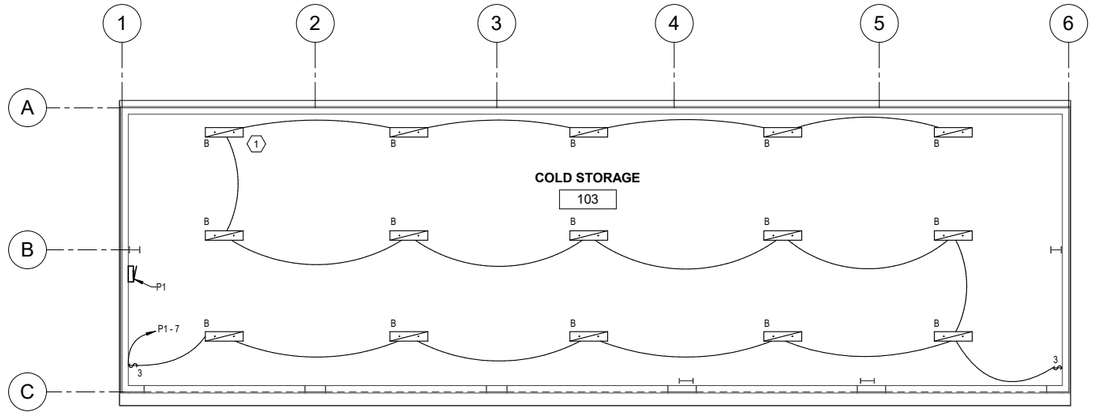
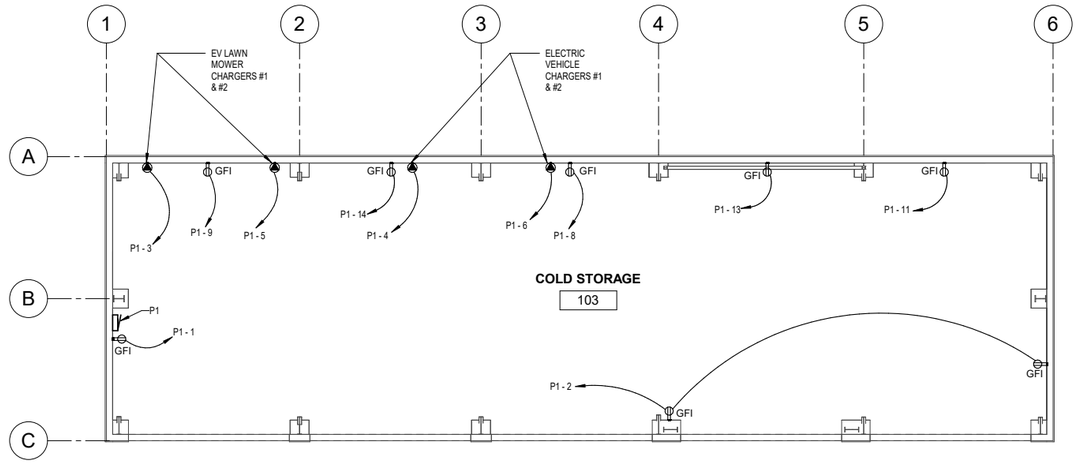
KEYED NOTES:

1 PROVIDE LIGHT FIXTURES ON COLD STORAGE AREA CEILING. MOUNTING HEIGHT = 14' - 20'. SEE LUMINAIRE SCHEDULE FOR MORE INFORMATION.



B1 COLD STORAGE LIGHTING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'



A1 COLD STORAGE POWER PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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COLD STORAGE POWER AND LIGHTING PLAN

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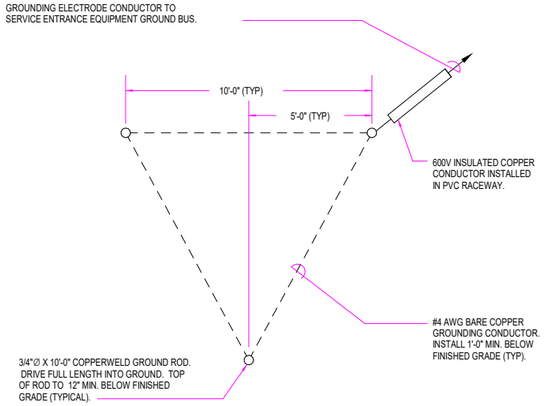
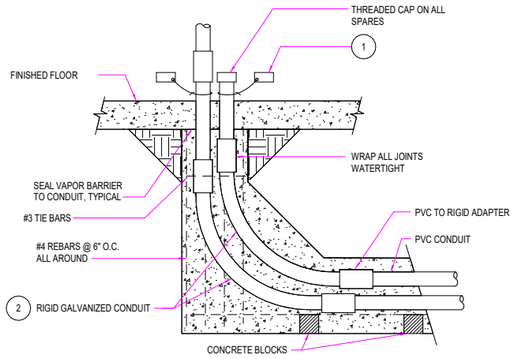


GENERAL NOTES:

A. PROVIDE SIZE #4 AWG GROUNDING ELECTRODE CONDUCTOR UNLESS OTHERWISE NOTED.

C1 ELECTRODE GROUND GRID

SCALE: NOT TO SCALE

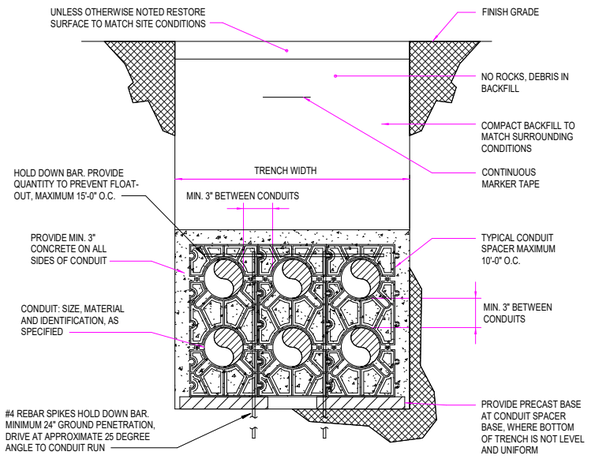


KEYED NOTE:

1. AFFIX ENGRAVED PLASTIC NAMEPLATE INDICATING CONDUIT NUMBER OR CIRCUIT IDENTIFICATION AT EACH CONDUIT STUB-UP. ATTACH WITH NYLON CABLE TIE.
2. REFER TO ELECTRICAL SITE PLAN FOR QUANTITY OF CONDUITS IN THE DUCTBANK.

B1 TYPICAL CONDUIT STUB-UP INSIDE BUILDING

SCALE: NOT TO SCALE



GENERAL NOTES:

A. REFER TO CONDUIT SCHEDULE AND/OR ONE-LINE DIAGRAM FOR ACTUAL QUANTITY AND SIZE OF CONDUITS REQUIRED.

B. LEAVE PULL ROPE IN ALL SPARES.

C. REFER TO CIVIL DRAWINGS FOR EXCAVATION AND BACKFILL REQUIREMENTS.

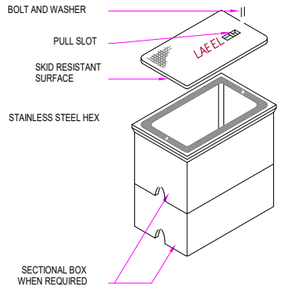
D. UNLESS OTHERWISE, NOTED TOP OF CONDUIT SHALL BE 30" BELOW FINISHED GRADE.

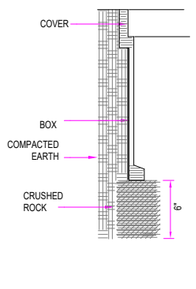
A1 TYPICAL CONCRETE ENCASED DUCTBANK DETAIL

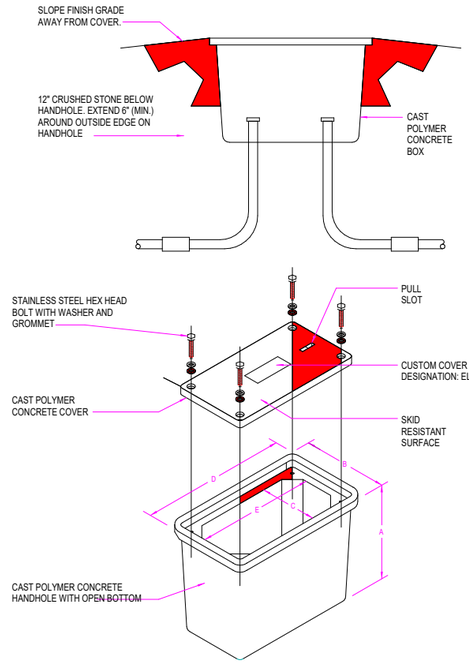
SCALE: NOT TO SCALE

GENERAL NOTES:

1. CONSTRUCTION SHALL BE A POLYMER CONCRETE.
2. ALL HARDWARE SHALL BE STAINLESS STEEL. PROVIDE SLEEVES FOR ALL PENETRATIONS AS NECESSARY.
3. BOTTOM SHALL BE OPEN FOR DRAINAGE.
4. PROVIDE LOGO ON COVER 'ELECTRIC'. COVER TO BE SECURED WITH PENTA BOLTS.
5. HANDHOLES MUST MEET ALL APPLICABLE REQUIREMENTS OF ANSI/SCTE 77. TIER 15.
6. HANDHOLES SHALL MEET MINIMUM SIZE REQUIREMENTS IN ACCORDANCE WITH NEC ARTICLE 314.30 OR MIN. 18"W x 24"L.







B3 HAND HOLE DETAIL

SCALE: NOT TO SCALE

PANEL SCHEDULE P2

BUS SIZE: 100 A
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
POLES: 24

MAIN TYPE: MCB
MAIN BREAKER: 40 A
GND. BAR TYPE: COPPER
SC RATING:
ENCLOSURE: TYPE 4X

INSTALLATION: SURFACE
LOCATION:
NOTES:

CIRCUIT DESCRIPTION	WIRE SIZE	CONDUIT	CB. AM...	Poles	CKT	A	B	C	CKT	Poles	CB. AM...	CONDUIT	WIRE SIZE	CIRCUIT DESCRIPTION
PANEL RECEPTACLE	1-#12, 1-#12, 1-#12	3/4"	20 A	1	1				2	1	20 A	3/4"	1-#12, 1-#12, 1-#12	SALT OUTSIDE RECEPTACLES
SALT LIGHTING	1-#12, 1-#12, 1-#12	3/4"	20 A	1	3				4	1	20 A	3/4"	1-#12, 1-#12, 1-#12	UREA RECEPTACLES
UREA LIGHTING	1-#12, 1-#12, 1-#12	3/4"	20 A	1	5				6					
					7				8					
					9				10					
					11				12					
					13				14					
					15				16					
					17				18					
					19				20					
SPARE	--	--	20 A	1	21				22	1	20 A	--	--	SPARE
SPARE	--	--	20 A	1	23				24	1	20 A	--	--	SPARE

PANEL SCHEDULE P1

BUS SIZE: 100 A
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
POLES: 24

MAIN TYPE: MCB
MAIN BREAKER: 80 A
GND. BAR TYPE: COPPER
SC RATING:
ENCLOSURE: TYPE 4X

INSTALLATION: SURFACE
LOCATION:
NOTES:

CIRCUIT DESCRIPTION	WIRE SIZE	CONDUIT	CB. AM...	Poles	CKT	A	B	C	CKT	Poles	CB. AM...	CONDUIT	WIRE SIZE	CIRCUIT DESCRIPTION
PANEL RECEPTACLE	1-#12, 1-#12, 1-#12	3/4"	20 A	1	1				2	1	20 A	3/4"	1-#12, 1-#12, 1-#12	CONVENIENCE RECEPTACLES
EV MOWER CHARGER #1	1-#12, 1-#12, 1-#12	3/4"	20 A	1	3				4	1	35 A	3/4"	1-#8, 1-#8, 1-#10	EV CHARGER #1
EV MOWER CHARGER #2	1-#12, 1-#12, 1-#12	3/4"	20 A	1	5				6	1	35 A	3/4"	1-#8, 1-#8, 1-#10	EV CHARGER #2
COLD STORAGE LIGHTING	1-#12, 1-#12, 1-#12	3/4"	20 A	1	7				8	1	20 A	3/4"	1-#12, 1-#12, 1-#12	BLOCK HEATER RECEPTACLE
BLOCK HEATER RECEPTACLE	1-#12, 1-#12, 1-#12	3/4"	20 A	1	9				10	1	20 A	--	--	SPARE
BLOCK HEATER RECEPTACLE	1-#12, 1-#12, 1-#12	3/4"	20 A	1	11				12	1	20 A	--	--	SPARE
BLOCK HEATER RECEPTACLE	1-#12, 1-#12, 1-#12	3/4"	20 A	1	13				14	1	20 A	3/4"	1-#12, 1-#12, 1-#12	BLOCK HEATER RECEPTACLE
SPARE	--	--	20 A	1	15				16					
SPARE	--	--	20 A	1	17				18					
					19				20					
PANEL P2	3-#8, 1-#8, 1-#10		40 A	3	21				22	1	20 A	--	--	SPARE
					23				24	1	20 A	--	--	SPARE

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MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO: 128.065.001
DATE: AUGUST 2024
DRAWN BY: JMB
DESIGNED BY: JMB
CHECKED BY: RMG, P.E.

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SCHEDULES AND DETAILS

E-601

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EXHIBIT 2
SITE CHARACTERIZATION REPORT
(C.T. MALE, 2019)

WILLIAM F.X. O'NEIL
COUNTY EXECUTIVE

ROBERT H. BALKIND, P.E.
COMMISSIONER
DAVID C. WHALEN
DEPUTY COMMISSIONER

COUNTY OF DUTCHESS
DEPARTMENT OF PUBLIC WORKS

October 24, 2023

Via Email (greta.white@dec.ny.gov) and Electronic Submission

Greta White, P.G., Project Manager
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7014

RE: Final Site Characterization Report
Dutchess County Airport/Hudson Valley Regional Airport
NYSDEC Site No. 314129

Dear Ms. White:

Enclosed is the Final Site Characterization Report submitted on behalf of Dutchess County with respect to Dutchess County Airport/Hudson Valley Regional Airport (Site No. 314129) (hereinafter, Site). Site characterization activities were conducted and the associated report, Site Characterization Report (SCR) was prepared in accordance with the Consent Order and Administrative Settlement between the NYS Department of Environmental Conservation (DEC) and the County (Index No.: CO 3-20170920-170) ("Consent Order").

Please be advised that the enclosed Final SCR is the final and last submission the County intends to submit to the DEC with respect the site characterization phase of the remedial program at the Site.

Some history regarding the County's activities at the Site will help illuminate the extensive investigative effort the County has performed with respect to the Site. The Consent Order became effective on March 28, 2018, more than 5 years ago, and the County has carried out a vast scope of activities since that time, all in accordance with the Consent Order and with DEC requirements.

This work included preparation of a Records Search Report (June 2018) and submission of an initial site characterization work plan (SCWP) (May 2018), which the DEC required to be modified to include additional on and off-Site sampling. The County submitted a revised SCWP (May 2019) which was finally approved, conditionally, by the NYSDEC (June 2019).

After conducting the DEC-approved sampling, the County submitted an SCR (August 2019) and a revised SCR (December 2019). Rather than approve the revised SCR, the DEC notified the County (April 2020) that it wanted to County to conduct additional investigative work, including

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sampling of off-Site potable water supply wells and then submit a new, comprehensive SCR incorporating the results of both the initial investigation and the supplemental one. Accordingly, the County prepared and submitted yet another work plan, a draft Supplemental Site Characterization Work Plan (SSCWP) (June 2020), outlining the scope of this additional investigation. DEC issued a letter requesting modifications/corrections to this SSCWP (July 2020) and the County submitted a revised draft SSCWP which included plans for addressing off-airport well testing, bottled water and POET systems (August 2020). The County submitted a third revision of the SSCWP (December 2020). Finally, on December 24, 2020, the DEC and DOH approved the SSCWP (conditioned upon some additional modifications being incorporated into the work plan).

The County conducted the DEC approved on and off-site work in 2021, which included numerous off-site potable well sampling events and installation of POET systems on locations exceeding the 70 ppt Health Advisor Level set forth in the 2018 Consent Order.

Thereafter, the County submitted a draft Site Characterization Report (the draft Final SCR, October 2021) which, as directed by the DEC, incorporated the results of both the County's original 2019 Site Characterization investigative work along with the results of the supplemental investigative work. The DEC provided comments on the draft Final SCR (May 5, 2022) and the County submitted a revised draft Final SCR on August 17, 2022, addressing the issues raised in DEC's comment letter.

It was not until March 10, 2023, *almost 7 months later*, that the DEC issued a comment letter regarding the County's August 2022 draft Final SCR submission. This letter included roughly 6 relatively straight forward comments. Subsequently, the County had some email and phone conversations with the DEC which resolved almost all of the comments, including the language of a statement to be included in the Tables. The County had believed that the DEC's March 2022 letter was the final list of comments from the DEC and that all the County needed to do was to revise (again) the Final SCR to address the letter and resubmit a revised Final SCR, finally bringing the County's long Site Characterization effort to a close.

However, before we were able to resubmit, to the County's surprise and consternation, on June 12, 2023 you, as the newly assigned Project Manager, issued a new comment letter containing almost 17 general and specific comments, *many of which were completely new comments* that were not included in the DEC's March 10th comment letter. One of the most troubling comments was the DEC's requirement that many sections of the Final SCR and all of the tables be revised to "reference the April 2023 version of the Department's *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS)* guidance document, including those updated concentrations contained therein, rather than the July 2021 version of said guidance document." As we explained to the DEC, many of the comments, including the requirement to reference the April 2023 guidance would require very substantial consultant time and expense to the County.

What was most problematic and, frankly, unfair about this particular comment was that the April 2023 guidance did not exist when we submitted our draft Final SCR in October 2021 and the revised version in August 2022 and was still not in place when DEC issued what we believed was its final comment letter in March 2023. The County applied the relevant guidance when it prepared

the Final SCR in October 2021 as well as the revised Final SCR in August 2022. Had the DEC not taken almost 7 months to provide comments on our August 2022 submission, the Final SCR --addressing all of the DEC comments -- would likely have been finalized and approved by the DEC long before the April 2023 guidance was even issued.[1]

After we raised some concerns about this letter, the DEC issued another comment letter on June 22, 2023, which appeared to be sent to clarify and simplify some of the June 12th comments. While some clarifications were helpful, the most onerous requirement -- revising the SCR to address the newly issued April 2023 guidance was still included. During a conference call meeting with the DEC on June 28, 2023, it was agreed that the SCR did not have to be revised to include references to the new guidance values, but that an addendum would be included in the Final SCR which would explain why earlier guidance was used and, further state that any future Remedial Investigation Report would incorporate and reference the appropriate DEC guidance (see attached Final SCR with Addendum).

As reflected by the chronology above, the County has expended an extraordinary amount of time and money complying with the 2018 Consent Order and addressing all of the DEC's numerous comment letters and providing the requested revisions to work plans and the SCR. Indeed, it should be clear to all that the County has gone above and beyond throughout these 5 years of site characterization activity.

In light of all of the above, it is our position that the attached Final Site Characterization Report is in full compliance with the 2018 Consent Order and fully addresses all DEC requirements.[2] Accordingly, we anxiously await the DEC approval of this Final Site Characterization Report.[3]

Sincerely,

Robert H. Balkind, P.E.
Commissioner

Enclosures

ec (w/o attachment):
William O'Neil, Dutchess County Executive
Gary S. Bowitch, Esq.
James McIver, P.G., C.T. Male
Kelly. Turturro, Regional Director (kelly.turturro@dec.ny.gov)
Kiera Thompson (kiera.thompson@dec.ny.gov)
Kieran McCarthy (kieran.mccarthy@dec.ny.gov)

[1] We recognize that some of the delay in reviewing and commenting on the August 2022 Final SCR is attributable to delays in obtaining NYSDOH comments on the report. Nonetheless, the combined delay of the 2 State regulatory agencies was roughly 7 months.

[2] One of the issues raised by DEC was with regard to the sampling of soil/sediments in the various outfalls at the Site. Please note that the sampling of the outfalls was conducted in strict compliance with the DEC-approved SSCWP. With respect to PFAS and 1,4-dioxane, the samples were compared to DEC SCGs for soil. DEC did not raise any issues with the procedures used or the standards the results were compared to in its March 10, 2023 comment letter. However, in the two June 2023 DEC comment letters, DEC indicates that the results of outfall soil/sediments samples should have been compared to Department's June 2014 Screening and Assessment of Contaminated Sediment guidance, instead of the SCGs for soil. The problem with DEC's position, as it relates to samples analyzed for PFAS and 1,-4 dioxane, is that ***the referenced guidance does not include any standard for PFAS or 1,4-dioxane.*** (Note: the Final SCR was revised to compare the results of soil/sediment samples taken from Outfall 001 for compounds other than PFAS and 1,4 Dioxane to the 2014 sediment guidance.) Indeed, by our comparing sample results for PFAS/1,4-dioxane to the soil SCG's at least there is some standard to contextualize the results, as opposed to none.

[3] Once the Final SCR is approved, the next step will be for the County to conduct a comprehensive Remedial Investigation, during which all data gaps will be addressed, and to then submit an RI report in which all applicable standards will be referenced.

December 2019
Revised October 2021, August 2022, May, June, and October of 2023

Site Characterization Report

Hudson Valley Regional Airport
18 Griffith Way
Town of Wappinger
Dutchess County, New York
NYSDEC Site #314129

Prepared for:

COUNTY OF DUTCHESS
1626 Dutchess Turnpike
Poughkeepsie, New York 12603

I, James D. McIver, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Draft Site Characterization Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

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SITE CHARACTERIZATION REPORT
HUDSON VALLEY REGIONAL AIRPORT SITE
18 GRIFFITH WAY, TOWN OF WAPPINGER
DUTCHESS COUNTY, NEW YORK

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FINAL SITE CHARACTERIZATION REPORT
ADDENDUM

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Please note that subsequent NYSDEC-approved remedial investigation activities at the Site will utilize and all reports will reference applicable PFAS guidance in place at that time, including, if still applicable, *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS)*, April 2023.

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ACRONYMS AND ABBREVIATIONS

AAG	Associated Aircraft Group, Inc.
AOC	Area of Concern
AFFF	Aqueous film forming foam
ARFF	Aircraft Rescue and Firefighting Facilities
ASP	Analytical Services Protocol
CAMP	Community Air Monitoring Plan
CVOC	Chlorinated Volatile Organic Compounds
DER	Division of Environmental Remediation
DER-10	NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010)
DUSR	Data Usability Summary Report
EDS	Electronic Data Summary
ELAP	Environmental Laboratory Accreditation Program
FSP	Field Sampling Plan
HASP	Health and Safety Plan
IDW	Investigation-Derived Waste
MCL	Maximum Contaminant Level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
ND	Non-Detect
NTU	Nephelometric Turbidity Units
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSGS	New York State Geological Survey
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety and Health Administration
P-Site	Potential NYS Inactive Hazardous Waste Disposal Site
PCBs	Polychlorinated biphenyls
PFAS	Poly- & Perfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PID	Photoionization Detector
PPE	Personal Protective Equipment
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
SC	Site Characterization
SCR	Site Characterization Report
SCWP	Site Characterization Work Plan
SCO	Soil Cleanup Objectives
SPDES	State Pollution Discharge Elimination System

SOP	Standard Operating Procedure
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TOGS	Technical Operations Guidance Series
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

This document constitutes the Draft Site Characterization (SC) Report for the Hudson Valley Regional Airport site (the "Site") located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York. The Site is approximately 510.8 acres in size and is identified with tax number 135689-6259-03-225301-0000 on the Town of Wappinger tax maps. A Site Location Map and Site Plan are included as Figures 1 and 2, respectively. This report describes the field sampling efforts and associated analytical results for the environmental media samples collected.

The New York State Department of Environmental Conservation (NYSDEC) has classified the Site as a potential inactive hazardous waste disposal site (P-Site #314129) due to the presence of combined perfluorooctanoic acid (PFOA) and perfluororooctanesulfonic acid (PFOS) at concentrations in one of the potable drinking water supplies at the Site above the former health advisory value of 70 parts per trillion set by the United States' Environmental Protection Agency (USEPA) in May 2016. PFOS and PFOA are members of the class of substances called per- and polyfluoroalkyl substances known as PFAS. Low concentrations of PFAS were also detected in nearby off-Site private water supply wells. Initial private well water samples were collected by the New York State Department of Health (NYSDOH) in September 2017. The NYSDEC informed Dutchess County of the P-Site classification based on these detections by letter dated September 15, 2017. This letter also stated that an investigation was required to be conducted in accordance with NYSDEC's technical requirements for a site characterization.

Dutchess County executed an Order of Consent with the NYSDEC on March 18, 2018. As a result, C.T. Male Associates Engineering, Survey, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) was retained by Dutchess County and developed a Site Characterization Work Plan (SCWP) in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) (DER-10) and 6 NYCRR 375 Environmental Remediation Programs (December 14, 2006) which was submitted to NYSDEC on May 24, 2019.

Subsequently, NYSDEC/NYSDOH approved the SCWP in letter sent to the County on July 5, 2019. C.T. Male completed Site Characterization activities and submitted a Draft

Site Characterization Report to NYSDEC in December of 2019. A response from NYSDEC/NYSDOH was received on April 16, 2020. In their response, NYSDEC/NYSDOH identified several areas requiring additional information and did not approve the SC Report. The following summarizes the additional work required by NYSDEC/NYSDOH for consideration in approving the SC Report:

- Collection of surface water samples from the Wappingers Creek;
- Additional off-Site drinking water well sampling; and
- Provision of drinking water to one off-Site building with drinking water results above 70 ppt (identified as Location A / A1, see Figure 12).

Specific requirements for the site characterization work, as set forth in the NYSDEC's comment letter dated April 16, 2020 were also incorporated into a supplemental SCWP.

The subsequent Draft SC Report was submitted to the NYSDEC/NYDOH in October of 2021. A response from NYSDEC/NYDOH was received on May 5, 2022. In their response, NYSDEC/NYSDOH identified several areas requiring additional information and did not approve the SC Report. No additional field work was required from the May 5, 2022 response letter. The following summarizes the additional work required by NYSDEC/NYSDOH for consideration in approving the SC Report:

- Adding references to the proposed guidelines for PFOS, PFOA, and 1,4-Dioxane;
- Adding a summary of the off-Site drinking water well investigation; and
- Revising report figures to include more detailed outlines of specific site features.

The initial phase of the SC Report involved records research, facility inspection, and interviews with facility personnel. To the extent that they were available, records reviewed for the Site generally included historic land usage; past and present industrial/commercial operations; past and present usage/generation of hazardous materials/wastes, petroleum products, firefighting foam and aqueous film forming foam (AFFF); past and present storage containers, tanks and bulk storage areas; past and present environmental permits, reports, work plans and remedial actions; and areas of historic fill placement within the Site. The Records Search Report was submitted for NYSDEC review and comment in May 2018.

Based on the records search, inspections and interviews, nine areas of concern (AOCs) were identified and investigated during the SC investigation: the firefighting AFFF

testing area (AOC-1), the former Balefill Landfill (AOC-2), the former Dutchess County Landfill (AOC-3), the former Jackson Road petroleum spill (AOC-4), several stormwater outfalls that may have received AFFF during routine testing(AOC-5), the AAG hangars (former IBM Hanger, NYSDEC Site No. 314078 and Flagship Hanger, NYSDEC Site No. 314101) (AOC-6), the Aircraft Rescue and Firefighting Facilities (ARFF)[1] / maintenance building (AOC-7), the fire pond (AOC-8), and the North/South runway where AFFF was tested annually as required by the Federal Aviation Administration (FAA) (AOC-9). The SCWP was developed to evaluate the overall environmental status of the Site relative to the contaminants of potential concern, including PFAS.

This SC Report was prepared in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) (DER-10) and 6 NYCRR 375 Environmental Remediation Programs (December 14, 2006).

1.1 Historical Site Uses

The current site use is as a regional airport known as Hudson Valley Regional Airport (POU). It is a publicly owned, public-use, General Aviation facility, servicing the aviation needs of Dutchess County, metropolitan New York City area, and the southeastern region of New York State.

Based on the historical aerial photographs, the Site was developed as an airport between 1936 and 1940. The Site has undergone several improvements since 1940, such as a runway extension, and the addition of hangers and service buildings. Prior to being developed, the Site appears to have been used for agricultural purposes.

The airfield was originally established by the United States Department of Commerce to be used as an emergency field for air mail runs along the east coast. The field was taken over by the US Army Air Corps at the start of World War II. During that time a control tower was added to the field and the property was used primarily for training. In 1947, the field was deeded to Dutchess County and the airport was managed under contract

[1] A new Aircraft Rescue and Firefighting Facilities (ARFF) building, situated in the southwest corner of the property, was constructed after a significant portion of the subject Site Characterization was completed. All references to the ARFF building in this report refer to the former ARFF building, which remains situated in the southeast corner of the property.

with limited development until 1975, when the Dutchess County Department of Aviation was created, and a Commissioner was appointed to manage the airport.

1.2 Current Site Operations

The Site has several tenants that lease hangars and utilize the airport for helicopter and airplane flights for private clients or personal use. The airport operates by criteria that is outlined and regulated by the FAA pertaining to the following areas: facility requirements for airfield, terminal and general aviation areas, runways and taxiways, land use, instrumentation and lighting, general aviation requirements, fuel storage, and ARFF.

As stated in the Airport's Master Plan, the Federal Aviation Regulation Part 139.315 establishes a system of indexing airports that are regularly served by scheduled commuter aircraft. The overall length of the aircraft having five or more daily departures determines the airports ARFF index. The Hudson Valley Regional Airport operates as an Index A facility. The minimum rescue and firefighting equipment and agents required for Index A are as follows:

- The airport must have one vehicle carrying at least 500 pounds of sodium-based dry chemical or halon 1211;
- Or alternatively, 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF agent to total 100 gallons, for simultaneous dry chemical and AFFF application.

The ARFF vehicle at the airport currently meets the Federal Aviation Regulation Part 139 and has the capability of AFFF application.

The Federal Aviation Regulations also state that ARFF vehicles must be tested annually to ensure that the vehicle is working properly. Additionally, the quantity and the chemical composition of the AFFF must be held to the required standards. Interviews with the Airport Director and the fire fighters at the airport indicated that the testing areas for AFFF application is the North or South end of runway 15-33. Typically, one to two 5-gallon buckets of AFFF were applied during the testing. In 2009-2010, the airport switched the type of AFFF used in the ARFF. The AFFF products now used are Ansulite 3% (AFC-3A) and Chemguard C301MS. The AFFF used after 2009 may not contain PFAS

compounds based on a review of the material safety data sheets; however, there are proprietary compounds listed, which may contain the PFAS compounds of concern.

1.3 Purpose and Objectives

This SC investigation was conducted to evaluate the physical setting and environmental quality of the Site for aid in the development of a conceptual model of environmental conditions at the Site, and to determine whether regulated substances are present at the Site at levels above NYSDEC unrestricted use Standards, Criteria, and Guidance (SCGs) values for soils, groundwater standards, or other applicable SCGs for unrestricted use of the Site (DER-10, Section 3.2.1), pursuant to the Order and "P" Site designation.

The work presented in this report is based on the following NYSDEC approved work plans:

- Site Characterization Investigation Work Plan dated July 2019, with included modifications as per NYSDEC letters dated August 21, 2018 and April 12, 2019, and subsequent letter approving the work plan dated July 5, 2019; and
- Supplemental Site Characterization Investigation Work Plan dated December 2020.

As outlined in NYSDEC's DER-10, the SC was performed to meet the following goals:

- Perform a Records Search to identify and review documentation on the Site history and identify potential AOCs; and
- Perform field characterization to establish an environmental baseline and conceptual model for the Site with the intent of acquiring enough data for determining if further Site Investigation is necessary.

2.0 PHYSICAL CHARACTERISTICS

2.1 Surrounding Site Use and Site Improvements

The surrounding land uses, as identified during initial site visits, are described as follows: The areas surrounding the airport to the North, South, East and West are a mix of residential and light industrial/commercial properties.

2.1.1 State Solid Waste Facilities

There are two solid waste facilities reported on-Site. These two NYSDEC sites are:

- 314022, Class N (no further action at this time), Hudson Valley Regional Airport Landfill, approx. 30 acres in size, used for mixed municipal waste, operated between 1968 and 1972. NYSDEC has investigated this landfill, and it is currently in an Operation, Maintenance and Monitoring (OM&M) stage with groundwater monitoring.

- 314023, Class N (no further action at this time), Hudson Valley Regional Airport Balefill, 2.25-acre site, used for disposal of baled refuse between 1976 and 1977. Groundwater monitoring and site inspections are currently being conducted on a semi-annual basis.

2.1.2 State Hazardous Waste Facilities

There are two designated State Hazardous Waste Sites on-Site that are listed on the State's Site Remediation Database.

- 314078, Class 4 (Properly closed but requires continued site management), Hudson Valley Regional Airport Hangar Facility. Former IBM Hanger. The site was listed as an inactive hazardous waste site after a release occurred when spent solvents were discharged to a floor drain and flowed to a septic system. Septic tank, above ground storage tank (AST) and two industrial waste underground storage tanks (USTs) were removed. During the remedial investigation, chlorinated solvents were detected in the groundwater above NYSDEC standards.

- 314101, Class 2 (Site represents a significant threat to public health and environment), Flagship Airlines Hangar (former Command Airways hangar). Work included investigations of leaking heating oil tank and the release of spent solvents from storage tanks and overflows. The facility was used for washing aircraft. During the remedial investigation, chlorinated solvents were detected in the groundwater above NYSDEC standards.

2.2 Site Buildings and Structures

The main facilities at the Hudson Valley Regional Airport are the terminal building, the terminal apron and general aviation parking aprons, support buildings (FAA offices, Maintenance, former Richmor Aviation office, Airport Rescue and Firefighting Facilities (ARFF)), airport parking for both the public and employees, the new Dutchess Community College (DCC) Education building, and several aircraft storage hangars (T-Hangar, AAG Conventional Hangar, former Richmor Hangar, Civil Air Patrol Hangar, Whitefield Conventional Hangar, Frank Reiss Conventional Hanger).

The Hudson Valley Regional Airport is equipped with a three-runway system, with runways designated 6-24 (North/South), 7-25, and 15-33 (East/West). Runway 7-25 is a turf runway, which runs parallel to Runway 6-24. These runways are identified on the Site Plan Map included as Figure 2.

2.3 Site Utilities

The Site is served with gas and electricity by Central Hudson Gas and Electric. Municipal water is available and is being used on-Site by the new Airport Operations/ARFF building (located in the southwest corner of the property), AAG buildings, the new DCC Education building, and the airport terminal building. The remaining on-Site structures are serviced through private wells and septic systems. Site utilities were located, marked and cleared in areas of concern prior to the subsurface exploration activities completed during the SC investigation.

2.4 Roadways or Driveways on or Adjoining the Site

The Site is located adjacent to New Hackensack Rd. and Jackson Rd., Wappingers Falls, NY. The northeastern facilities of the Site can be accessed via New Hackensack Rd. to

Dutchess Airport County Rd. Parking lot entrances off Dutchess Airport County Rd. are gated and require either airport approval or airport employee status for entry. A parking lot on the southern portion of the Site is also accessed via New Hackensack Rd. Western and northwestern Site lands and facilities are accessed via Jackson Rd. to Citation Drive. Some southwestern lands can be accessed directly from Jackson Road but are gated and require airport approval and assistance for access.

2.5 Site Drainage

2.5.1 Site Storm Water and Discharge Location(s)

The Airport has a NYSDEC SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, NYSDEC Permit ID# GP-0-17-004. There are three outfalls listed in the 2018 first quarter inspection associated with the airport and the SPDES storm water permit. Stormwater at the airport flows into various swales and catch basins located throughout the runways and buildings on-Site. There are also several dry wells located on the airport grounds. The locations of the stormwater outfalls are contained in the Stormwater Pollution Prevention Plan for the Airport, which is included in Appendix I. A drainage plan for stormwater is also included in the Airport Master Plan.

2.5.2 Site Surface Water Bodies/Areas

Wappinger Creek, located on the northern perimeter of the Hudson Valley Regional Airport, generally runs northeast to southwest. Wappinger Creek drains from the north of the site to Wappinger Lake and into the Hudson River. It is a protected B(T) class stream. The best usage of Class B waters is primary and secondary contact recreation and fishing. There is a small-unnamed tributary south of Runway 15-33 that is designated a Class C stream. The best usage of Class C waters is fishing.

There is also a small pond just North of the current AAG hanger that is listed on the Airport layout plan (dated July 2002 by C&S Engineers) as a Fire Pond.

2.6 Site Waste Profile

2.6.1 Solid Wastes/Waste Deposits

Solid wastes generated at the hangars and support buildings on-Site are placed within dumpsters near their respective buildings for periodic pickup and removal. No other solid waste facilities were identified on the Site, except for Hudson Valley Regional Airport Landfill (314022) and Balefill (314023) sites, which are both closed and, in the operations, maintenance, and monitoring stage.

2.6.2 Sludge Waste

No sludge wastes were identified on the Site during the Site visit.

2.6.3 Liquids Waste

There are ASTs used on-Site for fueling and heating purposes at several of the buildings.

In addition, there are liquid hazardous wastes generated on-Site from the Site operations and maintenance activities. Below is a summary of the hazardous waste manifests listed in the EDR database related to the Site:

- 1994, EPA ID#NYD002420826, Flagship Airlines Inc. generator, 1,500 pounds of D001 waste.
- 2009, EPA ID#NYD098332430, Hudson Valley Regional Airport, Dept. of Aviation generator, 35 gallons of D001 waste.
- 2017, EPA ID#NYR000206656, Associated Aircraft Group Inc. (AAG), 100 pounds, D006, D007, D035, D040, F002 waste.

No other liquid wastes were noted during Site visits.

2.6.4 Wastewater Discharge

There were no wastewater discharges identified on the Site. Several of the hangars currently have or previously had wastewater USTs that collect and contain wastewater from the operations at the corresponding hangars.

2.6.5 Waste Lagoons or Disposal Pits

No waste lagoons or disposal pits were identified on the Site during the Site visit.

2.6.6 On-Site Septic Systems

Septic systems are in use for the Site. Several buildings on-Site have septic systems and associated leach fields. There is no municipal sewer system connection to the facilities located on the airport property. The buildings that have septic systems include the terminal building and support buildings (FAA offices, Maintenance), the former Richmor Aviation office, and the Airport Rescue and Firefighting Facilities. Several of the other aircraft storage hangars (T-Hangar, AAG Conventional Hangar, former Richmor Hangar, Civil Air Patrol Hangar, Whitefield Conventional Hangar, Frank Reiss Conventional Hanger are also connected to subsurface disposal systems.

3.0 SITE CHARACTERIZATION METHODS

3.1 Environmental Media Sampling

Following the approved Site Characterization Work Plan, environmental media sampling was completed to characterize geologic and hydrogeologic conditions of the Site. The following environmental media were sampled for field screening and laboratory analysis:

- Surface and Near-Surface Soil
- Subsurface Soil
- Sediment
- Groundwater
- Stormwater and Surface Water
- Drinking Water

The following provides the rationale for the selection of investigation in the areas of concern, which were identified based on the information compiled in the Records Search Report and the NYSDEC's August 21, 2018 and April 12, 2019 comment letters.

1. AOC-1, Firefighting AFFF Testing Area: These were selected because they are AFFF testing areas at the end of East/West runways 15 and 33. To assess if impacts have occurred to soil and groundwater at the end of runway 15 and 33, one soil boring/monitoring well was installed at each location. The borings/monitoring wells were completed at locations that are interpreted as being hydraulically downgradient of the AFFF testing area based on surface topography and location of surface water. At each location, Geoprobe borings were utilized and the test borings were converted into permanent monitoring wells. Test borings were advanced to depths of approximately five feet below the elevation of the shallow water table, which was anticipated to be approximately 4 to 6 feet below ground surface. The soil and groundwater samples were analyzed for PFAS and 1,4-Dioxane.

2. AOC–2, Former Balefill Landfill: The former Balefill landfill is located on the northern portion of the Site, to the northwest of the end of runway 15. The Balefill landfill is in an existing monitoring program for the collection of groundwater from monitoring wells for NYSDEC Part 360 routine baseline parameters. The

assessment of groundwater at the Balefill landfill utilized two existing monitoring wells that were sampled for PFAS, Polychlorinated biphenyls (PCBs), Semi-Volatile Organic Compounds (SVOCs), pesticides, and 1,4-Dioxane. The sampled wells are MW-2S and MW-3S, which were interpreted as being hydraulically down gradient of the landfill.

3. AOC-3, Former Dutchess County Landfill: The former landfill is located on the northeastern portion of the Site. There are existing monitoring wells at this landfill. To assess groundwater at the former Dutchess County Landfill, three existing downgradient wells at the landfill, MW-15, MW-20 and MW-29, were sampled for PFAS, 1,4-Dioxane, PCBs, SVOCs, and pesticides.

4. AOC-4, Jackson Road, former Petroleum Spill: In 2004, an ExxonMobil gasoline cargo tanker truck overturned on Jackson Road releasing approximately 12,500 gallons of gasoline on the shoulder of Jackson Road, just south of its intersection with Citation Drive. The spill occurred on Dutchess County Airport property and AFFF was utilized during the emergency response. The spill was assigned a NYSDEC spill number 0402678, which was investigated, and the spill was closed by the NYSDEC in June 2010. Due to the use of AFFF during the emergency response, and to assess the environmental quality of the soil and groundwater, one test boring/monitoring well was completed in the down gradient vicinity of the former spill area, on the airport property. The soil and groundwater were analyzed for PFAS, 1,4-Dioxane, TAL metals, pesticides, and PCBs. Groundwater was also analyzed for cyanide.

5. AOC-5, Stormwater Outfalls: Airport personnel actively sample three (3) outfall locations as part of their Stormwater Pollution Prevention Plan and SPDES general permit (see Appendix I). Due to activities on-Site, such as fire training activities and vehicle washing, there is a potential for the storm water to contain PFAS. Stormwater is not currently assessed for PFAS as part of the Site's general stormwater SPDES permit. Per the NYSDEC approved Site Characterization Work Plan, stormwater and sediment samples were collected at six (6) locations situated to the north of the North/South runway and analyzed for PFAS and 1,4-Dioxane. These were designated as Outfalls 002 through 007. Additionally, a stormwater and sediment sample were collected at the southern outfall

(designated as Outfall 001), located adjacent to the main terminal and New Hackensack Road, and was additionally analyzed for NYSDECs full suite of Target Compound List / Target Analyte List (TCL/TAL) constituents and cyanide.

6. AOC-6, AAG Hangars (former IBM Hanger, Site No. 314078 and Flagship Hangar, Site No. 314101): The two hangars that AAG currently leases from Dutchess County Airport are also known as the former Flagship Hangar and former IBM Hangar. The two hangars are designated separately as NYSDEC inactive hazardous waste sites due to the presence of chlorinated volatile organic compounds (CVOCs) in groundwater and soils. They are respectively known as the former IBM Hangar (a Class 4 site) and the former Flagship Hangar (a Class 2 site).

   In March 2003, a Record of Decision was issued by the NYSDEC, for the former Flagship Hangar (Site No. 314101). The selected remedy consisted of installation of deeper air-sparging points to clean up naphthalene in the lower reaches of the groundwater column. The enhanced system commenced operation in October 2003 and was shut down in 2007 with the NYSDEC approval. A Site Management Plan was approved in 2011. There are indications in the records that the NYSDEC attempted to put institutional controls on the Flagship Hanger site in 2013 but were unsuccessful.

   At the former IBM Hanger site, substantial investigative work and remedial efforts have occurred to address the CVOCs; however, the current AAG potable well (located at the former IBM hangar) exhibit high PFAS levels. This well was sampled and analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs, and metals. It should be noted that the buildings operated by AAG are now connected to municipal water.

   In addition, there is an existing network of groundwater monitoring wells (overburden and bedrock) installed at and surrounding the two hangars. To assess the environmental quality of the groundwater, samples were proposed to be collected from existing monitoring wells (A-21G, A-21S, A-21R, MW-1, MW-4, MW-5, and MW-6). C.T. Male conducted a reconnaissance of the Site on July 25,

2019 to locate and sound each of the proposed wells to be sampled for the SC. Monitoring wells MW-1 and MW-5 could not be located. C.T. Male requested via email to the NYSDEC dated October 26, for approval to replace shallow overburden well MW-1 and bedrock well MW-5 with nearby wells ME-18, and MW-3, respectively, which are generally of similar depth and construction as the wells that could not be located. The NYSDEC approved this change in scope via an email to C.T. Male dated July 26, 2019. Samples collected from the existing monitoring wells were analyzed for PFAS and 1,4-Dioxane. Monitoring wells A-21G, A-21R, A-21S, and ME-18 are referred to on the figures as MW-21G, MW-21R, MW-21S, and MW-18, respectively.

7. AOC-7, ARFF / Maintenance Building: The ARFF building has interior floor drains and an exterior septic system with leach field. Past activities within the ARFF may have included washing fire trucks or equipment containing residual AFFF. One test boring/monitoring well was completed in the vicinity of the building's septic system. The approximate location of the septic tank is proximal to the eastern corner of the building as depicted in historical records and confirmed by airport maintenance personnel. This boring/monitoring well was intended to assess the environmental quality of soil and groundwater near the building. A Geoprobe was utilized, and the test boring was converted into a monitoring well. The test boring was intended to be advanced to a depth of approximately five feet below the elevation of the shallow water table, which was anticipated to be less than twenty (20) feet below ground surface. The soil and groundwater samples were analyzed for PFAS and 1,4-Dioxane, and full suite of NYSDEC TCL/TAL constituents and cyanide.

   In addition, the ARFF/Airport Maintenance Building has a potable drinking water well, with an associated Ultraviolet System, that supplies water to the building. It has been reported by airport personnel that the water from this well is mainly used to fill the fire trucks and hand washing, but not for drinking. This well is currently monitored by Dutchess County Health Department and water samples are collected and analyzed at least twice a year for analytes as listed in table 9B of the NYS Sanitary Code. A water sample was collected from the well and analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs and metals.

8. AOC-8, Fire Pond: The firefighting pond north of the two AAG hangars may have received stormwater runoff from the area that contained AFFF. The pond may also be in hydraulic connection to groundwater which, as indicated above, is impacted by PFAS. To assess the environmental quality of the surface water and sediment in the fire pond, two surface water and sediment samples were collected from the fire pond and analyzed for PFAS and 1,4-Dioxane.

9. AOC-9, North/South Runway: To assess possible impacts to soil and groundwater at the end of runway 6 and 24, one soil boring/monitoring well was installed at each location. At each location, a Geoprobe was utilized, and the test borings were converted into permanent monitoring wells. Test borings were intended to be advanced to depths of approximately five feet below the elevation of the shallow water table, which was anticipated to be less than twenty (20) feet below ground surface. The soil and groundwater samples collected were analyzed for PFAS, 1,4-Dioxane, and the full suite of TCL/TAL constituents and cyanide.

Off-Site Locations: In addition to the AOCs identified above, as part of this investigation off-Site drinking water wells were sampled for PFAS and 1,4-Dioxane. Three drinking water wells were initially included for sampling in the SCWP, which included Location A, Location E, and a third location situated on-Site. However, subsequent to the issuance of the SCWP, the well located at the third location was abandoned and the on-Site building was connected to the municipal water supply; therefore, sampling of this well was not conducted. In addition, the NYSDEC sent out several letters to adjacent and nearby property owner on April 19, 2019, notifying the respective property owners to contact C.T. Male or the NYSDEC if they were interested in having their well tested. Based on the responses received, two additional drinking water wells were added to the off-Site investigation, which are identified as Location D and Location C. Results were also obtained from a fifth location, identified as Location B.

Additionally, in accordance with the Supplemental Site Characterization Investigation Work Plan, C.T. Male sent out letters to sixty-nine (69) homeowners within ¼ to ½ mile radius of the southeastern corner of the Site requesting access for well testing. Forty-two (42) positive responses were received, and these locations were subsequently sampled. Sample locations and corresponding concentrations of PFOA / PFOS are shown on

Figure 12. A summary table of off-Site potable well investigations is included in Appendix H.

3.2 Amendments to Field Sampling Plan (FSP)

Based on conditions encountered on the Site, the following amendments to the Field Sampling Plan were made:

- During the installation of MW105, which was intended to be installed such that the screened interval intersects the water table, the water table was not encountered before drill refusal after several boring attempts. MW105 was instead installed to the greatest depth of casing refusal.
- Pre-existing monitoring wells MW-1 and MW-5 at the AAG Hangars (AOC-6) could not be located during the SC Investigation. Pre-existing monitoring wells ME-18 and MW-3 were sampled as alternatives during groundwater sampling.

3.3 Soil Investigation

On August 5 & 6, 2019, on-Site subsurface investigation was performed through the advancement of six soil borings at pre-selected and approved locations within the Site. The subsurface investigation utilized direct push drilling techniques and conversion of the test borings into permanent monitoring wells. On August 12, 2019, surface and near-surface soil samples were collected at each of the six boring locations using a stainless-steel hand auger. The work was performed under the oversight of C.T. Male personnel. Drilling equipment including augers, rods, plugs, samplers, tools, and a drill unit. Any piece of equipment that contacted the formation was cleaned with a high temperature/high pressure steam cleaner prior to the start of work and between each boring to prevent cross-contamination between borings. The equipment was also cleaned using the same procedure upon completion of the work.

Soil samples were collected from the boreholes/monitoring well locations on a continuous basis using a direct-push drill rig. The recovered soil samples were visually classified by a geologist in general conformance with the Unified Soil Classification System, and subjectively assessed for impacts based on organoleptic perception (sight and smell) and with a photoionization detector (PID). Surface, near-surface and subsurface soil samples were collected for laboratory analyses. Of note, MW100 is located

in an asphalt paved area; therefore, a surface soil sample was not collected for laboratory analysis from this location. Soil boring logs are included in Appendix A.

3.3.1 Surface and Near-surface Soils

The following table summarizes the shallow soil samples (less than or equal to 24 inches) collected for laboratory analysis.

Table A: Shallow Soil Sample Analysis

Location	Sample ID	Depth	Analyses	Soil Observations	PID (ppmv*)
MW100	MW100-1.0	2″ – 12″	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Fill; sand and gravel, trace fragments of brick, asphalt and glass; no sheening, odor, staining	0.0 (0 – 2′)
MW101	MW101-1.5	0 – 6″	PFAS, 1,4-Dioxane, TAL Metals, Pesticides, PCBs	Topsoil; clayey silt, some fine sand; no sheening, odor, staining	0.0 (0 – 2′)
MW101	MW101-2.0	6″ – 24″			
MW102	MW102-0.5	0 – 6″	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Topsoil; clayey silt, some fine sand; no sheening, odor, staining	0.0 (0 – 2′)
MW102	MW102-2.0	6″ – 24″			
MW103	MW103-0.5	0 – 6″	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Topsoil; clayey silt, some fine sand; no sheening, odor, staining	0.0 (0 – 2′)
MW103	MW103-2.0	6″ – 24″			
MW104	MW104-0.5	0 – 6″	PFAS, 1,4-Dioxane	Topsoil; clayey silt, some fine sand; no sheening, odor, staining	0.0 (0 – 2′)
MW104	MW104-2.0	6″ – 24″			
MW105	MW105-0.5	0 – 6″	PFAS, 1,4-Dioxane	Topsoil; clayey silt, some fine sand; no sheening, odor, staining	0.0 (0 – 2′)
MW105	MW105-2.0	6″ – 24″			

* ppmv – parts per million in air

3.3.2 Subsurface Soils

The following table summarizes the deeper subsurface soil samples (greater than 12 inches) collected for laboratory analysis.

Table B: Subsurface Soil Sample Analysis

Location	Sample ID	Depth	Analyses*	Soil Observations	PID (ppmv**)
MW100	MW100-6.0	6.0′ – 7.0′	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Medium and coarse sand; no sheening, odor, staining	0.0 (6′– 8′)
MW101	MW101-8.0	8.0′ – 9.0′	PFAS, 1,4-Dioxane, TAL Metals, Pesticides, PCBs	Coarse sand and gravel; petroleum odor and staining	69.2 (8′– 10′)
MW102	MW102-4.5	4.5′ – 5.5′	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Till; silt, some gravel; no sheening, odor, staining	0.0 (4′ – 6′)
MW103	MW103-10.0	10.0′ – 11.0′	PFAS, 1,4-Dioxane, Full TCL/TAL, CN	Till; silt and fine sand, some gravel; no sheening, odor, staining	0.0 (10′ – 12′)
MW104	MW104-9.5	9.5′ – 10.5′	PFAS, 1,4-Dioxane	Clayey silt; no sheening, odor, staining	0.0 (8′ – 12′)
MW105	MW105-4.0	4.0′ – 5.0′	PFAS, 1,4-Dioxane	Till; silt and fine sand, some gravel; no sheening, odor, staining	0.0 (4′ – 6′)

** ppmv – parts per million in air
* Full TAL/TCL = TAL Metals, TCL VOCs, SVOCs, PCBs, Pesticides

3.4 Groundwater Investigation

Six monitoring wells were installed in the six soil boring locations at the Site (MW100, MW101, MW102, MW103, MW104 and MW105).

- Soil boring/monitoring well MW100 was completed within AOC-7, the ARFF / Maintenance Building.
- Soil boring/monitoring well MW101 was completed within AOC-4, the Jackson Road former Petroleum Spill.
- Soil borings/monitoring wells MW102 and MW103 were completed within AOC-9, the North/South Runway.
- Soil borings/monitoring wells MW104 and MW105 were completed within AOC-1, the Firefighting AFFF Testing Area.

3.4.1 Monitoring Well Installation

Six monitoring wells were intended to be installed into the water table in the open boreholes, however, MW105 was installed above the water table due to drilling equipment refusal. The monitoring wells were constructed using 1.25-inch diameter, 0.01-inch slot well screen, and 1.25-inch solid PVC well riser. The well screens were installed in the boreholes at depths straddling the water table (apart from MW105) in the overburden formation that was observed during borehole advancement. The monitoring well construction details and logs are presented in Appendix B.

3.4.2 Monitoring Well Survey

Following installation, the top of the monitoring well casings and road box rim elevations were surveyed by C.T. Male relative to NAVD 1988.

3.4.3 Water Levels

Depths to groundwater were recorded in the monitoring wells on August 7, 2019 and are summarized in the following table.

Table C: Groundwater Elevation Summary

Location	Top of Casing Elevation (feet, NAVD88)	Depth to Water (feet) (on date sample collected)	Groundwater Elevation
MW100	160.55	6.51	154.04
MW101	104.39	6.50	97.89
MW102	144.54	12.52	132.02
MW103	151.85	3.98	147.87
MW104	153.90	18.71	135.19
MW105	164.73	DRY	----

3.4.4 Monitoring Well Development

On August 7, 2019, each newly installed monitoring well (except MW105, which was dry) was developed to remove any accumulated fine sediment within the well and to establish a hydraulic connection with the surrounding aquifer. Monitoring wells were developed by surging and purging using a dedicated disposable plastic bailer and peristaltic pump. Purge water was containerized in DOT approved 55-gallon steel drums, covered, labeled, and stored outdoors at the Site. The wells were then left to recharge for at least 24-hours prior to collecting groundwater samples for laboratory analysis.

3.4.5 Groundwater Sampling

On August 8 and 9, 2019, five (5) of the six (6) newly installed groundwater monitoring wells were sampled for laboratory analysis, as MW105 remained dry. Additionally, the following pre-existing groundwater monitoring wells were sampled for laboratory analysis between July 31 and August 2, 2019: MW-2S and MW-3S located at the Former Balefill Landfill; MW-15, MW-20 and MW-29 located at the Former Dutchess County Landfill; A-21S, A-21G, A-21R, MW-3, MW-4, MW-6, and ME-18 located at the AAG Hangars. The analysis of the samples was performed by Alpha Analytical Laboratories, a NYSDOH certified ELAP laboratory. Monitoring well development and sampling logs are presented in Appendix D. The following table summarizes the groundwater samples collected for laboratory analysis.

Table D: Groundwater Sample Summary

Monitoring Well ID	Date Collected	Area of Concern	Analyses*
MW104	August 9, 2019	AOC-1	PFAS, 1,4-Dioxane
MW105	Not Sampled		DRY, Not Sampled
MW-2S	August 1, 2019	AOC-2	PFAS, PCBs, SVOCs, Pesticides, 1,4-Dioxane
MW-3S	August 1, 2019		
MW-15	August 2, 2019	AOC-3	PFAS, PCBs, SVOCs, Pesticides, 1,4-Dioxane
MW-20	August 2, 2019		
MW-29	August 2, 2019		
MW101	August 9, 2019	AOC-4	PFAS, TAL Metals, PCBs, Pesticides, 1,4-Dioxane
MW-3	August 1, 2019	AOC-6	PFAS, 1,4-Dioxane
MW-4	August 1, 2019		
MW-6	August 1, 2019		
ME-18	August 1, 2019		
A-21G	July 31, 2019		
A-21S	July 31, 2019		
A-21R	July 31, 2019		
MW100	August 8,2019	AOC-7	PFAS, Full TAL/TCL, 1,4-Dioxane
MW102	August 9, 2019	AOC-9	PFAS, Full TAL/TCL, 1,4-Dioxane
MW103	August 9, 2019		

* Full TAL/TCL = TAL Metals, TCL VOCs, SVOCs, PCBs, Pesticides

3.5 Surface Water and Sediment Investigation

Surface water and accompanying underlying sediment samples were collected from several stormwater outfalls and locations in the Fire Pond. Surface water and sediment sampling occurred on July 23 and 24, 2019, except for the sediment sample from the southern stormwater outfall (Outfall-001), which was collected on August 8, 2019.

On January 15, 2021, C.T. Male mobilized to collect five (5) surface water samples from the Wappingers Creek. One (1) background sample, designated as B-1, and four (4) in stream samples were collected, designated SW-1, SW-2, SW-3 and SW-5. Additionally, a sixth sample was collected from an unnamed tributary to the Wappingers Creek, designated SW-4. Approximate sample locations and corresponding analytical test results are shown on Figure 8.

3.5.1 Stormwater Outfall Sampling

Six surface water samples were collected from stormwater outfalls located to the north of the North/South runway (Outfall-002 through Outfall-007). The northern outfalls were analyzed at the laboratory for PFAS and 1,4-Dioxane. One surface water sample was collected from the stormwater outfall located adjacent to the main terminal and New Hackensack Road, south of the Site (Outfall-001). The southern outfall (Outfall 001) samples were analyzed at the laboratory for PFAS, 1,4-Dioxane, TCL VOCs, SVOCs, PCBs, Pesticides, and TAL Metals. An underlying sediment sample was collected at each of the surface water sample locations, and each accompanying sediment sample was analyzed for the same parameters at the laboratory as its corresponding surface water sample.

3.5.2 Fire Pond Sampling

Two (2) surface water samples were collected from the Fire Pond on-Site (Fire Pond-01 and Fire Pond-02). An underlying sediment sample was collected at each of the surface water sample locations. The Fire Pond surface water and sediment samples were each analyzed for PFAS and 1,4-Dioxane.

3.6 Drinking Water Well Investigation

Several on and off-Site drinking water well samples were collected during the SC Investigation. On-Site drinking water well samples were collected from the AAG potable well (at the former IBM hangar) and the Maintenance Building potable well on July 16-17, 2019, and August 7, 2019, respectively. The AAG potable well was sampled just prior to the well being taken off-line, as the facility was connected to the municipal water line. At the request of the NYSDEC, the Dutchess County Department of Behavioral and Community Health allowed the well to remain as a monitoring point as long as the well was disconnected from the building. These two (2) on-Site drinking water samples were analyzed at the laboratory for PFAS, 1,4-Dioxane, SVOCs, PCBs, and metals.

Off-Site drinking water well samples were collected from forty-two (42) potable wells near the Site. Three (3) drinking water wells were sampled twice once in 2019 and designated Locations B, C, and E and again in 2021 designated A5, A13 and A18, respectively. A sample location map is included as Figure 12.

Off-Site drinking water samples were analyzed at the laboratory for PFASs and 1,4-Dioxane. Drinking Water Well Sampling Logs are provided in Appendix E.

A summary of homeowner contact attempts, dates sampled, targeted properties, and actions required are included in Appendix H.

3.7 Data Validation

In accordance with the SC Work Plan, laboratory analytical data produced during the Site Characterization was validated by a third-party data validator in accordance with DER-10 Appendix 2B Data Usability Summary Report requirements. Quality assurance/quality control (QA/QC) samples (duplicate, matrix spike, matrix spike duplicate, trip blank, method blank, field blank and equipment blank samples) were collected. The QA/QC samples were collected in accordance with the QAPP. Laboratory reports are provided as Appendix F. Data Usability Summary Reports (DUSRs) are included in Appendix G. The laboratory reported results were usable as reported or with minor qualification as discussed in the DUSRs.

3.8 Community Air Monitoring Program

A Community Air Monitoring Program was implemented during site characterization activities in accordance with the Health and Safety Plan, and with NYSDOH regulations. All VOC and particulate readings collected during the field investigation were below response levels.

3.9 Investigation-Derived Waste Disposal

The investigation derived waste, groundwater and soils, were collected in DOT approved 55-gallon drums and stored outside at the facility, along the fence that marks the western edge of property near the maintenance building. The investigation derived waste will be held on-Site until further notice and will be properly disposed off-Site in accordance with applicable regulations later.

4.0 SITE PHYSICAL SETTING

4.1 SETTING

The Site is approximately 510.8 acres in size and is identified with tax number 135689-6259-03-225301-0000 on the Town of Wappinger tax maps. The New York State Department of Environmental Conservation (NYSDEC) has classified the Site as a potential inactive hazardous waste disposal site (P-Site #314129) as a result of the presence of combined perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at concentrations in one (1) of the potable drinking water supplies at the Site above the former health advisory value of 70 parts per trillion (ppt) set by the United States' Environmental Protection Agency (USEPA) in May 2016.

4.1.1 Topography

The Site is nearly flat across the area that is maintained immediately surrounding the airport runways, associated hangars, and airport terminal. Site elevation ranges between approximately 100 feet above mean sea level (amsl) at the southwestern property boundary to approximately 170 feet amsl at the northeastern property boundary. The land was presumably filled and built up using local, repositioned soils to flatten the grade for the runways, especially in the southwestern, western, and northwestern portions of the Site where grade slopes sharply toward the Wappinger Creek immediately beyond the areas that buffer the runways. Additionally, the Balefill and Dutchess County Landfill, to the northwest and northeast of the Site, respectively, are artificially mounded from landfilling. The grade of both landfills generally slopes downward radially, but more predominantly to the north in both instances, in the direction of the Wappinger Creek. The natural topography surrounding the Site also slopes to the northwest in the direction of the Wappinger Creek.

4.1.2 Regional Features and Landscape

The Dutchess County region surrounding the Site is moderately hilly, with an average grade that slopes downward toward both the Wappinger Creek and the Hudson River. The region lies within the Hudson River Valley and has been eroded heavily by both glacial and fluvial processes. The Wappinger Creek runs predominantly from northeast to southwest and ultimately feeds into the Hudson River on its eastern side at the Hamlet of New Hamburg. The Wappinger Creek's follows and erratic path and fluctuates largely

in width. In the village of Wappinger Falls, downgradient of the Site, the creek forms Wappinger Lake, which is a man-made reservoir. The Wappinger Creek has several tributaries of varying size and has the largest watershed in the County.

4.2 GEOLOGY

The Site is relatively large and expresses variations in both overburden soils and bedrock. Soils generally consist of sandy loams, river deposits and glacial tills, which have been heavily reworked in some sections of the Site. Bedrock is predominantly shale or limestone, but varies drastically in extent of weathering, and elevation relative to grade across the Site.

The recovered soils in borings advanced at the Site were observed to be loose sands and gravels overlying dense tills or silts. Bedrock was not encountered during on-Site drilling for the SC Investigation. Refusal at boring MW105 may have been the result of encountering bedrock.

4.2.1 Geologic History

The oldest bedrock found in Dutchess County is a mixture of gneiss and granite that were formed from pre-existing sedimentary rocks during a continental collision known as the Grenville Orogeny, approximately 1 billion years ago (bya). Roughly 0.5 bya, the supercontinent formed by the Grenville Orogeny broke apart, leaving the area now known to be Dutchess County on the edge of the North American continent, subject to sedimentary deposition that varied as sea level changed. The limestones and shales that now underly much of the County were largely deposited in their present location during periods of deeper sea level. About 450 million years ago (mya), North America was affected by another continental collision that is now known as the Taconic Orogeny, resulting in significant mountain building along the eastern edge of present-day New York, and the ultimate formation of a foreland basin that spanned much of the state, including Dutchess County. An extensive series of thrust faulting occurred during the Taconic Orogeny, which pushed large masses of sandstones and shales over much of the previously formed sedimentary rocks of Dutchess County. The foreland basin formed during the Taconic Orogeny which ultimately led to the deposition and lithification of other sedimentary rocks including sandstones and shales, as the Taconic Mountain Range that formed during the Orogeny eroded. A combination of sedimentary rocks formed

through these events now underly Dutchess County, though the oldest metamorphic and igneous rocks have been encountered as bedrock in some areas as well (Budnik et al., 2010).

The Laurentide Ice Sheet fully covered Dutchess County roughly 20,000 years ago and is the most recent geologic force to drastically influence the regional geology and topography. Glaciers associated with the ice sheet's retreat scoured the bedrock, forming undulating valleys and leaving behind surficial deposits (glacial till) of varying source and grain size that are still present today. Fluvial processes of erosion have since dominated the area and continue to modify the landscape (Budnik et al., 2010).

4.2.2 Soils

Overburden soils at the Site consist of primarily silts and sands. Gravelly sections of overburden also exist but are less extensive, based on review of the soil borings for previous site investigations. Deeper sections of soil consist of glacial till with a silty-clay matrix and highly variable grain size. Till was observed or reported to be somewhat weathered, saturated, and only moderately dense in most instances. Additionally, like most overburden units encountered at the Site, the till was not found extensively, likely having been eroded away entirely in some locations. Overburden soils generally reflect fluvial deposits expected given the Site's proximity to the Wappinger Creek.

Soils on the Site are mapped by the United States Department of Agriculture (USDA) Web Soil Survey primarily as udorthents, or gravelly loam, likely derived from glacial outwash and kame deposits. Udorthents are described by the USDA as well drained soils that have often been disturbed or reworked by cuffing or filling in areas that are covered by buildings or pavement. The Wappinger loam and Pawling Silt loam are both mapped by the USDA in the western portions of the Site, and are siltier, fine-grained loams that are likely derived from lake and stream sediments.

4.2.3 Bedrock

Boring logs for pre-existing monitoring wells which extended into the surface of bedrock at the Site indicate that the bedrock beneath the Site is predominantly shale accompanied by intermittent to abundant veins of quartz. Some of the boring logs indicate limestone as bedrock. Upon additional review of bedrock mapping completed for Dutchess County, it is suspected that the bedrock beneath the Site is primarily the Austin Glen Member of

the Normanskill Formation. This is a Middle Ordovician unit of interbedded greywackes and shales whose depositional setting would most likely correlate to the foreland basin of Taconic Orogeny, described in the sections above (Fisher et al., 1970). It is possible that greywacke was misclassified as limestone in limited instances at the Site where limestone was reportedly encountered. It is also possible that limestone encountered at the Site is an autochthonous unit, older than the Taconic Orogeny, or a section of Taconic Melange, thrusted into the foreland during the collision event. The predominantly shale bedrock at the Site was noted to be moderately to heavily eroded at most locations, and can be seen in outcrops surrounding the Site, as well as in the bed of the Wappinger Creek immediately adjacent to the Site.

Using on-Site data from boring logs which penetrated bedrock, and depth-to-bedrock data taken from the NYSDEC's Records of Registered Water Well's, a regional and site bedrock elevation map was created and is included as Figure 13. Kriging was used as the gridding method to infer contours of the bedrock surface in feet above mean sea level (ft. amsl) using the available data.

4.3 Hydrology

A Fire Pond located adjacent to the former IBM Hangar is the only surface water body located on-Site. The Wappinger Creek is located topographically downgradient from, and approximately 100 to 500 feet to the north and west of the Site boundary. The creek flows southwest toward Wappingers Falls and Wappinger Lake, ultimately discharging to the Hudson River. Greens Pond is located topographically downgradient from, and approximately 500 feet to the south of the Site across New Hackensack Road. The pond drains via a seasonal, unnamed stream to the Wappinger Creek. Lastly, a series of unnamed, perennial streams are noted to the east and south of the Site, which ultimately drain to either Wappinger Lake or Wappinger Creek.

4.3.1 Stream Gauges

Four surface water/stream gauges were installed in surface water bodies surrounding the Site by CTM Field Staff in May 2021 ahead of the collection of monthly water level data. Two gauges are located in the Wappinger Creek, adjacent to the Site at one upstream location and one downstream location. One stream gauge was installed in Greens Pond, and another stream gauge was installed in the unnamed stream that drains

from Greens Pond, upstream of its mouth to the Wappingers Creek. The gauges were intended to supplement monthly water level events and to evaluate the potential influence of surface water fluctuations on groundwater flow, or vice versa.

4.3.2 Site Hydrogeology

The Site hydrogeology is relatively complex, largely due to the heterogeneity of soils across the roughly 500-acre area. The Site's soils were presumably reworked in several areas to develop the land surface in a manner necessary for site operations, adding to the complexity. Monitoring well and soil boring logs were obtained from previous site investigations and information compiled in the Records Search Report and were carefully considered during the development of the conceptual site model. However, logs for several boring/monitoring well locations could not be obtained.

Monitoring wells were gauged monthly in March, April, and May of 2021 for the purpose of groundwater flow mapping and to observe single-season variations in groundwater behavior.

4.3.3 Hydrogeologic Units

After review of the available boring and monitoring well installation logs, it appears that three distinct aquifers exist at the Site, pending further evaluation and aquifer testing: 1) a bedrock aquifer (Bedrock Aquifer), 2) a deep unconsolidated aquifer, located directly above bedrock or till stratigraphically, (Unconsolidated Semi-confined Aquifer) separated by a leaky aquitard and 3) a shallow or perched water table aquifer (Perched or Water Table Aquifer).

The readily available monitoring well construction logs were compiled and a summary table of the available logs was prepared that includes the well name, installation date, well type (overburden vs bedrock), total drilled depth (feet below ground surface), well total depth (feet below ground surface), and screened interval (feet below ground surface. The summary table and associated logs are included in Appendix D.

<u>Confining Layers and Aquitards</u>

The distinction of each of the three aquifers categorized above stems from the identification of two confining units, or more likely, leaky aquitards: The first being the

interface of the weathered bedrock surface and basal till, where encountered, and the second being a clayey silt and/or sand unit encountered at several deep monitoring well locations which extends from about 10-15 feet below the water table to about 20-40 feet below the water table.

4.3.4 Classification of Existing Monitoring Wells

A large, but localized monitoring well network exists at the Site from several previous environmental investigations. Most pre-existing groundwater monitoring wells are in the immediate vicinity of the Former IBM and Flagship Hangars. Smaller sets of pre-existing monitoring wells exist for the Balefill and Dutchess County Landfills.

Pre-existing monitoring wells at the Site were classified into the one of the following three aquifer categories: 1) bedrock 2) unconsolidated semi-confined 3) perched. The following methods were used to aid in the classification in a fashion of decreasing priority and confidence based on the information available: 1) Monitoring wells with available soil logs were classified first into one of the three categories above based on the combined interpretation of their soil log and monitoring well installation specifications, 2) Monitoring wells without available logs were classified by their total well depth paired with knowledge of wells with boring and installation logs in close proximity, 3) Monitoring wells without available logs and without close proximity to other wells with available logs were classified by their total well depth paired with gauged water table elevation, relative to other site monitoring wells. Finally, in instances where none of the above assumptions could be applied with a reasonable degree of confidence in order to classify a monitoring well, the monitoring well was omitted from groundwater flow mapping. Furthermore, if significant and obvious outliers were determined to exist during preliminary groundwater flow mapping, those points were henceforth omitted from groundwater flow mapping.

Note that while the confining units/leaky aquitards described in the sections above may be discontinuous, the monitoring well classification scheme was applied site-wide for the sake of consistency. If either of the confining units could not be identified at a given location, the monitoring well classification was based on the location of the screened interval stratigraphically.

4.3.5 Supplemental Monitoring Well Network

Six monitoring wells were installed under the supervision and instruction of C.T. Male Associates (CTM) Field Staff in August 2019 in accordance with the Site Characterization Work Plan (2018). The wells were intended to supplement the pre-existing monitoring well network and to address immediately identifiable data gaps at the Site. They target the shallow groundwater aquifer at ends both major runways, the Jackson Rd. Spill area, and the Maintenance/ARFF Building.

4.3.6 Groundwater Flow

The entire site monitoring well network was gauged monthly from March through May of 2021. A monitoring well survey was also completed in March of 2021 to acquire elevation data for groundwater mapping purposes. The calculated groundwater elevations from each event were used to prepare a groundwater flow contour map as depicted in Figures 3. Kriging was used with linear drift as the gridding method to infer contours of the groundwater surface in feet above mean sea level (ft. amsl) using each available dataset.

The shallow groundwater aquifer generally flows west and northwest, across the Site in the direction of the Wappinger Creek and mirroring the topography and drainage characteristics of the area surrounding the Site. Groundwater in the shallow unconsolidated soils exists under typical unconfined aquifer conditions. Based on the observed shallow groundwater flow pattern and local topography, the shallow aquifer likely discharges at the Wappinger Creek, which exists at an elevation approximately 60 feet lower than the central portion of the Site. Finally, no significant variation in shallow groundwater flow could be identified over the course of the Spring season.

The deep groundwater aquifer generally flows northwest across the Site in the direction of the Wappinger Creek and mirroring the topography and drainage characteristics of the area surrounding the Site. Deep groundwater flow aligns closely with shallow groundwater flow, though it should be noted that the deep aquifer monitoring well network is much more limited. Groundwater in the deep unconsolidated soils most likely exists under leaky confined conditions beneath the Site, but it is suspected that the aquifer may transition to unconfined and blend with the shallow aquifer at some point down-groundwater gradient of the Site. Based on the observed deep groundwater flow pattern,

the deep aquifer likely discharges with the shallow aquifer at the Wappinger Creek. No significant variation in deep groundwater flow could be identified over the course of the Spring season. A groundwater contour map is included as Figure 3.

The bedrock aquifer is lacking water level data due to the limited monitoring well network, which are located only in the immediate vicinity of the Former IBM and Flagship Hangars. Since AFFF was sprayed directly to the ground surface, the subject investigation focused largely on the shallow aquifer system. The shallow groundwater appears to flow in a westerly direction, toward the Wappinger Creek. We do not have enough data to make conclusions related to the direction of groundwater flow in the bedrock aquifer. It should be noted that the monitoring well network was established prior to on-Site buildings connecting to the municipal water supply. Groundwater flow direction in the bedrock aquifer is interpreted to be primarily to the west. However, due to the limited data available, this interpretation needs to be further investigated. Flow to the west under non-pumping influence is best depicted in Figure 13, mapped from the water level data collected on April 24, 2021. Groundwater in the bedrock aquifer most likely exists under leaky confined aquifer conditions but may vary on a larger scale. Discharge for the bedrock aquifer is again inconclusive due to the limited dataset. No significant variation in bedrock groundwater flow could be identified over the course of the Spring season. A bedrock groundwater flow contour map is depicted in Figure 13.

Vertical Flow Direction

Long term pressure transducer data loggers were deployed in a monitoring well triplet on-Site with a well screened in the shallow (A-21S), deep (A-21G), and bedrock (A-21R) aquifers. The purpose of the long-term monitoring was to examine changes in water level and potentiometric surface of each of the hydrogeologic units and correlate any observable trends, potentially providing insight as to the degree of which the three units may communicate with one another. Preliminary evaluations of the data logs suggest that each of the three units respond similarly to events of significant rainfall, but at a diminished rate with increasing depth, supporting the inference that the three units are separated by leaky aquitards and are not truly confined.

5.0 SITE CHARACTERIZATION RESULTS

5.1 General

The SC investigation involved the collection and laboratory analysis of soil, groundwater, surface water, sediment, and drinking water samples. The samples were analyzed for a combination of the following, depending on the AOC: NYS TCL VOCs, SVOCs, 1,4-Dioxane, PCBs, pesticides, TAL Metals, total cyanide and PFAS. Detected chemical compounds in the various media sampled as part of the SC and the analytical results are presented in Tables 1 through 43. The analyses of the samples were performed by Alpha Analytical Laboratories (Alpha) a NYSDOH certified ELAP laboratory. A summary of the media sampled and analyzed is provided in the sections below. The following table summarizes the analytical tables and figures relative to the respective AOCs.

Table E: Analytical Table and Figure Summary

AOC	Media	Table(s)	Figure(s)
1: Firefighting AFFF Testing Area	Soil	1A	4
	Groundwater	1	6
2: Former Balefill Landfill	Groundwater	2-5	6
3: Former Dutchess County Landfill	Groundwater	6-9	6
4: Jackson Road, Former Petroleum Spill	Soil	10A-13A	4
	Groundwater	10-13	6, 7
5: Stormwater Outfalls	Surface Water	14-18, 42	8, 9
	Sediment	14A-18A, 42A	10, 11
6: AAG Hangers	Groundwater	23	6
	Drinking Water	19-22	6, 7, 12

AOC	Media	Table(s)	Figure(s)
7: ARFF / Maintenance Building	Soil	24A-29A	4, 5
	Groundwater	24-29	6, 7
	Drinking Water	30-33	6, 7, 12
8: Fire Pond	Surface Water	34	8
	Sediment	34A	10
9: North /South Runway	Soil	35A-40A	4
	Groundwater	35-40	6, 7
Off-Site Locations	Surface Water	Not Applicable	8
	Drinking Water	42	12

Compounds detected in the various media analyzed during this SC were compared to the following New York State guidance documents and standards that were in effect at the time of the Department approved Work Plan and data collection:

- NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1); Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations dated October 1993; Revised June 1998; errata sheet dated January 1999; and Addendum dated April 2000 (NYSDEC Class GA);

- NYSDEC Regulation, 6 NYCRR Subpart 375-6, "Remedial Program Soil Cleanup Objectives". Soil analytical results for this investigation were compared against NYSDEC 6 NYCRR Part 375-6 Unrestricted Use Soil Cleanup Objectives (SCO), protection of public health; and

- USEPA Drinking Water Health Advisory for PFOA and perfluorooctane-sulfonic acid (PFOS) dated May 2016.

Additionally, the following guidance documents are available from the NYSDEC:

- NYSDEC July 2020 Maximum Contaminant Levels for drinking water for PFOA, PFOS, and 1,4-Dioxane;
- NYSDEC June 2021 Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS); and,
- NYSDEC October 2021 Addendum to TOGS 1.1.1 AQWS for PFOA, PFOS, and 1,4-Dioxane.

At the time of the Department approved Work Plan and data collection, no NYSDEC regulatory standards were available for 1,4-Dioxane in water. The NYSDEC had proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health.

5.2 AOC-1; Firefighting AFFF Testing Area – Soil Analytical Results

Surface soil and subsurface soil samples were collected at soil boring locations within AOC-1. Two test borings were completed and converted into permanent monitoring wells. Groundwater samples were collected from the monitoring wells after well development. Surface and near-surface soil samples were collected from 0 to 6 inches (including the root zone) and 6 to 24 inches below grade. Subsurface soil samples were collected based on subjective field screening of soils, or otherwise directly above the water table.

The soil and groundwater samples were analyzed for PFAS and 1,4-Dioxane. Sample results are presented below, and the reported laboratory results are presented in Tables 1 and 1A.

5.2.1 AOC-1; Surface and Near-Surface Soils Analytical Results

Results from the surface and near-surface soil samples (collected from 0 to 6 inches and 6 to 24 inches below grade) identified detections of PFAS at both soil boring locations. Figure 4 depicts the soil concentrations at each boring for PFAS. Currently there are no

NYSDEC regulatory standards or guidance values for PFAS in soils. The PFAS detections are summarized below:

- MW104 surface soil sampling results detected fifteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 2.42 ppb. PFOS was detected at 129 ppb. The near-surface soil sample detected twelve PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.688 ppb. PFOS was detected at 109 ppb.

- MW105 surface soil sampling results detected fourteen PFAS compounds, including estimated detections ("J" qualified) of PFOA at 1.1 ppb. PFOS was detected at 113 ppb. The near-surface soil sample detected fourteen PFAS compounds, including estimated detections ("J" qualified) of PFOA at 1.1 ppb. PFOS was detected at 89.5 ppb.

1,4-Dioxane was not detected in any surface soil samples collected within AOC-1.

5.2.2 AOC-1; Subsurface Soils Analytical Results

Results from the subsurface soil samples identified detections of PFAS at both soil boring locations. Figure 4 depicts the soil concentrations at each boring for PFAS. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. The PFAS detections are summarized below:

- MW104 soil sampling results detected five PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.14 ppb. PFOS was detected at 43.8 ppb.
- MW105 sampling results detected ten PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.16 ppb. PFOS was detected at 56.9 ppb.

1,4-Dioxane was not detected in any subsurface soil sample collected within AOC-1.

5.2.3 AOC-1; Groundwater Analytical Results

Results from the groundwater samples identified detections of PFAS at the sampled location. At MW104, PFOA and PFOS were detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water for each respective compound. Figure 6 depicts the groundwater concentrations at each well for PFAS. The PFAS detections are summarized below:

- MW104 sampling results detected eleven PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 122 ppt and PFOS was detected at 1,720 ppt.
- MW105 was not sampled.

1,4-Dioxane was not detected in any groundwater sample collected within AOC-1.

5.3 AOC-2; Former Balefill Landfill – Analytical Results

Groundwater samples were collected from two pre-existing monitoring wells at the Balefill Landfill which were interpreted as being hydraulically down gradient of the landfill.

The groundwater samples were analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs and Pesticides. Sample results are presented below, and the reported laboratory results are presented in Tables 2 through 5.

5.3.1 AOC-2; Groundwater Analytical Results

Results from the groundwater samples identified detections of PFAS at the sampled locations. At MW-2S and MW-3S, PFOS was detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. At MW-3S, PFOA was detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. Figure 6 depicts the groundwater concentrations at each well for PFAS and 1,4-Dioxane. The PFAS detections are summarized below:

- MW-2S sampling results detected eleven PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 22.5 ppt and PFOS was detected at 932 ppt.
- MW-3S sampling results detected eleven PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 35.8 ppt and PFOS was detected at 21.4 ppt.

1,4-Dioxane was detected at 0.635 ppb in both groundwater samples. There are currently no NYSDEC regulatory standards for 1,4-Dioxane in groundwater. NYSDEC has proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health. There were no detections of SVOCs, PCBs or Pesticides that exceeded NYSDEC TOGS 1.1.1 for groundwater.

5.4 AOC-3; Former Dutchess County Landfill – Analytical Results

Groundwater samples were collected from three pre-existing monitoring wells at the Dutchess County Landfill which were interpreted as being hydraulically down gradient of the landfill.

The groundwater samples were analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs and Pesticides. Sample results are presented below, and the reported laboratory results are presented in Tables 6-9.

5.4.1 AOC-3; Groundwater Analytical Results

Results from the groundwater samples identified detections of PFAS at the sampled locations. At MW-20, PFOA and PFOS were detected in exceedance of the former USEPA health advisory level of 70 ppt for each respective compound in drinking water. Figure 6 depicts the groundwater concentrations at each well for PFAS and 1,4-Dioxane. The PFAS detections are summarized below:

- MW-15 sampling results detected eleven PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 31.1 ppt and PFOS was detected at 19.7 ppt.
- MW-20 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 76.6 ppt and PFOS was detected at 79.2 ppt.
- MW-29 sampling results detected ten PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 8.71 ppt and PFOS was detected at 8.86 ppt.

1,4-Dioxane was detected in concentrations of 1.92 ppb, and 15.4 ppb at MW-15 and MW-20, respectively. 1,4-Dioxane was non-detect (ND) at MW-29. There are currently no NYSDEC regulatory standards for 1,4-Dioxane in water. NYSDEC has proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health. There were no detections of SVOCs, PCBs or Pesticides that exceeded NYSDEC TOGS 1.1.1 for groundwater.

5.5 AOC-4; Jackson Road, Former Petroleum Spill – Analytical Results

Surface soil and subsurface soil samples were collected at a soil boring location within AOC-4. One test boring was completed and converted into a permanent monitoring well.

A groundwater sample was collected from the monitoring well after well development. Surface soil samples were collected from 0 to 2 inches and 2 to 12 inches below grade. Subsurface soil samples were collected based on subjective field screening of soils, or otherwise directly above the water table.

The soil and groundwater samples were analyzed for PFAS, 1,4-Dioxane, TAL Metals, PCBs and Pesticides. The groundwater sample was also analyzed for cyanide. Sample results are presented below, and the reported laboratory results are presented in Tables 10 through 13.

5.5.1 AOC-4; Surface and Near-Surface Soils Analytical Results

Results from the surface soil samples (collected from 0 to 6 inches and 6 to 24 inches below grade) identified detections of PFAS at the soil boring location. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations at each boring for PFAS. The PFAS detections are summarized below:

- MW101 surface soil sampling results detected nine PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.132 ppb and PFOS at 2.72 ppb. The near-surface soil sample detected ten PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.45 ppb. PFOS was detected at 11.3 ppb.

1,4-Dioxane was not detected in any surface soil samples collected within AOC-4. Metals, PCBs and Pesticides did not exceed their respective NYSDEC concentrations for Unrestricted SCO in any surface soil samples.

5.5.2 AOC-4; Subsurface Soils Analytical Results

Results from the subsurface soil sample identified detections of PFAS at the soil boring location. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations at each boring for PFAS. The PFAS detections are summarized below:

- MW101 sampling results detected five PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.06 ppb. PFOS was detected at 1.12 ppb.

1,4-Dioxane was not detected in the subsurface soil sample collected within AOC-4. Metals, PCBs and Pesticides did not exceed their respective NYSDEC concentrations for Unrestricted SCO in any subsurface soil samples.

5.5.3 AOC-4; Groundwater Analytical Results

Results from the groundwater sample identified detections of PFAS at the sampled location. PFOA and PFOS were not detected in exceedance of the former USEPA health advisory level of 70 ppt for each respective compound; however, the combined PFOA/PFOS concentrations exceed 70 ppt. Figure 6 depicts the groundwater concentrations at each well for PFAS. The PFAS detections are summarized below:

- MW101 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 11.3 ppt and PFOS was detected at 68.1 ppt.

1,4-Dioxane, PCBs and Pesticides were not detected in the groundwater sample collected within AOC-4. However, Total Iron was detected at a concentration of 7,690 ppb and Total Manganese was detected at a concentration of 1,657 ppb, both in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for groundwater. No other Metals were detected in exceedance of the NYSDEC TOGS 1.1.1 for groundwater. Cyanide was not detected in groundwater. Figure 7 depicts the groundwater concentrations at each well for non-PFAS constituents.

5.6 AOC-5; Stormwater Outfalls – Analytical Results

Seven surface water samples were collected from various stormwater outfalls associated with the Site. A sediment sample was also collected from each stormwater outfall in association with the surface water samples.

Six surface water and six sediment samples collected from stormwater outfalls north of the North/South runway were analyzed for PFAS and 1,4-Dioxane. One surface water and one sediment sample collected from Outfall 001, located adjacent to the main terminal and New Hackensack Road were analyzed for PFAS, 1,4-Dioxane, TAL Metals plus Cyanide, TCL VOCs, SVOCs, PCBs and Pesticides. Sample results are presented below, and the reported laboratory results are presented in Tables 14 through 18, and 42.

5.6.1 AOC-5; Surface Water Analytical Results

Results from the surface water samples identified detections of PFAS at the sampled locations. At Outfall-001 and Outfall-003, PFOS was detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. Figure 8 depicts the surface water concentrations at each location for PFAS. The PFAS detections are summarized below:

- Outfall-001 sampling results detected fourteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 21.4 ppt and PFOS was detected at 140 ppt.
- Outfall-002 sampling results detected nine PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 2.39 ppt and PFOS was detected at 13.4 ppt.
- Outfall-003 sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 8.3 ppt and PFOS was detected at 339 ppt.
- Outfall-004 sampling results detected nine PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 2.75 ppt and PFOS was detected at 12.7 ppt.
- Outfall-005 sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 14.9 ppt and PFOS was detected at 9.24 ppt.
- Outfall-006 sampling results detected nine PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 6.16 ppt and PFOS was detected at 2.68 ppt.
- Outfall-007 sampling results detected nine PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 10.5 ppt and PFOS was detected at 4.23 ppt).

1,4-Dioxane was not detected in any surface water samples collected within AOC-5. At Outfall-001, VOCs, PCBs and Pesticides were not detected in the surface water sample. The following SVOCs were detected at Outfall-001 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for surface water: Benzo(a)anthracene at 0.04 ppb, Benzo(a)pyrene at 0.02 ppb, Benzo(b)fluoranthene at 0.04 ppb, Benzo(k)fluoranthene at 0.02 ppb, and Chrysene at 0.04 ppb. Additionally, the following Metals were detected at Outfall-001 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for surface water: Total Antimony at 16 ppb, Total Iron at 588 ppb, Total Manganese at 712 ppb, Total Sodium at 81,300 ppb. No other SVOCs or Metals were detected at Outfall-001 in exceedance of the NYSDEC TOGS 1.1.1 for surface water. Figure 9 depicts the surface water concentrations at each location for non-PFAS constituents.

5.6.2 AOC-5; Sediment Analytical Results

Results from the sediment samples identified detections of PFAS at the stormwater outfall locations. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in sediments. Figure 10 depicts the sediment concentrations for PFAS. The PFAS detections are summarized below:

- Outfall-001 sampling results detected two PFAS compounds, including estimated detections ("J" qualified) of PFOS at 0.36 ppb. PFOA was not detected.
- Outfall-002 sampling results detected seven PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.11 ppb and PFOS at 1.1 ppb.
- Outfall-003 sampling results detected six PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.09 ppb. PFOS was detected at 7.57 ppb.
- Outfall-004 sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.46 ppb. PFOS was detected at 7.8 ppb.
- Outfall-005 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.64 ppb. PFOS was detected at 1.84 ppb.
- Outfall-006 sampling results detected four PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.14 ppb and PFOS at 0.36 ppb.
- Outfall-007 sampling results had no PFAS detections.

1,4-Dioxane was not detected in any sediment samples collected within AOC-5. At Outfall-001, SVOCs, PCBs, Pesticides, and Metals did not exceed their respective sediment guidance values (SGV). Acetone was detected in the sediment sample at a concentration of 0.058 ppb, however, acetone is commonly identified as a laboratory artifact and is not believed to be related to site operations. No other VOCs exceeded SGVs. Figure 11 depicts the sediment concentrations for non-PFAS constituents.

5.7 AOC-6; AAG Hangars – Analytical Results

Groundwater samples were collected from seven pre-existing monitoring wells which were installed during previous remedial investigation work. Additionally, a drinking water well sample was collected from the AAG potable well at the former IBM Hangar.

The groundwater samples were analyzed for PFAS, 1,4-Dioxane. The drinking water well sample was analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs and Metals. Sample

results are presented below, and the reported laboratory results are presented in Tables 19 through 23.

5.7.1 AOC-6; Groundwater Analytical Results

Results from the groundwater samples identified detections of PFAS at the sampled location. PFOA and PFOS were detected in exceedance of the former USEPA health advisory level of 70 ppt for each respective compound in drinking water for the following monitoring wells: A-21G, A-21R, A-21S, and ME-18. At MW-4 and MW-6, PFOS was detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. Figure 6 depicts the groundwater concentrations at each well for PFAS. The PFAS detections are summarized below:

- A-21G sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 500 ppt and PFOS was detected at 3,240 ppt.
- A-21R sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 371 ppt and PFOS was detected at 3,010 ppt.
- A-21S sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 184 ppt and PFOS was detected at 2,200 ppt.
- ME-18 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 77.5 ppt and PFOS was detected at 2,030 ppt.
- MW-3 sampling results detected eight PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.78 ppt. PFOS was detected at 12.3 ppt.
- MW-4 sampling results detected eleven PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 28.5 ppt and PFOS was detected at 1,420 ppt.
- MW-6 sampling results detected fourteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 47.7 ppt and PFOS was detected at 1,320 ppt.

1,4-Dioxane was not detected in any groundwater sample collected within AOC-6.

5.7.2 AOC-6; Drinking Water Analytical Results

Results from the drinking water samples identified detections of PFAS at the sampled location. PFOA and PFOS were both detected in exceedance of former USEPA health

advisory level of 70 ppt for each respective compound in drinking water for the AAG potable well. Figures 6 and 12 depict the groundwater concentrations for PFAS.

1,4-Dioxane was not detected in any of the drinking water well samples collected within AOC-6. SVOCs and PCBs were not detected in exceedance of the NYSDEC TOGS 1.1.1 for drinking water at the sampling location. Total Sodium was detected at 157,000 ppb, in exceedance of the NYSDEC TOGS 1.1.1 for drinking water of 20,000 ppb. No other metals were detected in exceedance of the applicable drinking water criteria. Figure 7 depicts the groundwater concentrations at for non-PFAS constituents.

5.8 AOC-7; ARFF / Maintenance Building – Analytical Results

Near-surface soil and subsurface soil samples were collected at a soil boring location within AOC-7. One test boring was completed and converted into a permanent monitoring well. A groundwater sample was collected from the monitoring well after well development. Surface soil samples were collected from 2 to 12 inches below grade (below the pavement). Subsurface soil samples were collected based on subjective field screening of soils, or otherwise directly above the water table. A drinking water sample was also collected from the potable drinking water well associated with the maintenance building.

The soil and groundwater samples were analyzed for PFAS, 1,4-Dioxane, TAL Metals plus Cyanide, TCL VOCs, SVOCs, PCBs and Pesticides. The drinking water sample was analyzed for PFAS, 1,4-Dioxane, Metals, SVOCs and PCBs. Sample results are presented below, and the reported laboratory results are presented in Tables 24 through 33.

5.8.1 AOC-7; Near-Surface Soils Analytical Results

Results from the near-surface soil sample (6 to 12 inches below grade) identified detections of PFAS at the soil boring location. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations at MW100 for PFAS The PFAS detections are summarized below:

- MW100 sampling results detected nineteen PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.44 ppb. PFOS was detected at 369 ppb.

1,4-Dioxane was not detected in the surface soil sample collected within AOC-7. Metals, VOCs, SVOCs, PCBs and Pesticides did not exceed their respective NYSDEC concentrations for Unrestricted SCO in the surface soil sample.

5.8.2 AOC-7; Subsurface Soils Analytical Results

Results from the subsurface soil sample identified detections of PFAS at the soil boring location. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations for PFAS. The PFAS detections are summarized below:

- MW100 sampling results detected fourteen PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.29 ppb. PFOS was detected at 36.8 ppb.

1,4-Dioxane was not detected in the subsurface soil sample collected within AOC-7. VOCs, SVOCs, PCBs and Pesticides did not exceed their respective NYSDEC concentrations for Unrestricted SCO in the surface soil sample. Total Copper, Total Lead, and Total Zinc were detected at 66.8 ppm, 70 ppm, and 138 ppm respectively, in exceedance of their respective NYSDEC concentrations for Unrestricted SCO of 50 ppm, 63 ppm and 109 ppm. No other metals were detected in exceedance of their applicable criteria. Figure 5 depicts the soil concentrations at MW100 for non-PFAS constituents.

5.8.3 AOC-7; Groundwater Analytical Results

Results from the groundwater sample identified detections of PFAS at the sampled location. At MW100, PFOS was detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. Figure 6 depicts the groundwater concentrations at MW100 for PFAS. The PFAS detections are summarized below:

- MW100 sampling results detected eighteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 47.1 ppt and PFOS was detected at 595 ppt.

1,4-Dioxane was not detected in the groundwater sample collected within AOC-7. VOCs, SVOCs, PCBs and Pesticides did not exceed their respective concentrations for NYSDEC TOGS 1.1.1. Total Sodium was detected at 135,000 ppb, in exceedance of the NYSDEC TOGS 1.1.1 for drinking water of 20,000 ppb. No other metals were detected in

exceedance of the applicable groundwater criteria. Figure 7 depicts the groundwater concentrations for non-PFAS constituents.

5.8.4 AOC-7; Drinking Water Analytical Results

Results from the drinking water sample identified detections of PFAS at the sampled location. However, PFOA and PFOS were not detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. The PFAS detections are summarized below:

- The maintenance building potable well sampling results detected four PFAS compounds, including estimated detections ("J" qualified). PFOA and PFOS were both ND in the drinking water sample.

1,4-Dioxane was detected at 0.254 ppb in the drinking water sample. There are currently no NYSDEC regulatory standards for 1,4-Dioxane in water. NYSDEC has proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health. SVOCs and PCBs were not detected. Total Iron, Total Magnesium, and Total Sodium were detected at 434 ppb, 42,700 ppb, and 86,900 ppb respectively, in exceedance of their respective NYSDEC TOGS 1.1.1 standards of 300 ppb, 35,000 ppb and 20,000 ppb. No other metals were detected in exceedance of the applicable drinking water criteria. Figure 7 depicts the groundwater concentrations for non-PFAS constituents.

5.9 AOC-8; Fire Pond – Analytical Results

Two surface water samples were collected from the fire pond on the Site. A sediment sample was also collected from each location in association with the surface water samples.

The surface water and sediment samples collected from the fire pond were analyzed for PFAS and 1,4-Dioxane. Sample results are presented below, and the reported laboratory results are presented in Table 34.

5.9.1 AOC-8; Surface Water Analytical Results

Results from the surface water samples identified detections of PFAS at the sampled locations. At both sampling locations, PFOS was detected in exceedance of the former

USEPA health advisory level of 70 ppt in drinking water. Figure 8 depicts the surface water concentrations at each well for Total PFAS. The PFAS detections are summarized below:

- Fire Pond-01 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 26.1 ppt and PFOS was detected at 214 ppt.
- Fire Pond-02 sampling results detected thirteen PFAS compounds, including estimated detections ("J" qualified). PFOA was detected at 23.8 ppt and PFOS was detected at 195 ppt.

1,4-Dioxane was not detected in any surface water samples collected within AOC-8.

5.9.2 AOC-8; Sediment Analytical Results

Results from the sediment samples identified detections of PFAS at the stormwater outfall locations. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in sediments. Figure 10 depicts the sediment concentrations for PFAS. The PFAS detections are summarized below:

- Fire Pond-01 sampling results detected twelve PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.21 ppb. PFOS was detected at 11.6 ppb.
- Fire Pond-02 sampling results detected ten PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.21 ppb. PFOS was detected at 7.83 ppb.

1,4-Dioxane was not detected in any sediment samples collected within AOC-8.

5.10 AOC-9; North / South Runway – Analytical Results

Surface soil and subsurface soil samples were collected at soil boring locations within AOC-9. Two test borings were completed and converted into permanent monitoring wells. Groundwater samples were collected from the monitoring wells after well development. Surface and near-surface soil samples were collected from 0 to 6 inches (including the root zone) and 6 to 24 inches below grade. Subsurface soil samples were collected based on subjective field screening of soils, or otherwise directly above the water table.

The soil and groundwater samples were analyzed for PFAS, 1,4-Dioxane, TAL Metals, TCL VOCs, SVOCs, PCBs and Pesticides. Sample results are presented below, and the reported laboratory results are presented in Tables 35 through 40.

5.10.1 AOC-9; Surface and Near-Surface Soils Analytical Results

Results from the surface and near-surface soil samples (collected from 0 to 6 inches and 6 to 24 inches below grade) identified detections of PFAS at both soil boring locations. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations at each boring for PFAS. The PFAS detections are summarized below:

- MW102 sampling results detected ten PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.42 ppb. PFOS was detected at 1.29 ppb. The near-surface soil sample detected six PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.13 ppb and PFOS at 0.21 ppb.

- MW103 sampling results detected nine PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.85 ppb and PFOS at 0.96 ppb. The near-surface soil sample detected nine PFAS compounds, including estimated detections ("J" qualified) of PFOA at 0.57 ppb and PFOS at 0.55 ppb.

1,4-Dioxane was not detected in any surface and near-surface soil samples collected within AOC-9. Additionally, Metals, VOCs, SVOCs, PCBs, and Pesticides were not detected in the surface soil samples in exceedance of their respective NYSDEC concentrations for Unrestricted SCO.

5.10.2 AOC-9; Subsurface Soils Analytical Results

Results from the subsurface soil samples identified detections of PFAS at the MW103 soil boring locations. Currently there are no NYSDEC regulatory standards or guidance values for PFAS in soils. Figure 4 depicts the soil concentrations at each boring for PFAS. The PFAS detections are summarized below:

- MW102 sampling results were ND for PFAS.
- MW103 sampling results detected one PFAS compound. PFOA and PFOS were ND.

1,4-Dioxane was not detected in any subsurface soil sample collected within AOC-9. Additionally, Metals, VOCs, SVOCs, PCBs, and Pesticides were not detected in the surface soil samples in exceedance of their respective NYSDEC concentrations for Unrestricted SCO.

5.10.3 AOC-9; Groundwater Analytical Results

Results from the groundwater samples identified detections of PFAS at the sampled location. However, PFOA and PFOS were not detected in exceedance of the former USEPA health advisory level of 70 ppt in drinking water. Figure 6 depicts the groundwater concentrations at each well for PFAS. The PFAS detections are summarized below:

- MW102 sampling results detected seven PFAS compounds, including estimated detections ("J" qualified) of PFOA at 1.26 ppt and PFOS at 1.17 ppt.
- MW103 sampling results detected eight PFAS compounds, including estimated detections ("J" qualified) of PFOS at 1.32 ppt. PFOA was detected at 2.1 ppt.

1,4-Dioxane was not detected in any groundwater sample collected within AOC-9.

At MW102, VOCs, PCBs and Pesticides were not detected in the groundwater sample. The following SVOCs were detected at MW102 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for groundwater: Benzo(a)anthracene at 0.04 ppb, Benzo(a)pyrene at 0.03 ppb, Benzo(b)fluoranthene at 0.03 ppb, Benzo(k)fluoranthene at 0.03 ppb, Chrysene at 0.02 ppb, and Indeno(1,2,3-cd)pyrene at 0.03 ppb. Additionally, the following Metals were detected at MW102 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for groundwater: Total Iron at 2,000 ppb, Total Magnesium at 66,800 ppb, and Total Manganese at 9,436 ppb. No other SVOCs or Metals were detected at MW102 in exceedance of the NYSDEC TOGS 1.1.1 for groundwater. Figure 7 depicts the groundwater concentrations at each well for non-PFAS constituents.

At MW103, VOCs, PCBs and Pesticides were not detected in the groundwater sample. The following SVOCs were detected at MW103 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for groundwater: Benzo(a)anthracene at 0.02 ppb, Benzo(a)pyrene at 0.02 ppb, Benzo(b)fluoranthene at 0.06 ppb, Benzo(k)fluoranthene at 0.02 ppb, and Indeno(1,2,3-cd)pyrene at 0.05 ppb. Additionally, the following Metals were detected at MW103 in exceedance of the respective NYSDEC TOGS 1.1.1 criteria for groundwater:

Total Iron at 7,800 ppb, Total Manganese at 3,741 ppb, and Total Sodium at 68,500 ppb. No other SVOCs or Metals were detected at MW103 exceeding the NYSDEC TOGS 1.1.1 standards for groundwater.

5.11 Off-Site Locations – Analytical Results

Forty-two (42) off-Site, drinking water well samples were collected from the area surrounding the Site. The locations of the drinking water wells are shown on Figure 12. The drinking water samples were analyzed for PFAS and 1,4-Dioxane. Sample results are discussed below, and the reported laboratory results are presented in Table 41.

Six (6) surface water samples were collected from along the Wappinger Creek and a tributary of the Wappinger Creek situated immediately adjacent to and downgradient of the Site. Approximate sample locations and results are shown on Figure 8.

Additionally, New York State Department of Health (NYSDOH) and the Department of Environmental Conservation (NYSDEC) collected drinking water samples from the area surrounding the site and continues to collect water samples from homes where PFOA and PFOS exceed the NYS MCL of 10 ppt. NYSDEC sampling data is not included in this report but can be requested from the NYSDEC and will also be available in the document repository.

5.11.1 Analytical Results – Off-Site Locations; Drinking Water

Analytical test results were compared to the former USEPA health advisory level (HAL) of 70 ppt and the New York State (NYS) promulgated Maximum Contaminant Level (MCL) of 10 ppt each for PFOA and PFOS. There are currently no NYSDEC regulatory standards for 1,4-Dioxane in water. NYSDEC has proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health. Figure 12 depicts the drinking water concentrations of PFOA, PFOS, and 1,4-Dioxane (off-Site locations only for 1,4-Dioxane) at each well.

Of the forty-two (42) offsite drinking water wells that were sampled, three (3) locations, Map IDs: A14, A15 and Location A (also designated as A1), had results that were reported above the former USEPA HAL of 70ppt. Location A is situated immediately adjacent to and southeast of the Site while Map IDs A14 & A15 are situated east of Route 376 and north of Hackensack Heights Road.

Analytical test results for Map IDs A4, A18, A21, A34, Location E, and Location D had reported concentrations of either PFOA or PFOS above the NYS MCL of 10ppt but below the former USEPA HAL of 70ppt. Map ID A4 is situated immediately adjacent to the southeastern site boundary. A18, A21, A34, Location E, and Location D are located east and upgradient of the subject Site.

Analytical test results for Map ID Location A had a reported concentration of 1,4-Dioxane of 0.216 ppb. Analytical test results for Map ID A34 had a reported concentration of 1,4-Dioxane of 0.214 ppb. These results are below the NYSDEC proposed guidance value of 0.35 ppb for 1,4-Dioxane in raw water sources. 1,4-Dioxane was not detected in other off-Site drinking water samples.

Analytical test results for all the wells sampled south of New Hackensack Road and west of Route 376 had reported concentrations of PFOA and PFOS below the former USEPA HAL and NYSDEC MCL.

5.11.2 Analytical Results – Off-Site Locations; Surface Water

Six (6) off-Site surface water samples were collected as follows:

- One (1) background sample, designated B-1, was collected from a location situated approximately 800 feet upstream of the Site from the Wappingers Creek;
- Sample SW-1 was collected from the Wappingers Creek near the northern perimeter of the Site and upstream of the landfill/balefill;
- Sample SW-2 was collected from the Wappingers Creek downstream of the landfill/balefill;
- Sample SW-3 was collected from the Wappingers Creek just south of Jackson Road;
- Sample SW-4 was collected from an unnamed tributary of the Wappingers Creek that trends northeast/southwest along the Site's eastern perimeter before making an approximate ninety degree turn to trend northwest/southeast along the Site's southern perimeter before draining into the Wappinger's Creek; and
- Sample SW-5 was collected approximately 400 feet downstream of the Site.

The analytical test results indicate that background concentrations of PFOA were 0.761 ppt and PFOS was 0.92 ppt (PFOA/PFOS Total 1.68 ppt). In the Wappingers Creek, the highest reported total concentration of PFOA/PFOS (3.34 ng/L) was from the surface

water sample collected west of the landfill/balefill area. The highest concentrations of PFOA/PFOS were detected at the unnamed tributary (total 21.5 ng/L) of the Wappingers Creek located immediately south and downgradient of the Site. The sample collected downgradient from the tributary and within the Wappingers Creek had concentrations of PFOA reported at 1.08 ng/L and PFOS reported at 1.78 ng/L.

6.0 DISCUSSION OF FINDINGS

This SC investigation was conducted to determine whether regulated substances are present at the Site at levels above NYSDEC unrestricted use SCGs values, groundwater standards, or other applicable SCGs for unrestricted use of the Site (DER-10, Section 3.2.1), pursuant to the Order and "P" Site designation. Nine AOCs were identified within the Site prior to the development of the SC Work Plan. The SC Investigation focused on evaluating each of these AOCs individually, as well as several off-Site locations to characterize the Site relative to surface and near-surface soils, subsurface soils, groundwater, surface water, sediment, and drinking water. Based on the results of the investigations, several regulated substances were identified above applicable SCGs:

- AOC-1:
  - PFOA and PFOS in groundwater
- AOC-2:
  - PFOA and PFOS in groundwater
- AOC-3
  - PFOA and PFOS in groundwater
- AOC-4
  - Total Iron and Total Manganese in groundwater
- AOC-5
  - SVOCs, Total Antimony, Total Iron, Total Manganese, Total Sodium in surface water
  - Acetone in sediment
- AOC-6
  - PFOA and PFOS in groundwater
  - PFOA, PFOS, and Total Sodium in drinking water
- AOC-7
  - Total Copper, Total Lead, and Total Zinc in subsurface soil
  - PFOS and Total Sodium in groundwater

    - Total Iron, Total Magnesium and Total Sodium in drinking water
- AOC-8
    - PFOS in surface water
- AOC-9
    - SVOCs, Total Iron, Total Magnesium, Total Manganese and Total Sodium in groundwater
- OFF-SITE LOCATIONS:
    - PFOA and PFOS in surface water
    - PFOA and PFOS in drinking water

Additional PFAS compounds were detected in surface soils, subsurface soils, groundwater, surface water, sediment, and drinking water at concentrations above laboratory reporting limits at each AOC in which those respective media were sampled.

The following sections provide a summary and discussion of the SC investigation.

6.1 VOCs, SVOCs, PCBs, Pesticides and Metals in Soils and Sediment

The were no exceedances of NYSDEC Unrestricted Use SCOs for SVOCs, PCBs or Pesticides within the surface soils, subsurface soils or sediments analyzed.

Total Copper (66.8 ppm), Total Lead (70 ppm), and Total Zinc (138 ppm) exceeded their respective NYSDEC Unrestricted SCOs in subsurface soils at MW100. The location of this sample adjacent to the maintenance building septic tank could be indicative of Site activity related impacts. However, the detected metals were not found to have impacted shallow groundwater at this location.

There was a detection of acetone (0.058 ppb) at Outfall-001. This detection exceeds the NYSDEC Unrestricted Use SCO for acetone of 0.05 ppb. However, acetone is known to be a common laboratory artifact and is not considered to be associated with Site operations.

6.2 VOCs, SVOCs, PCBs, Pesticides and Metals in Water

The were no exceedances of NYSDEC Unrestricted Use SCOs for VOCs, PCBs or Pesticides within the surface soils, subsurface soils or sediments analyzed.

Total Iron (7,690 ppb) and Total Manganese (1,657 ppb) exceeded the respective NYSDEC TOGS 1.1.1 criteria in groundwater at MW101, AOC-4. These metals are naturally occurring, but the elevated concentrations may be artifacts of the historic oil spill remedial activities that occurred at this location.

The following detections of metals exceeded their respective NYSDEC TOGS 1.1.1 criteria in water: Total Sodium (157,000 ppb) in the AAG Potable well (AOC-6); Total Sodium (135,000 ppb) in MW100 (AOC-7); Total Iron (434 ppb), Total Magnesium (42,700 ppb) and Total Sodium (86,900 ppb) in the Maintenance Building potable well (AOC-7); Total Iron (2,000 ppb), Total Magnesium (66,800 ppb) and Total Manganese (9,436 ppb) in MW102 (AOC-9); Total Iron (7,800 ppb), Total Manganese (3,741 ppb) and Total Sodium (68,500 ppb) in MW103 (AOC-9). The following SVOCs were also detected in groundwater at AOC-9 in exceedance of their respective TOGS 1.1.1 criteria in surface water, but at very low concentrations, less than the laboratory reporting limit ("J" qualified): Benzo(a)anthracene at 0.04 ppb, Benzo(a)pyrene at 0.03 ppb, Benzo(b)fluoranthene at 0.03 ppb, Benzo(k)fluoranthene at 0.03 ppb, Chrysene at 0.02 ppb, and Indeno(1,2,3-cd)pyrene at 0.03 ppb in MW102; Benzo(a)anthracene at 0.02 ppb, Benzo(a)pyrene at 0.02 ppb, Benzo(b)fluoranthene at 0.06 ppb, Benzo(k)fluoranthene at 0.02 ppb, and Indeno(1,2,3-cd)pyrene at 0.05 ppb in MW103. The detected metals are all naturally occurring and not considered to be related to Site activities. Sodium is commonly associated with the use of de-icing agents, whether used on-Site or on adjacent roadways.

Total Antimony (16 ppb), Total Iron (588 ppb), Total Manganese (712 ppb), and Total Sodium (81,300 ppb) exceededTOGS 1.1.1 criteria in surface water at Outfall-001, AOC-5. The following SVOCs were also detected at this location in exceedance of TOGS in surface water, but at very low concentrations, less than the laboratory reporting limit ("J" qualified): Benzo(a)anthracene at 0.04 ppb, Benzo(a)pyrene at 0.02 ppb, Benzo(b)fluoranthene at 0.04 ppb, Benzo(k)fluoranthene at 0.02 ppb, and Chrysene at 0.04 ppb. The presence of these metals and SVOCs at the detected concentrations are most likely a result of the proximity and susceptibility of road run-off collection at Outfall-001 from the immediately adjacent New Hackensack Road.

6.3 PFAS and 1,4-Dioxane

PFAS were detected in surface soil, subsurface soil, groundwater, surface water, sediment at every sampling location examined during the SC Investigation, excluding the sediment sample from Outfall-007, and the subsurface soil sample collected at MW102, which were non-detect for PFAS. Figure 12 shows concentrations of PFAS detected in the drinking water samples.

1,4-Dioxane was detected in groundwater at AOC-2 and AOC-3, and at low concentrations in drinking water at AOC-7 and off-Site sampling locations at A34 and Location A/A1. There are currently no NYSDEC regulatory standards for 1,4-Dioxane in water. NYSDEC has proposed guidance values of 0.35 ppb for 1,4-Dioxane in raw water sources for the protection of human health. 1,4-Dioxane was not detected in any soil or sediment sample.

6.3.1 PFAS in On-Site Groundwater and Drinking Water

PFAS were detected widely across the Site in groundwater and potable drinking water wells. Exceedances of the former USEPA health advisory level of 70 ppt[2] for PFOS and/or PFOA were detected in the following sampling locations: MW104 (PFOA 122 ppt, PFOS 1,720 ppt) (downgradient AFFF testing area); MW-2S (PFOA 22.5 ppt, PFOS 932 ppt) and MW-3S (PFOA 35.8 ppt, PFOS 21.4 ppt) (downgradient of the Former Balefill Landfill); MW-20 (PFOA 76.6, PFOS 79.2 ppt) (downgradient of the Former Dutchess County Landfill); A-21G (PFOA 28.5 ppt, PFOS 1,420 ppt), A-21R (PFOA 371 ppt, PFOS 3,010 ppt), A-21S (PFOA 184 ppt, PFOS 2,200 ppt), ME-18 (PFOA 77.5 ppt, PFOS 2,030 ppt), MW-4 (PFOA 28.5 ppt, PFOS 1,420 ppt), and MW-6 (PFOA 47.7 ppt, PFOS 1,320 ppt) (AAG Hangars); and MW100 (PFOA 47.1 ppt, PFOS 595 ppt) (ARFF / Maintenance Building area).

PFAS in water was detected in MW-3S (PFOA 35.8 ppt, PFOS 21.4 ppt) at the former Balefill Landfill. Detections in MW-2S (PFOA 22.5, PFOS 932 ppt), which is also at the Balefill were also identified. Other monitoring wells on the Site (i.e. MW102 (PFOA 1.26 ppt, PFOS 1.17 ppt)), did not display exceedances of applicable criteria for PFOS or PFOA, or otherwise display concentrations of PFAS that could be considered elevated with respect to most sampling locations on the Site. Upgradient to the Balefill Landfill,

[2] The former USEPA health advisory level of 70 ppt for drinking water was used for comparison purposes.

sampling location MW104 (PFOA 122 ppt, PFOS 1,720 ppt) within the AFFF testing area displayed elevated concentrations of PFAS. Additionally, upgradient location MW103 (PFOA 2.1 ppt, PFOS 1.32 ppt) displayed some of the lowest PFAS detections of water sampling locations across the Site. In addition, downgradient monitoring wells at the Former Dutchess County Landfill exhibited concentrations and exceedances of PFAS that were relatively low with respect to the Site as a whole.

Elevated concentrations of PFAS in groundwater, including several exceedances of the former USEPA health advisory level of 70 ppt for PFOA and PFOS were found in pre-existing wells with the AAG Hangars area. Additionally, PFOA (233 ppt) and PFOS (1,090 ppt) were also detected in excess of the USEPA criteria in the AAG potable drinking water well. Though substantial investigative work and remedial efforts have occurred to address historical SVOC contamination in this area, remedies selected and put into effect following prior environmental investigations in this area were not designed to target and treat PFAS contamination.

The Firefighting AFFF Testing Area and ARFF / Maintenance Building areas both exhibited elevated concentrations of PFAS in groundwater and surface water. These two AOCs are each associated with AFFF application, storage, or ARFF operation in some manner. As such, AFFF and ARFF storage and operation may have contributed to localized PFAS contamination. Associated stormwater runoff from historic AFFF applications and ARFF also may have contributed to the elevated PFAS detections within these areas.

6.3.2 PFAS in Surface Water, Soils and Sediment

PFAS were detected in the surface water, surface soil, subsurface soil and sediment samples at each AOC in which these media were sampled.

PFAS concentrations in surface water samples were detected in every sample. Six (6) surface water samples were collected from the Wappingers Creek: B-1 (PFOA 0.761 ppt, PFOS 0.92 ppt), SW-1 (PFOA 0.765 ppt, PFOS 0.964 ppt), SW-2 (PFOA 0.808 ppt, PFOS 2.53 ppt), SW-3 (PFOA 0.819 ppt, PFOS 1.36 ppt), SW-4 (PFOA 4.33 ppt, PFOS 17.2 ppt) and SW-5 (PFOA 1.09 ppt, PFOS 1.78 ppt). Surface water samples were collected from seven (7) stormwater outfalls on-Site: Outfall-001 (PFOA 21.4 ppt, PFOS 140 ppt), Outfall-002 (PFOA 2.39 ppt, PFOS 13.4 ppt), Outfall-003 (PFOA 8.3 ppt, PFOS 339 ppt), Outfall-

004 (PFOA 2.75 ppt, PFOS 12.7 ppt), Outfall-005 (PFOA 14.9 ppt, PFOS 9.24 ppt), Outfall-006 (PFOA 6.16 ppt, PFOS 2.68 ppt) and Outfall-007 (PFOA 10.5 ppt, PFOS 4.23 ppt). Two (2) surface water samples were collected from the fire pond: FIREPOND 01 (PFOA 26.1 ppt, PFOS 214 ppt) and FIREPOND 02 (PFOA 23.8 ppt, PFOS 195 ppt).

Relatively low concentrations of PFAS were detected in sediment samples found on-Site. Seven (7) sediment samples were collected from the stormwater outfalls on-Site: Outfall-001 (PFOA ND, PFOS 0.356 ppb), Outfall-002 (PFOA 0.109 ppb, PFOS 1.09 ppb), Outfall-003 (PFOA 0.085 ppb, PFOS 7.57 ppb), Outfall-004 (PFOA 0.462 ppb, PFOS 7.8 ppb), Outfall-005 (PFOA 0.637 ppb, PFOS 1.84 ppb), Outfall-006 (PFOA 0.137 ppb, PFOS 0.36 ppb), Outfall-007 (PFOA ND, PFOS ND), FIREPOND-01 (PFOA 26.1 ppb, PFOS 214 ppb) and FIREPOND-02 (PFOA 23.8 ppb, PFOS 195 ppb).

Soil samples were collected from MW-100, MW-101, MW-102, MW-103, MW-104 and MW-105. In MW-100, 0.438 ppb of PFOA and 369 ppb of PFAS one (1) ft below ground surface (bgs) and 0.287 ppb of PFOA and 36.8 ppb of PFOS six (6) ft bgs were detected. In MW-101, 0.132 ppb of PFOA and 2.27 ppb of PFOS half (0.5) a foot bgs, 0.451 ppb of PFOA and 11.3 ppb of PFOS two (2) ft bgs, and 0.057 ppb of PFOA and 1.12 ppb of PFOS eight (8) ft bgs were detected. In MW-102, 0.415 ppb of PFOA and 1.29 ppb of PFOS half (0.5) a foot bgs, 0.127 ppb of PFOA and 0.213 ppb of PFOS two (2) ft bgs, and ND concentrations of PFOA and PFOS four and a half (4.5) ft bgs were detected. In MW-103, 0.85 ppb of PFOA and 0.958 ppb of PFOS half (0.5) a foot bgs, ND concentrations of PFOA and PFOS two (2) ft bgs, and 0.55 ppb of PFOA and 0.57 ppb of PFOS ten (10) ft bgs were detected. In MW-104, 2.42 ppb of PFOA and 129 ppb of PFOS half (0.5) a foot bgs, 0.688 ppb of PFOA and 109 ppb of PFOS two (2) ft bgs, and 0.142 ppb of PFOA and 43.8 ppb of PFOS nine and a half (9.5) ft bgs were detected. In MW-105, 1.1 ppb of PFOA and 89.5 ppb of PFOS half (0.5) a foot bgs, 0.648 ppb of PFOA and 113 ppb of PFOS two (2) ft bgs, and 0.164 ppb of PFOA and 56.9 ppb of PFOS four (4) ft bgs were detected.

6.3.3 Additional Discussions of PFAS Results

PFAS detections were exhibited in samples collected from the three off-Site drinking water wells above the former HAL of 70 ppt. Each of these sampling locations exists northeast and upgradient of the Site hydraulically.

The County installed Point-of-Entry Treatment Systems (POETS) in the three (3) off-Site drinking water well locations where sampling results exceeded the HAL of 70ppt. It has been reported to C.T. Male that additional POETS were installed by others at locations A4, Location E/A18, A21, Location D, A34, A40, and A43 where sampling results exceeded the NYSDEC MCL of 10 ppt for PFOA and/or PFOS, but did not exceed the HAL of 70 ppt. The County was not responsible for the installation or monitoring of these additional POETS installed by others, and does not maintain records for the installation or monitoring of these systems. Results from initial sampling of the potable wells at these locations can be found in Appendix H.

PFAS are widely used in consumer products. According to ITRC (2017) the following commercial and consumer products have been found to contain PFAS:

- paper and packaging
- clothing and carpets
- outdoor textiles and sporting equipment
- ski and snowboard waxes
- non-stick cookware
- cleaning agents and fabric softeners
- polishes and waxes, and latex paints
- pesticides and herbicides
- hydraulic fluids
- windshield wipers
- paints, varnishes, dyes, and inks
- adhesives
- medical products
- personal care products (for example, shampoo, hair conditioners, sunscreen, cosmetics, toothpaste, dental floss)

As described within the ITRC Fact Sheet on Environmental Fate and Transport (March 2018), landfills are demonstrated sources of PFAS due to the prevalence of PFAS usage in materials and the wide range of materials deposited within landfills. It is further noted within the Fact Sheet that landfills containing PFAS sources are expected to release PFAS at a "slow but relatively steady rate for decades following initial placement" of the waste.

As described within the ITRC Fact Sheet on Environmental Fate and Transport (March 2018), PFAS could be concentrated in sewage sludge through the treatment process and, depending on waste management and disposal practices, could contaminate groundwater, surface water, or both.

A national study for perfluoroalkyl substances in soils conducted in 2016[3] determined that PFAS are ubiquitous in background soils. The study had a range of detected PFAS concentrations in North America of 145-6,080 ppt within the soil samples collected.

In addition, a background study of shallow soil samples was conducted statewide in Vermont[4] and the report was issued in May 2019. This study found that PFAS were widespread in shallow Vermont soils. In particular, PFOS detections ranged from 0.106 to 9.7 ppb and PFOA detections ranged from 0.052 to 4.9 ppb.

7.0 REFERENCES

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FIGURES

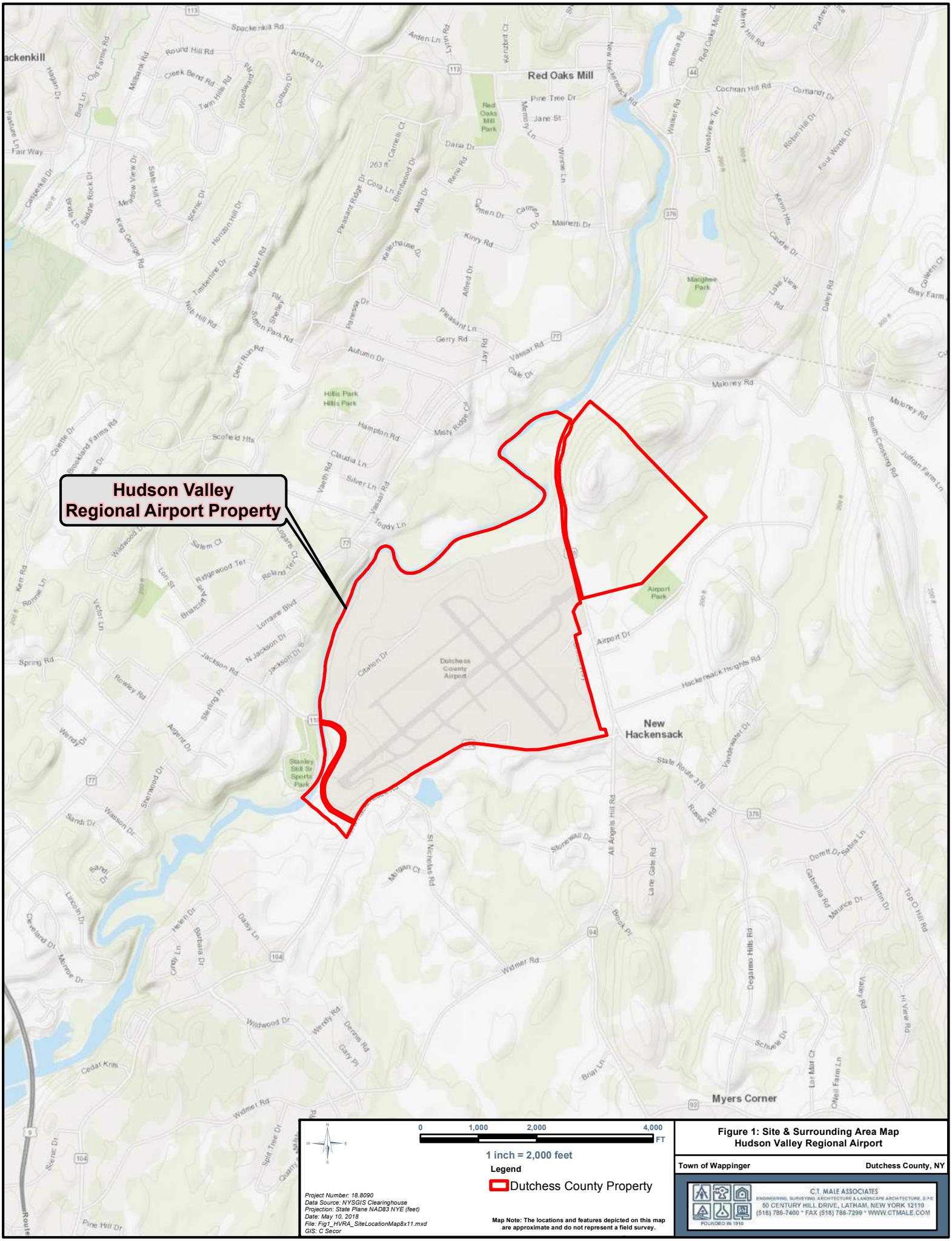

Figure 1: Site & Surrounding Area Map
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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50 CENTURY HILL DRIVE, LATHAM, NEW YORK 12110
(518) 786-7400 * FAX (518) 786-7299 * WWW.CTMALE.COM
FOUNDED IN 1910

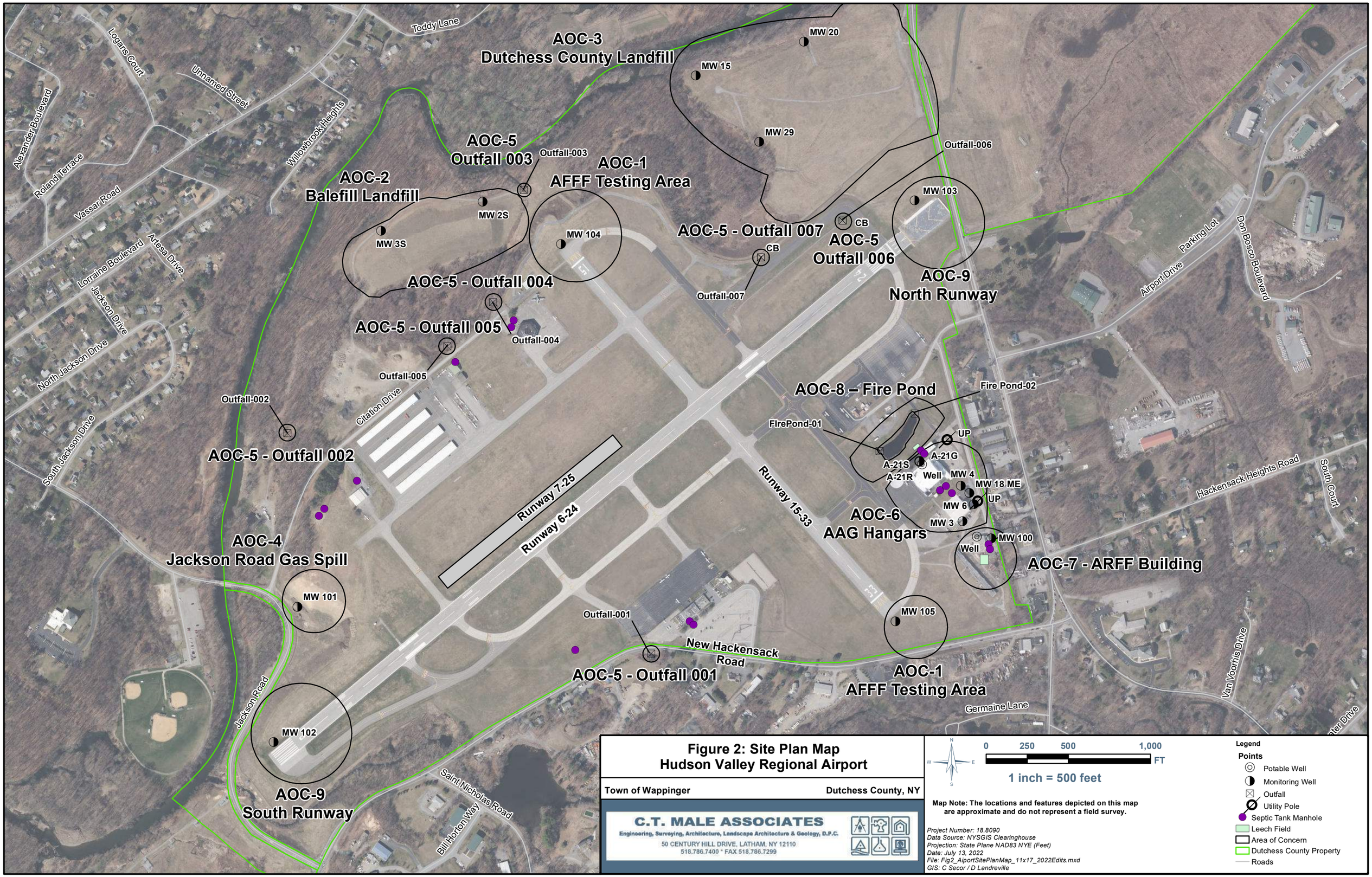

Figure 2: Site Plan Map
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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N / W / E / S

0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: Fig2_AiportSitePlanMap_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Field
- Area of Concern
- Dutchess County Property
- Roads

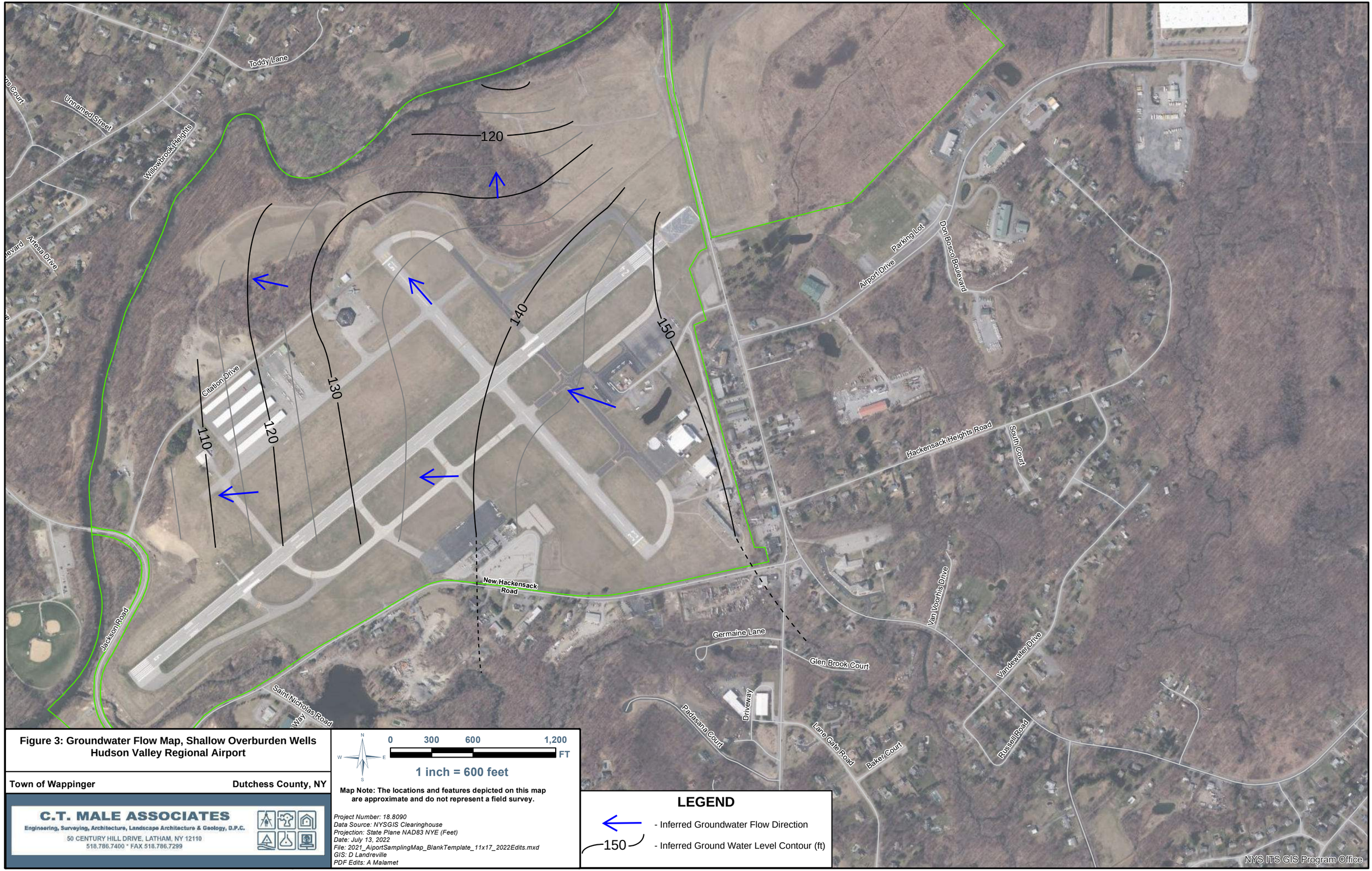

Figure 3: Groundwater Flow Map, Shallow Overburden Wells
Hudson Valley Regional Airport

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N W E S

0 300 600 1,200 FT

1 inch = 600 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: 2021_AiportSamplingMap_BlankTemplate_11x17_2022Edits.mxd
GIS: D Landreville
PDF Edits: A Malamet

LEGEND

- Inferred Groundwater Flow Direction

150 - Inferred Ground Water Level Contour (ft)

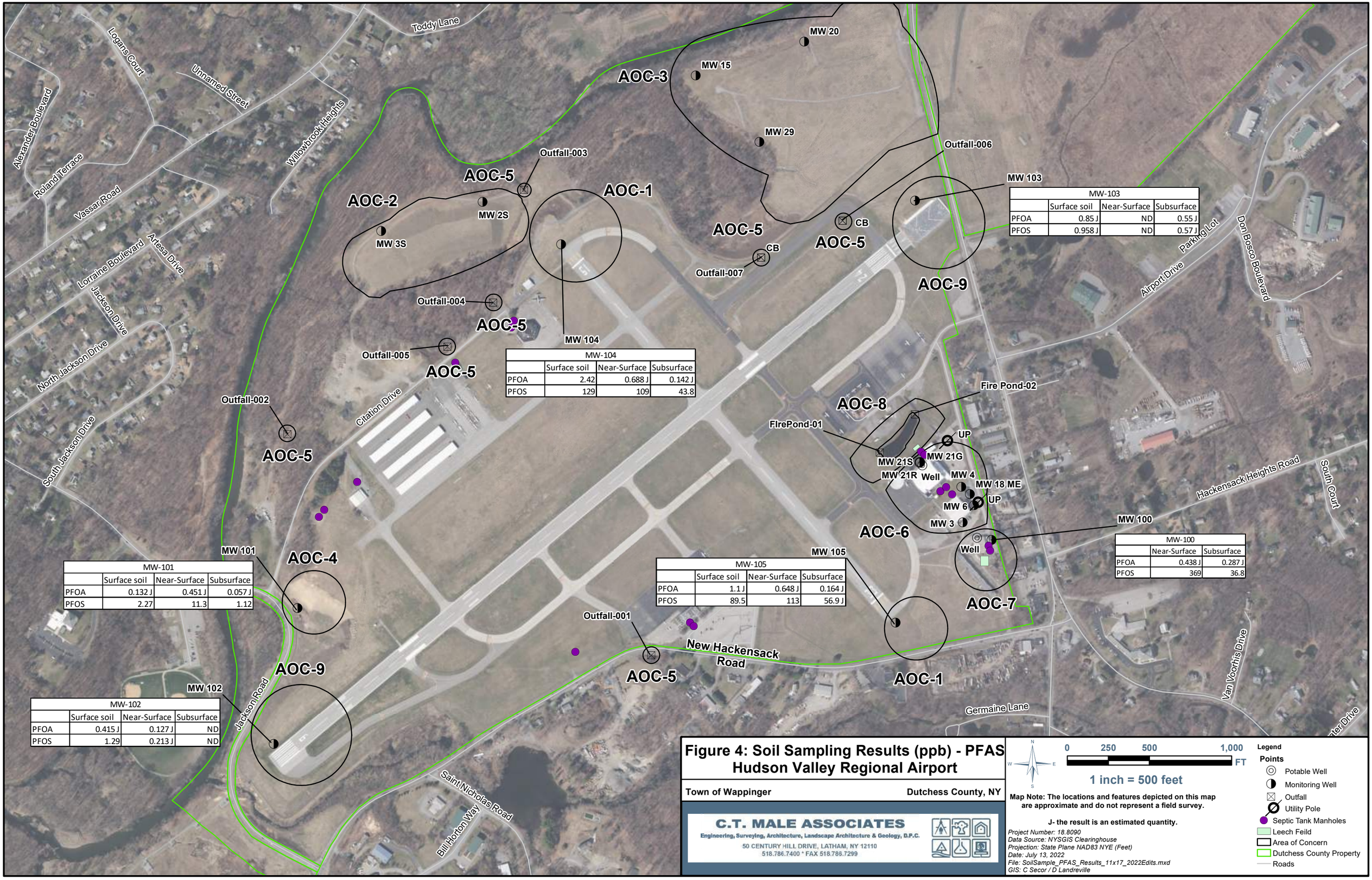

Figure 4: Soil Sampling Results (ppb) - PFAS
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0 250 500 1,000 FT

1 inch = 500 feet

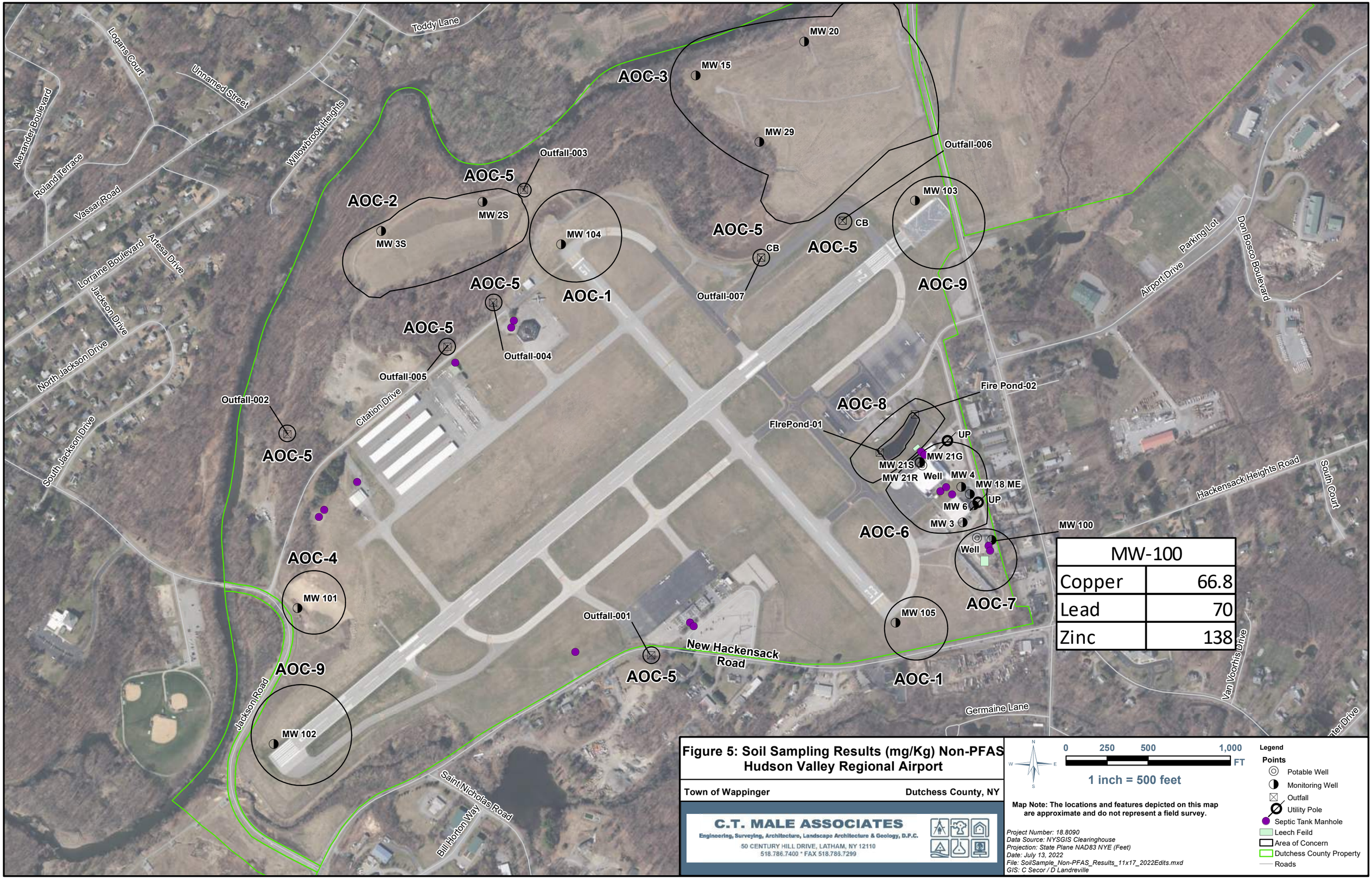
Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

J- the result is an estimated quantity.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: SoilSample_PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manholes
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads



MW-100	
Copper	66.8
Lead	70
Zinc	138

Figure 5: Soil Sampling Results (mg/Kg) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: SoilSample_Non-PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

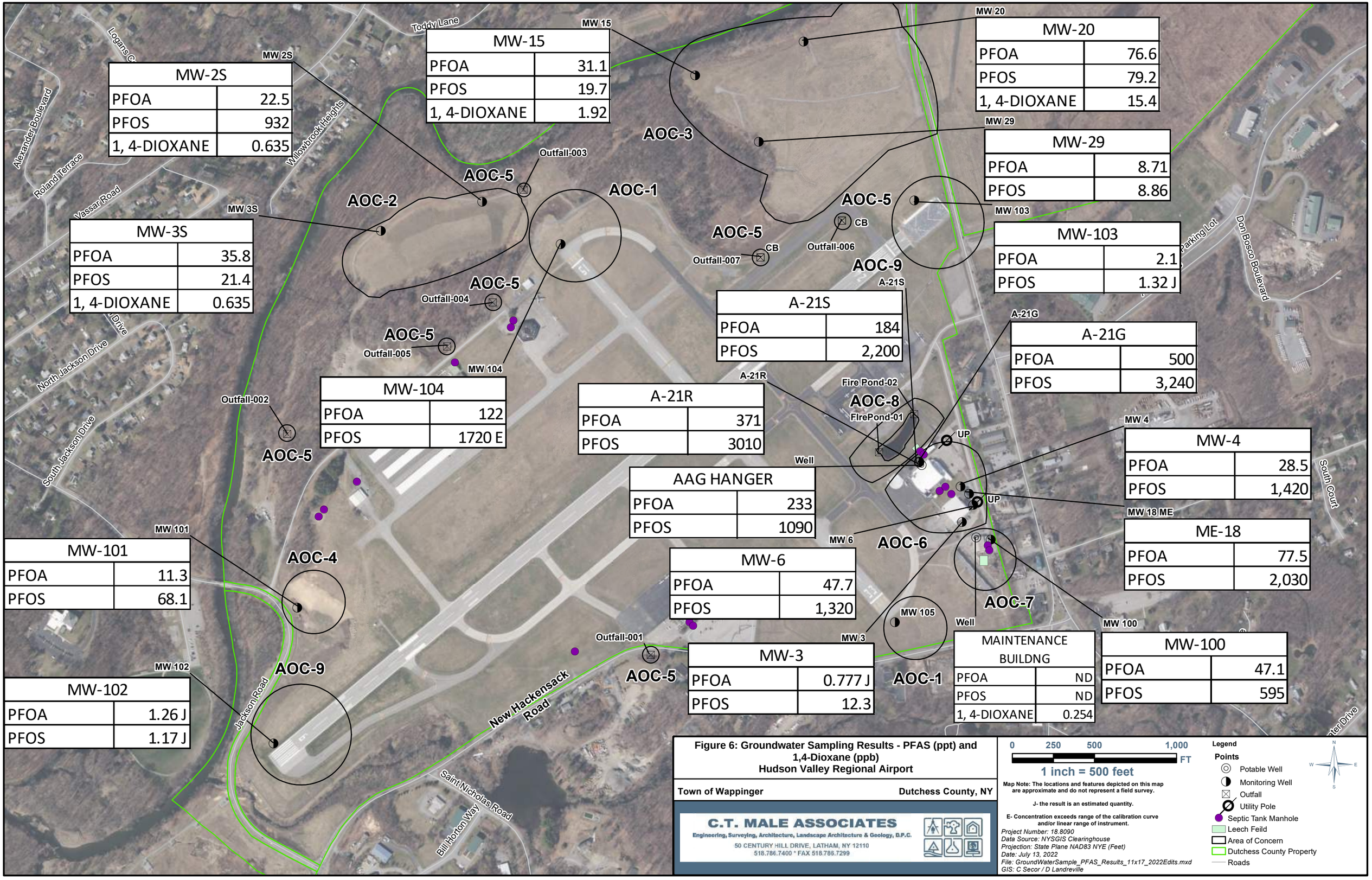

Figure 6: Groundwater Sampling Results - PFAS (ppt) and 1,4-Dioxane (ppb)
Hudson Valley Regional Airport

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0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

J- the result is an estimated quantity.

E- Concentration exceeds range of the calibration curve and/or linear range of instrument.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: GroundWaterSample_PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

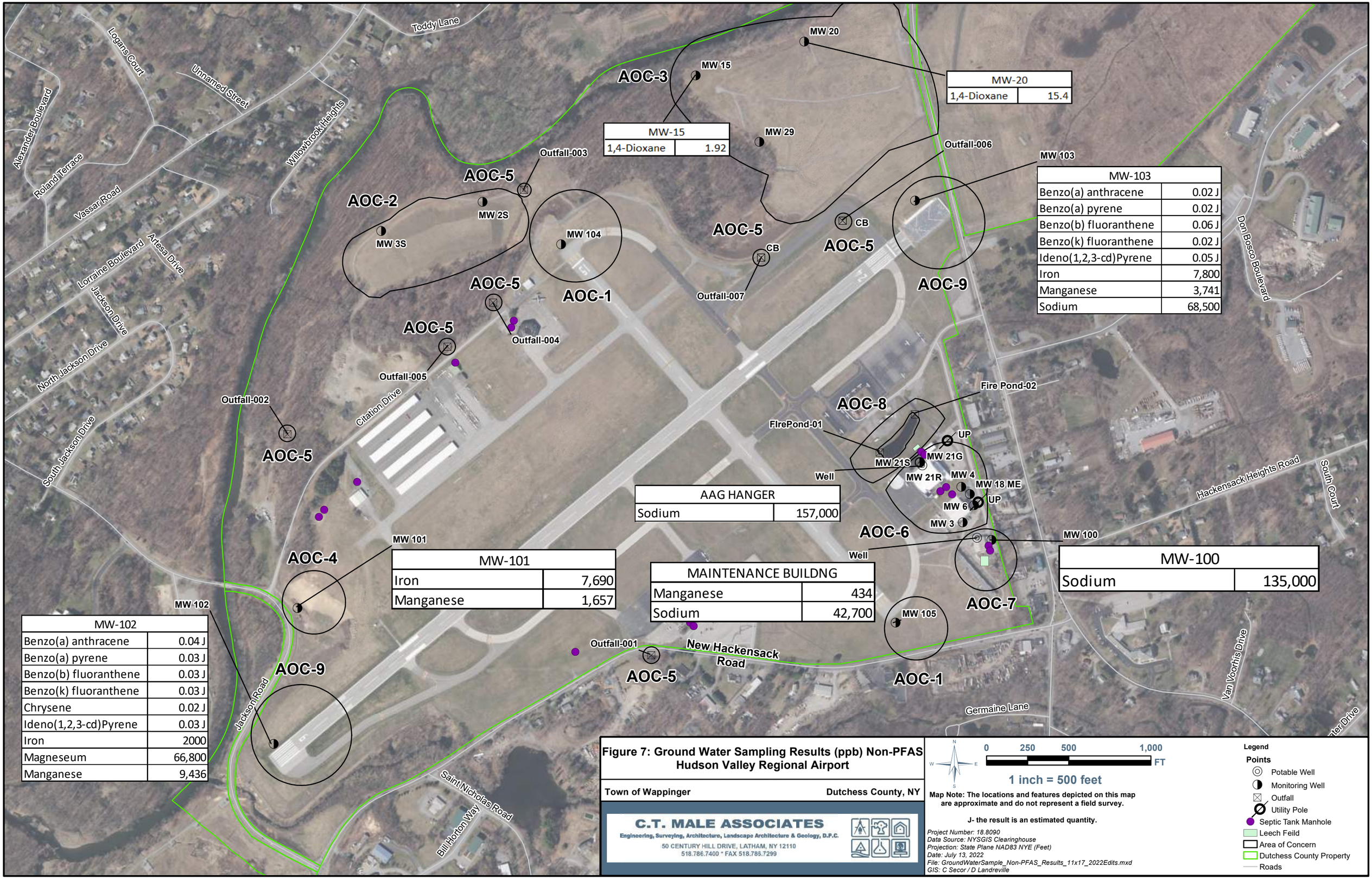

Figure 7: Ground Water Sampling Results (ppb) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

J- the result is an estimated quantity.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: GroundWaterSample_Non-PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

SW-1	
PFOA	0.765
PFOS	0.964
PFOA/PFOS, Total	1.73

OUTFALL 003	
PFOA	8.3
PFOS	339

SW-2	
PFOA	0.808
PFOS	2.53
PFOA/PFOS, Total	3.34

OUTFALL 002	
PFOA	2.39
PFOS	13.4

OUTFALL 005	
PFOA	14.9
PFOS	9.24

OUTFALL 004	
PFOA	2.75
PFOS	12.7

OUTFALL 007	
PFOA	10.5
PFOS	4.23

OUTFALL 006	
PFOA	6.16
PFOS	2.68

FIREPOND 01	
PFOA	26.1
PFOS	214

FIREPOND 02	
PFOA	23.8
PFOS	195

OUTFALL 001	
PFOA	21.4
PFOS	140

SW-3	
PFOA	0.819
PFOS	1.36
PFOA/PFOS, Total	2.18

SW-5	
PFOA	1.09
PFOS	1.78
PFOA/PFOS, Total	2.87

SW-4	
PFOA	4.33
PFOS	17.2
PFOA/PFOS, Total	**21.5**

B-1 Collected Offsite

B-1	
PFOA	0.761
PFOS	0.92
PFOA/PFOS, Total	1.68

NYS ITS GIS Program Office

Figure 8: Surface Water Sampling Results (ppt) - PFAS
Hudson Valley Regional Airport

Town of Wappinger **Dutchess County, NY**

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0 250 500 1,000 FT

1 inch = 500 feet

Map Notes: 1.) The locations and features depicted on this map are approximate and do not represent a field survey. 2.) Concentrations shown in parts per trillion (ppt)

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: Figure8_SurfaceWaterSample_PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend
Points
Potable Well
Monitoring Well
Outfall
Utility Pole
Septic Tank Manhole
Surface Water Sample Approximate Location
Leech Feild
Area of Concern
Dutchess County Property
Roads

OUTFALL-001	
Benzo(a) anthracene	0.04 J
Benzo(a) pyrene	0.02 J
Benzo(b) fluoranthene	0.04 J
Benzo(k) fluoranthene	0.02 J
Chrysene	0.04 J
Antimony	16 J
Iron	588
Manganese	712
Sodium	81,300

Figure 9: Surface Water Sampling Results (ppb) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger — **Dutchess County, NY**

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0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

J- the results are an estimated quantity.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: SurfaceWaterSample_Non-PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

OUTFALL 003	
PFOA	0.085 J
PFOS	7.57

OUTFALL 006	
PFOA	0.137 J
PFOS	0.36 J

OUTFALL 002	
PFOA	0.109 J
PFOS	1.09 J

OUTFALL 005	
PFOA	0.637 J
PFOS	1.84

OUTFALL 004	
PFOA	0.462 J
PFOS	7.8

OUTFALL 007	
PFOA	ND
PFOS	ND

FIREPOND 02	
PFOA	0.212 J
PFOS	7.83

FIREPOND 01	
PFOA	0.213 J
PFOS	11.6

OUTFALL 001	
PFOA	ND
PFOS	0.356 J

Figure 10: Sediment Sampling Results (ppb) - PFAS
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

J-The result is an estimated quantity.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: Sed\Sample_PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

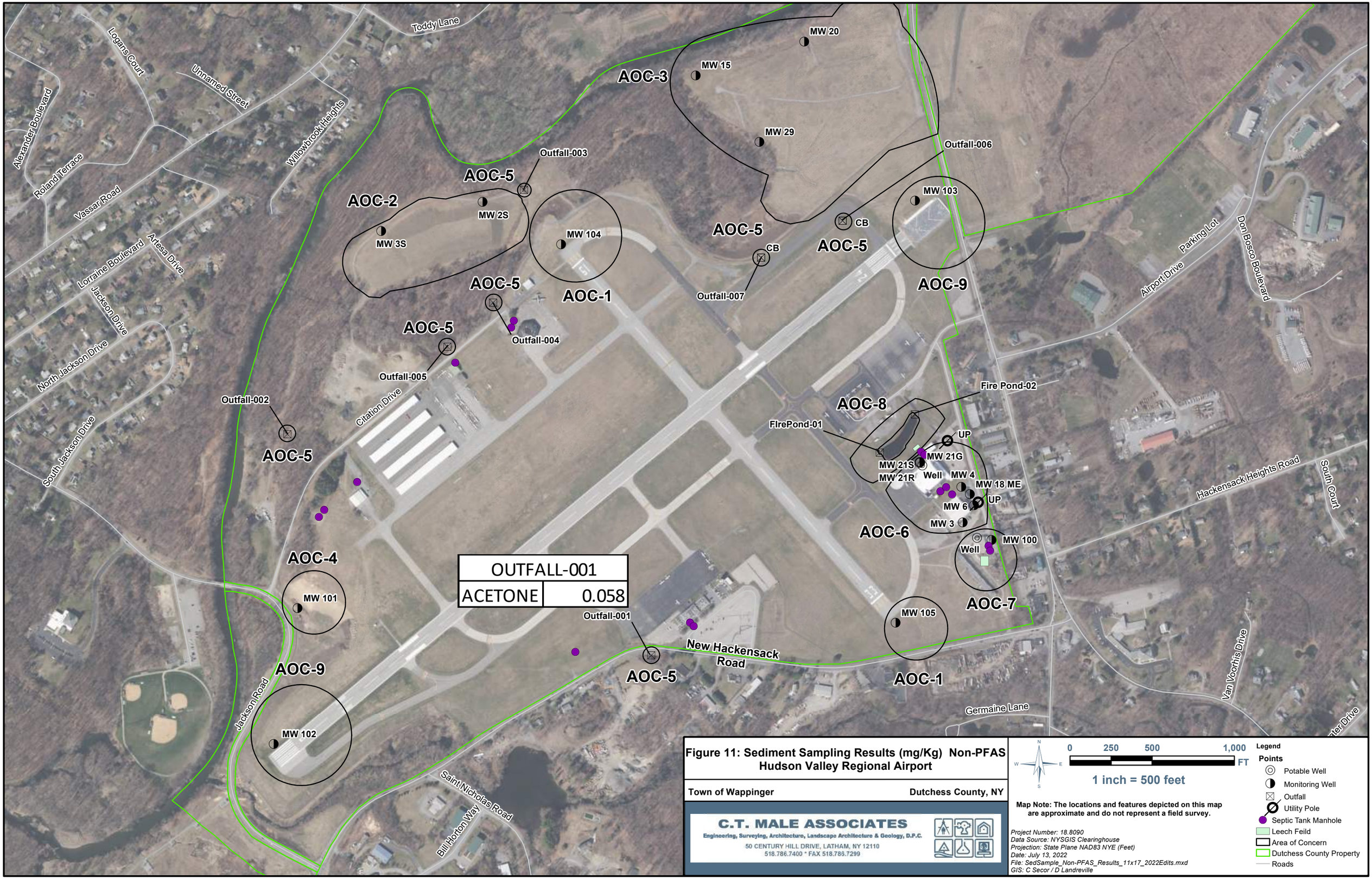

Figure 11: Sediment Sampling Results (mg/Kg) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger — **Dutchess County, NY**

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N W E S

0 250 500 1,000 FT

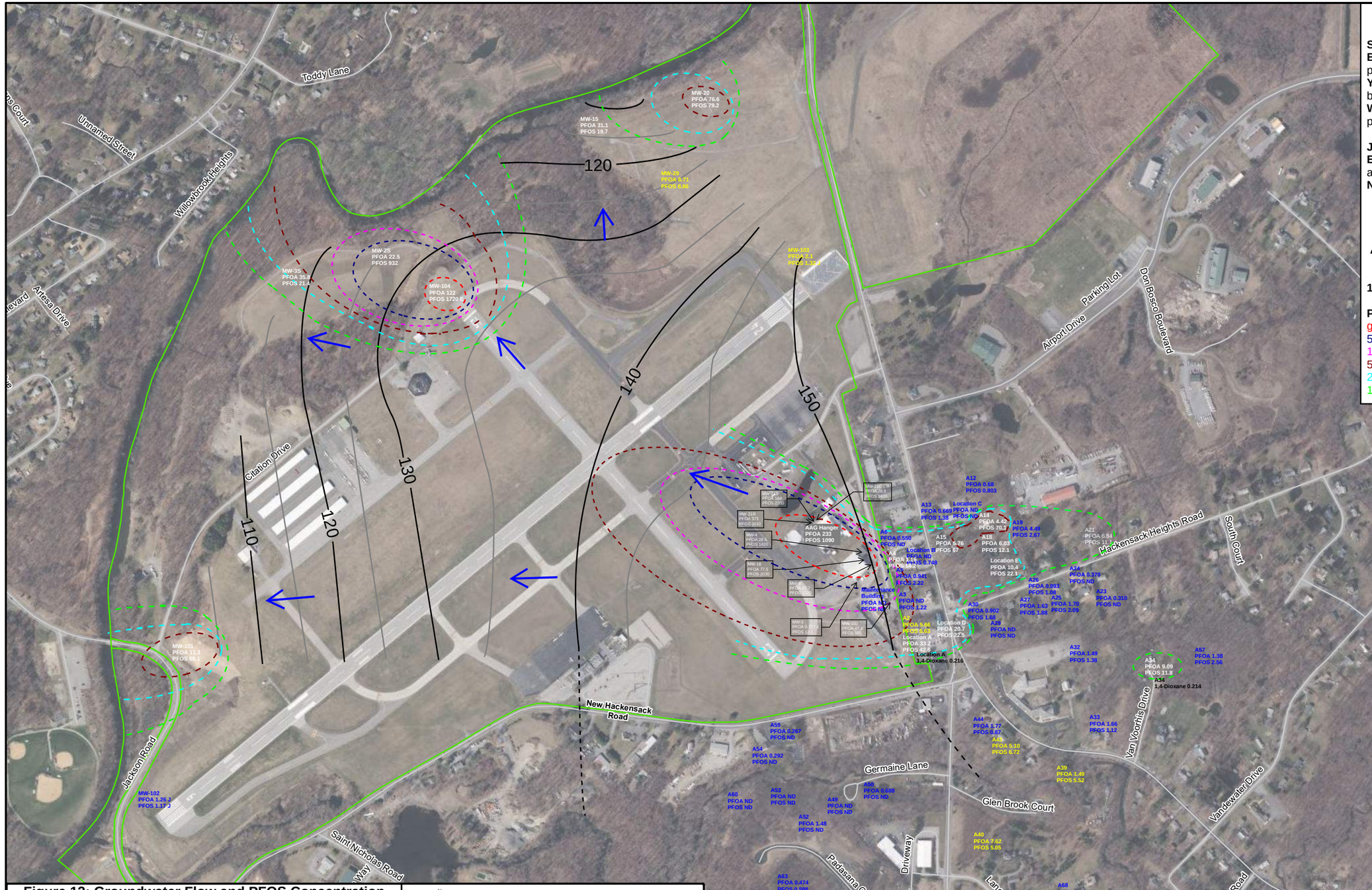
1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: SedSample_Non-PFAS_Results_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole
- Septic Tank Manhole
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads



LEGEND

Sampling Location Identification:
BLUE MAP ID = PFOA and/or PFOS results are below 5 ppt.
YELLOW MAP ID = PFOA and/or PFOS results are between 5-10 ppt.
WHITE MAP ID = Total PFOA/PFOS results are above 10 ppt.

J - the result is an estimated quantity.
E - Concentration exceeds range of the calibration curve and/or linear range of instrument.
ND - Not Detected

- Inferred Groundwater Flow Direction
- 150 - Inferred Groundwater Level Contour (ft)
- Inferred PFOS Concentration Contour

1,4-Dioxane Concentration in ppb

PFOS Concentration Contour Intervals (ppt)
greater than 1000ppt
500-100ppt
100-500ppt
50-100ppt
20-50ppt
10-20ppt

Location #	Well ID	PFOA (ppt)	PFOS (ppt)
1	A2	5.56	6.63
2	A3	ND	1.22
3	A4	1.16	14.2
4	A6	0.55	ND
5	A12	0.68	0.803
6	A14	4.42	70.1
7	A15	5.76	67
8	A19	4.49	2.67
9	A21	6.84	11.1
10	A23	0.31	ND
11	A24	0.37	ND
12	A25	1.7	2.09
13	A26	0.893	1.08
14	A27	1.63	1.88
15	A29	ND	ND
16	A30	0.902	1.68
17	A32	1.49	1.38
18	A33	1.66	1.12
19	A34	9.09	11.8
20	A39	1.49	5.52
21	A40	7.62	5.05
22	A43	5.1	6.72
23	A44	1.77	0.87
24	A49	ND	ND
25	A50	0.688	ND
26	A52	1.48	ND
27	A53	ND	ND
28	A54	0.292	ND
29	A55	0.267	ND
30	A57	1.38	2.56
31	A60	ND	ND
32	A61	6.02	1.36
33	A63	0.474	0.598
34	A64	0.344	ND
35	A66	6.84	1.45
36	A68	3.15	1.94
37	A70	7.15	0.74
38	Location A	33.2	42.6
39	Location B	ND	0.748
	A5	0.941	2.22
40	Location C	ND	ND
	A13	0.669	1.38
41	Location D	20.7	22.5
42	Location E	10.4	22.1
	A18	6.03	12.1

Location B and A5, Location C and A13, and Location E and A18 are grouped to show both samples were collected from the same well, once in 2019 and once in 2021, respectively.

Figure 12: Groundwater Flow and PFOS Concentration Map
Hudson Valley Regional Airport

Town of Wappinger **Dutchess County, NY**

N W E S

0 300 600 1,200 FT

1 inch = 600 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 13, 2022
File: 2021_AiportSamplingMap_BlankTemplate_11x17_2022Edits.mxd
GIS: D Landreville
PDF Edits: A Malamet

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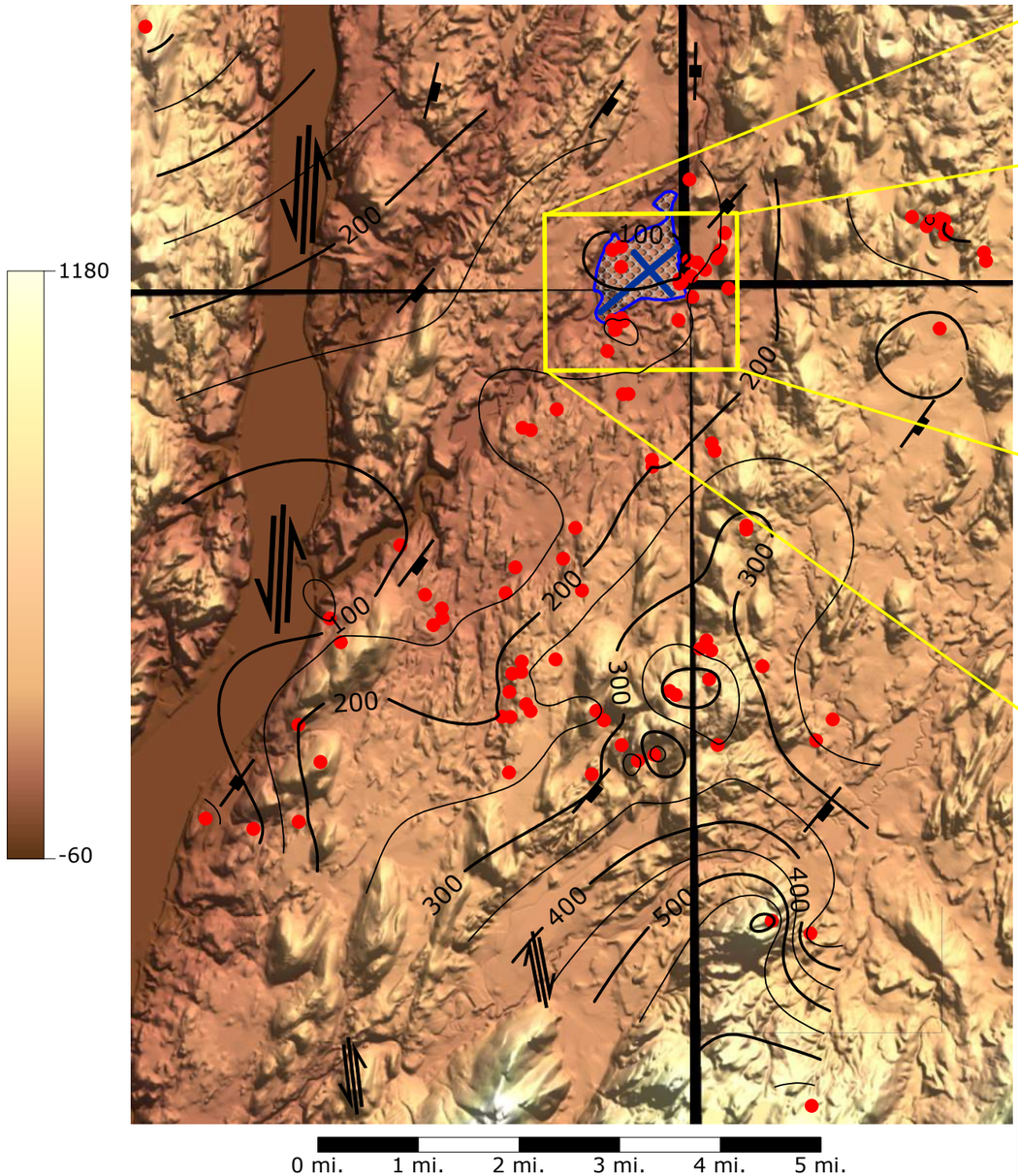

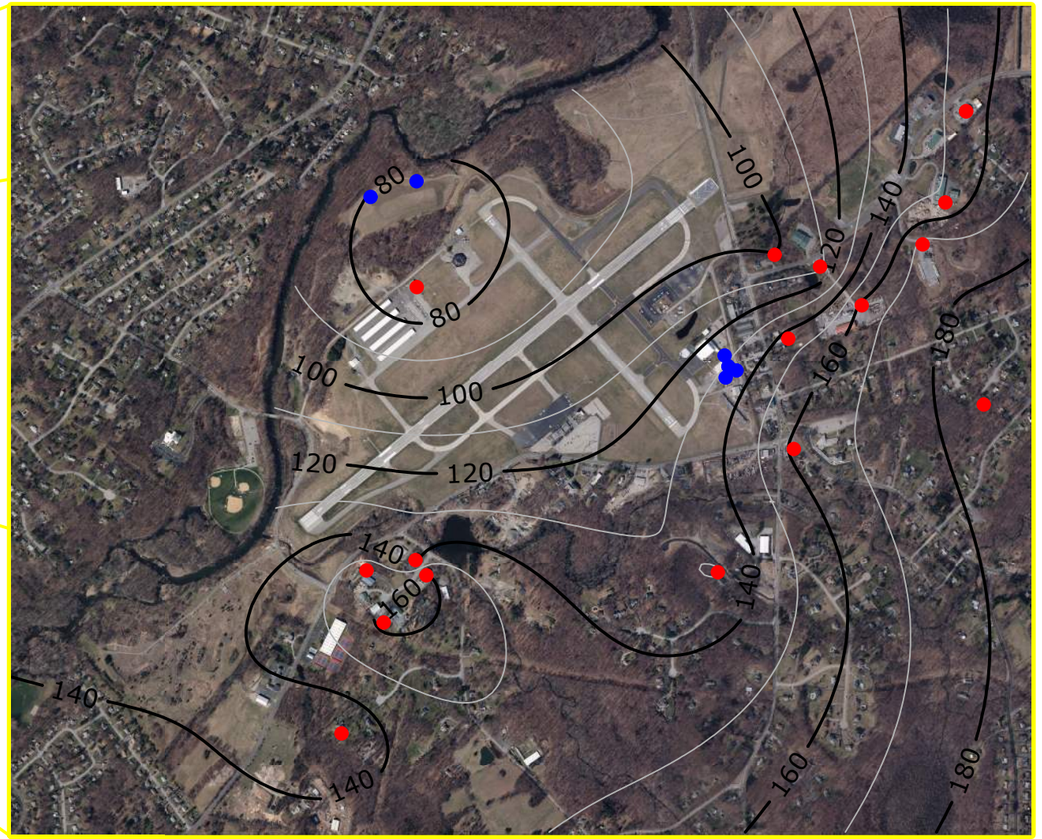

- Water Supply well, monitoring wel or boring location.
- Monitoring well or boring location (only differentiated on Site pop-out).
- Dipping fracture/brittle structure trend indicator. inferred from the Preliminary Brittle Structure Map of New York (Isachsen, 1977).
- Vertical or near vertical fracture/brittle structure trend indicator, inferred from the Preliminary Brittle Structure Map of New York (Isachsen, 1977).
- Transform fault line with direction of movement as depicted on the Preliminary Brittle Structure Map of New York (Isachsen, 1977).
- 140 Contour lines on the Site pop-up represent the approximate bedrock surface in ft. amsl using onsite monitoring well data and offsite supply well information (NYSDEC Division of Water Resource Management).

1. Shaded relief depicts ground surface, generated from Digital Elevation Models with pixel resolutions of approximately 10 meters (Cornell University Geospatial Information Repository, 1995).

2. Orthoimagery loaded from NYS GIS Clearinghouse (2016).

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

DATE	REVISIONS RECORD/DESCRIPTION	DRAFTED	CHECK	APPR.
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			

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APPROVED:

DRAFTED : D. KING

CHECKED :

PROJ. NO : 18.8090

SCALE : AS NOTED

DATE :

Figure 13: Regional Bedrock Map

HUDSON VALLEY REGIONAL AIRPORT
18 GRIFFITH WAY

TOWN OF WAPPINGER — DUTCHESS COUNTY, NEW YORK

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DWG. NO:

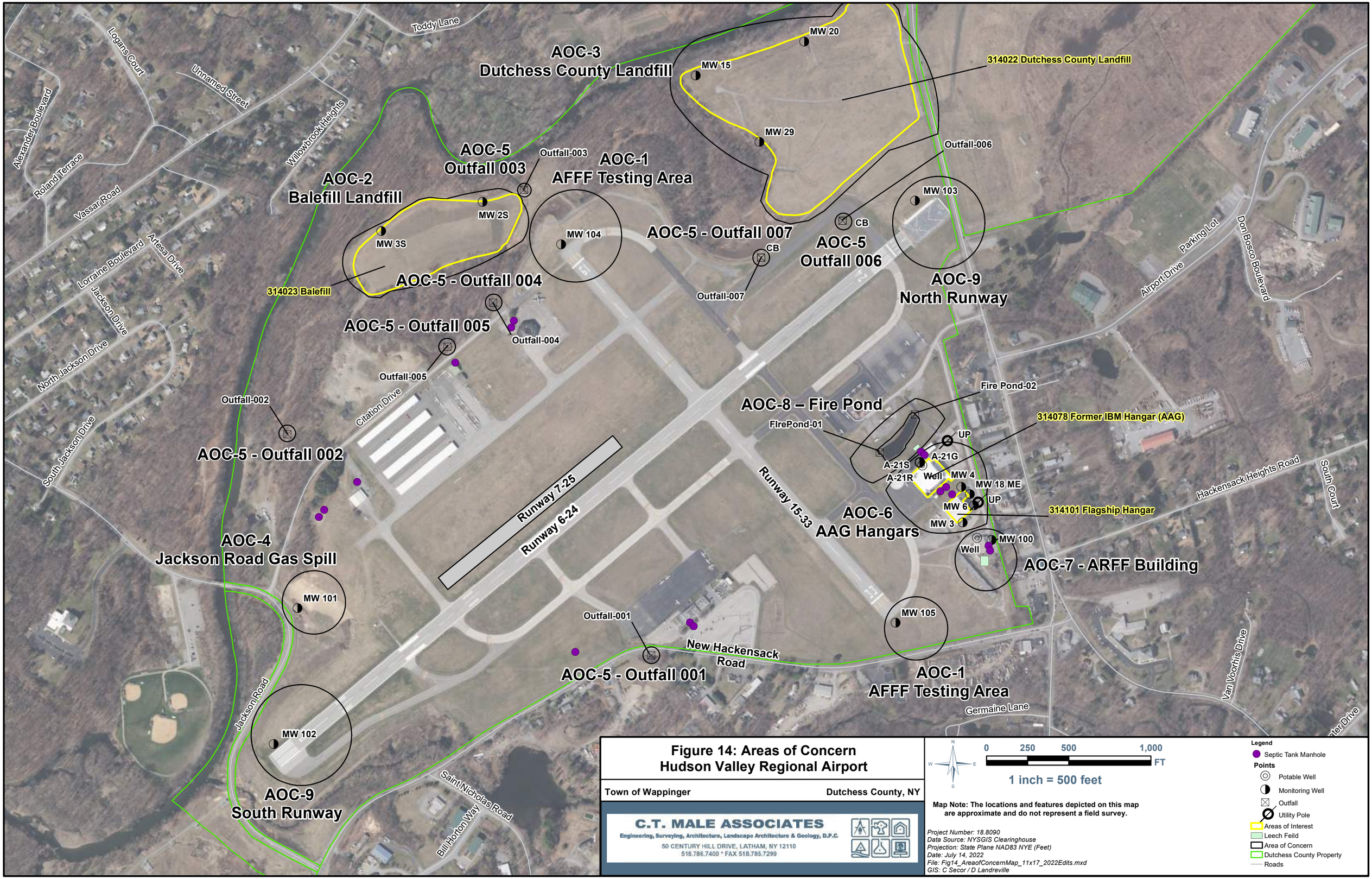

Figure 14: Areas of Concern
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

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N
W E
S

0 250 500 1,000 FT

1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: July 14, 2022
File: Fig14_AreaofConcernMap_11x17_2022Edits.mxd
GIS: C Secor / D Landreville

Legend
- Septic Tank Manhole

Points
- Potable Well
- Monitoring Well
- Outfall
- Utility Pole

- Areas of Interest
- Leech Feild
- Area of Concern
- Dutchess County Property
- Roads

TABLES

Table 1 - AOC-1, Firefighting AFFF Testing Area - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW104-190809				HVRA-MW104-190809			
		LAB ID:	L1935927-11				L1935927-11 R1			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[(1)]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM										
1,4-Dioxane	123-91-1	NS	ND		0.15	0.0339	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.89	1.15	-		-	-
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	5.68		1.89	1.26	-		-	-
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.89	0.761	-		-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.89	0.614	-		-	-
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	151	J	1.89	0.225	-		-	-
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	113		1.89	0.386	-		-	-
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.89	0.928	-		-	-
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.53	J	1.89	0.288	-		-	-
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.89	0.352	-		-	-
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	47.7		1.89	0.652	-		-	-
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	92.6		1.89	0.213	-		-	-
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	3030	E	1.89	0.356	5420		20	3.76
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	710		1.89	0.311	-		-	-
Perfluorononanoic Acid (PFNA)	375-95-1	NS	22.6		1.89	0.295	-		-	-
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	16.8		1.89	0.549	-		-	-
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	**1720**	E	1.89	0.477	**2280**		20	5.04
Perfluorooctanoic Acid (PFOA)	335-67-1	70	**122**		1.89	0.223	-		-	-
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	205		1.89	0.375	-		-	-
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND	J	1.89	0.235	-		-	-
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND	J	1.89	0.31	-		-	-
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.89	0.246	-		-	-
PFOA/PFOS, Total			1840		1.89	0.223	-		-	-

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

R - Analytical results are from sample re-analysis.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 1A - AOC-1, Firefighting AFFF Testing Area - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW104-0.5				HVRA-MW104-2.0				HVRA-MW104-9.5				HVRA-MW105-0.5				HVRA-MW105-2.0				HVRA-MW105-4.0			
		LAB ID:	L1936143-15				L1936143-16				L1935085-09				L1936143-18				L1936143-19				L1935085-12			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/12/2019				8/6/2019			
		SAMPLE DEPTH:	0.5' - 2.0'				2.0' - 3.0'				9.5' - 10.5'				0.5' - 2.0'				2.0' - 3.0'				4.0' - 5.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																								
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
1,4 DIOXANE BY 8270D-SIM																										
1,4-Dioxane	123-91-1	0.1	ND		0.00756	0.00193	ND		0.00743	0.00189	-		-	-	ND		0.0108	0.00276	ND		0.00824	0.0021	-	-	-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		**(ug/kg)**																								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.04	0.3	ND		1.06	0.303	ND		1.02	0.294	ND		1.45	0.416	ND		0.953	0.274	ND		1.02	0.294
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	0.441	J	1.04	0.187	ND		1.06	0.19	5.36		1.02	0.184	ND		1.45	0.26	ND		0.953	0.171	4.03	J	1.02	0.184
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.04	0.088	ND	J	1.06	0.089	ND	J	1.02	0.087	0.262	J	1.45	0.122	ND		0.953	0.081	ND	J	1.02	0.087
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND	J	1.04	0.21	ND	J	1.06	0.213	ND	J	1.02	0.206	ND	J	1.45	0.292	ND		0.953	0.192	ND	J	1.02	0.206
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.04	0.041	0.111	J	1.06	0.041	ND		1.02	0.04	ND		1.45	0.057	ND		0.953	0.037	0.075	J	1.02	0.04
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	0.934	J	1.04	0.024	0.268	J	1.06	0.024	ND		1.02	0.023	1.46		1.45	0.033	0.807	J	0.953	0.022	0.082	J	1.02	0.023
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	2.89		1.04	0.16	0.73	J	1.06	0.162	ND		1.02	0.157	2.47		1.45	0.222	0.796	J	0.953	0.146	ND		1.02	0.157
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.174	J	1.04	0.07	ND		1.06	0.071	ND	J	1.02	0.069	0.953	J	1.45	0.097	0.529	J	0.953	0.064	ND	J	1.02	0.069
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	0.128	J	1.04	0.073	ND		1.06	0.074	ND	J	1.02	0.072	0.492	J	1.45	0.102	0.279	J	0.953	0.067	ND	J	1.02	0.072
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	0.428	J	1.04	0.142	0.516	J	1.06	0.144	ND		1.02	0.14	ND		1.45	0.198	0.223	J	0.953	0.13	ND		1.02	0.14
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.431	J	1.04	0.047	0.143	J	1.06	0.048	ND		1.02	0.046	0.304	J	1.45	0.065	0.185	J	0.953	0.043	ND	J	1.02	0.046
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	16.6	J	1.04	0.063	12.1		1.06	0.064	3.65		1.02	0.062	6.16		1.45	0.088	5.57		0.953	0.058	4.77		1.02	0.062
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	1.91		1.04	0.055	0.795	J	1.06	0.056	0.138	J	1.02	0.054	0.964	J	1.45	0.076	0.723	J	0.953	0.05	0.342	J	1.02	0.054
Perfluorononanoic Acid (PFNA)	375-95-1	NS	1.43		1.04	0.078	0.398	J	1.06	0.079	ND		1.02	0.077	0.878	J	1.45	0.109	0.838	J	0.953	0.072	0.128	J	1.02	0.077
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	6.47		1.04	0.102	ND		1.06	0.104	ND		1.02	0.1	ND		1.45	0.142	ND		0.953	0.093	0.142	J	1.02	0.1
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	129		1.04	0.136	109		1.06	0.137	43.8		1.02	0.133	89.5		1.45	0.188	113		0.953	0.124	56.9	J	1.02	0.133
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	2.42		1.04	0.044	0.688	J	1.06	0.044	0.142	J	1.02	0.043	1.1	J	1.45	0.061	0.648	J	0.953	0.04	0.164	J	1.02	0.043
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	0.954	J	1.04	0.048	0.335	J	1.06	0.049	ND		1.02	0.047	2		1.45	0.067	1.34	J	0.953	0.044	0.219	J	1.02	0.047
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.04	0.056	ND		1.06	0.057	ND		1.02	0.055	0.137	J	1.45	0.078	0.071	J	0.953	0.052	ND		1.02	0.055
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.04	0.214	ND		1.06	0.216	ND		1.02	0.21	ND		1.45	0.297	ND		0.953	0.195	ND		1.02	0.209
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	0.318	J	1.04	0.049	0.081	J	1.06	0.049	ND	J	1.02	0.048	0.648	J	1.45	0.068	0.519	J	0.953	0.045	ND	J	1.02	0.048
PFOA/PFOS, Total			131		1.04	0.044	110	J	1.06	0.044	43.9	J	1.02	0.043	90.6	J	1.45	0.061	114	J	0.953	0.04	57.1	J	1.02	0.043
GENERAL CHEMISTRY		**(mg/kg)**																								
Solids, Total	NONE		93.2		0.1	NA	93.7		0.1	NA	94.7		0.1	NA	68.6		0.1	NA	94.3		0.1	NA	93.9		0.1	NA

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 2 - AOC-2, Former Balefill Landfill - PFAS and 1,4-D

		SAMPLE ID:	HVRA-BFL-2S-190801				HVRA-BFL-3S-190801			
		LAB ID:	L1934623-02				L1934623-01			
		COLLECTION DATE:	8/1/2019				8/1/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS		Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM		(ug/l)								
1,4-Dioxane	123-91-1	NS	0.635		0.15	0.0339	0.635		0.139	0.0314
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.97	1.19	ND		1.99	1.21
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.97	1.31	ND		1.99	1.33
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.97	0.791	1620	J	1.99	0.801
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.97	0.638	793	J	1.99	0.645
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	7.11		1.97	0.234	2310		1.99	0.237
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	9.43		1.97	0.402	13600		1.99	0.406
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.97	0.964	ND		1.99	0.976
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.97	0.299	307	J	1.99	0.303
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.97	0.366	ND		1.99	0.37
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	16.8		1.97	0.677	ND		1.99	0.685
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	5.37		1.97	0.222	8990		1.99	0.224
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	663		1.97	0.37	7760		1.99	0.374
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	58.2		1.97	0.323	13200		1.99	0.327
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.547	J	1.97	0.307	916	J	1.99	0.311
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.97	0.571	741	J	1.99	0.578
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	**932**		1.97	0.496	**21400**		1.99	0.502
Perfluorooctanoic Acid (PFOA)	335-67-1	70	22.5		1.97	0.232	**35800**		1.99	0.235
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	10.8		1.97	0.39	11200		1.99	0.394
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.97	0.244	ND		1.99	0.247
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.97	0.322	ND		1.99	0.326
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.97	0.256	ND		1.99	0.259
PFOA/PFOS, Total			955		1.97	0.232	57200		1.99	0.235

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

Table 3 - AOC-2, Former Balefill Landfill - SVOCs

		SAMPLE ID:	HVRA-BFL-2S-190801				HVRA-BFL-2S-190801				HVRA-BFL-3S-190801			
		LAB ID:	L1934623-02				L1934623-02 R1				L1934623-01			
		COLLECTION DATE:	8/1/2019				8/1/2019				8/1/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS														
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44	-		-	-	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41	-		-	-	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6	-		-	-	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2	-		-	-	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93	-		-	-	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5	-		-	-	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6	-		-	-	ND		5	1.6
3-Methylphenol/4-Methylphenol	108-39-4/106-44-5	NS	0.72	J	5	0.48	-		-	-	ND		5	0.48
3-Nitroaniline	99-09-2	5	ND		5	0.81	-		-	-	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1	-		-	-	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8	-		-	-	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76	-		-	-	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5	-		-	-	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5	-		-	-	ND		2	0.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69	-		-	-	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77	-		-	-	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57	-		-	-	ND		5	0.57
Total SVOCs			0.72	-	-	-	-	-	-	-	-	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM														
2-Methylnaphthalene	91-57-6	NS	0.17	B	0.1	0.02	0.04	J	0.1	0.02	0.02	JB	0.1	0.02
Benzo(a)anthracene	56-55-3	0.002	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(a)pyrene	50-32-8	ND	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Chrysene	218-01-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01	ND		0.8	0.01	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05	ND		0.5	0.05	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Naphthalene	91-20-3	10	0.05	J	0.1	0.05	0.13		0.1	0.05	0.06	J	0.1	0.05
Phenanthrene	85-01-8	50	0.04	J	0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Total SVOCs			0.26	-	-	-	0.17	-	-	-	0.08	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

B - The analyte was detected above the reporting limit in the associated method blank.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

R - Analytical results are from sample re-analysis.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 4 - AOC-2, Former Balefill Landfill - PCBs

		SAMPLE ID:	HVRA-BFL2S-190801				HVRA-BFL-3S-190801			
		LAB ID:	L1934623-02				L1934623-01			
		COLLECTION DATE:	8/1/2019				8/1/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC										
Aroclor 1254	11097-69-1	0.09*	ND		0.083	0.039	0.042	J	0.083	0.039
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032	0.042	J	0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 5 - AOC-2, Former Balefill Landfill - Pesticides

		SAMPLE ID:	HVRA-BFL2S-190801				HVRA-BFL-3S-190801			
		LAB ID:	L1934623-02				L1934623-01			
		COLLECTION DATE:	8/1/2019				8/1/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC										
Aldrin	309-00-2	ND	ND		0.014	0.002	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003	ND		0.029	0.003
Endrin	72-20-8	ND	ND		0.029	0.003	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045	ND		0.143	0.045

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 6 - AOC-3, Former Dutchess County Landfill - PFAS and 1,4-D

		SAMPLE ID:	HVRA-DL-MW-15-190802				HVRA-DLMW-20-190802				HVRA-DLMW-29-190802				HVRA-FTB01-190802				HVRA-LTB01-190802			
		LAB ID:	L1934623-04				L1934623-03				L1934623-05				L1934623-06				L1934623-07			
		COLLECTION DATE:	8/2/2019				8/2/2019				8/2/2019				8/2/2019				8/2/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER				WATER			
		NY-AWQS[1]																				
ANALYTE	CAS		Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM		(ug/l)																				
1,4-Dioxane	123-91-1	NS	1.92		0.139	0.0314	15.4		0.139	0.0314	ND		0.15	0.0339	-		-	-	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																				
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.82	1.1	ND		2.05	1.24	ND		1.86	1.13	ND		1.84	1.12	ND		1.89	1.14
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.82	1.21	ND		2.05	1.36	ND		1.86	1.24	ND		1.84	1.23	ND		1.89	1.26
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	0.847	J	1.82	0.731	7.32		2.05	0.824	1.01	J	1.86	0.747	ND		1.84	0.742	ND		1.89	0.758
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.82	0.589	13.5		2.05	0.664	ND		1.86	0.602	ND		1.84	0.598	ND		1.89	0.611
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	2.33		1.82	0.216	6.74		2.05	0.244	1.53	J	1.86	0.221	ND		1.84	0.22	ND		1.89	0.224
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	10.1		1.82	0.371	20.4		2.05	0.418	7.01		1.86	0.379	ND		1.84	0.376	ND		1.89	0.385
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.82	0.891	ND		2.05	1	ND		1.86	0.911	ND		1.84	0.904	ND		1.89	0.924
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.82	0.276	ND		2.05	0.311	ND		1.86	0.282	ND		1.84	0.28	ND		1.89	0.287
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.82	0.338	ND		2.05	0.381	ND		1.86	0.346	ND		1.84	0.343	ND		1.89	0.351
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	1.12	J	1.82	0.625	2.41		2.05	0.705	ND		1.86	0.639	ND		1.84	0.635	ND		1.89	0.649
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	5.79		1.82	0.205	19.8		2.05	0.231	2.49		1.86	0.209	ND		1.84	0.208	ND		1.89	0.212
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	6.01		1.82	0.342	20.1		2.05	0.385	1.54	J	1.86	0.349	ND		1.84	0.347	ND		1.89	0.355
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	10.8		1.82	0.298	46.5		2.05	0.336	5.75		1.86	0.305	0.376	J	1.84	0.302	0.389	J	1.89	0.309
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.818	J	1.82	0.284	0.524	J	2.05	0.32	0.409	J	1.86	0.29	ND		1.84	0.288	ND		1.89	0.294
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.82	0.527	ND		2.05	0.594	ND		1.86	0.539	ND		1.84	0.535	ND		1.89	0.547
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	19.7		1.82	0.458	**79.2**		2.05	0.516	8.86		1.86	0.468	ND		1.84	0.465	ND		1.89	0.475
Perfluorooctanoic Acid (PFOA)	335-67-1	70	31.1		1.82	0.214	**76.6**		2.05	0.242	8.71		1.86	0.219	ND		1.84	0.218	ND		1.89	0.223
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	4.84		1.82	0.36	12.4		2.05	0.406	3.81		1.86	0.368	ND		1.84	0.365	ND		1.89	0.374
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.82	0.225	ND		2.05	0.254	ND		1.86	0.23	ND		1.84	0.229	ND		1.89	0.234
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.82	0.297	ND		2.05	0.335	ND		1.86	0.304	ND		1.84	0.302	ND		1.89	0.309
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.82	0.236	0.557	J	2.05	0.266	ND		1.86	0.242	ND		1.84	0.24	ND		1.89	0.245
PFOA/PFOS, Total			50.8		1.82	0.214	156		2.05	0.242	17.6		1.86	0.219	ND		1.84	0.218	ND		1.89	0.223

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value > the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 7 - AOC-3, Former Dutchess County Landfill - SVOCs

		SAMPLE ID:	HVRA-DL-MW-15-190802				HVRA-DLMW-20-190802				HVRA-DLMW-29-190802			
		LAB ID:	L1934623-04				L1934623-03				L1934623-05			
		COLLECTION DATE:	8/2/2019				8/2/2019				8/2/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS														
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44	ND		10	0.44	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41	ND		5	0.41	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6	ND		20	6.6	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93	ND		5	0.93	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6	ND		5	1.6	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81	ND		5	0.81	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1	ND		5	1.1	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8	ND		5	0.8	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76	ND		10	0.76	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5	ND		2	0.5	ND		2	0.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69	ND		20	0.69	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77	ND		2	0.77	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57	ND		5	0.57	ND		5	0.57
Total SVOCs			-	-	-	-	-	-	-	-	-	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM														
2-Methylnaphthalene	91-57-6	NS	ND		0.1	0.02	0.04	JB	0.1	0.02	ND		0.1	0.02
Acenaphthene	83-32-9	20	0.04	J	0.1	0.01	0.24		0.1	0.01	ND		0.1	0.01
Acenaphthylene	208-96-8	NS	ND		0.1	0.01	0.02	J	0.1	0.01	ND		0.1	0.01
Benzo(a)anthracene	56-55-3	0.002	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(a)pyrene	50-32-8	ND	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Chrysene	218-01-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01	ND		0.8	0.01	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05	ND		0.5	0.05	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Naphthalene	91-20-3	10	ND		0.1	0.05	0.35		0.1	0.05	ND		0.1	0.05
Total SVOCs			0.04	-	-	-	0.65	-	-	-	-	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

B - The analyte was detected above the reporting limit in the associated method blank.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 8 - AOC-3, Former Dutchess County Landfill - PCBs

		SAMPLE ID:	HVRA-DL-MW-15-190802				HVRA-DLMW-20-190802				HVRA-DLMW-29-190802			
		LAB ID:	L1934623-04				L1934623-03				L1934623-05			
		COLLECTION DATE:	8/2/2019				8/2/2019				8/2/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC														
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032	ND		0.083	0.032	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 9 - AOC-3, Former Dutchess County Landfill - Pesticides

		SAMPLE ID:	HVRA-DL-MW-15-190802				HVRA-DLMW-20-190802				HVRA-DLMW-29-190802			
		LAB ID:	L1934623-04				L1934623-03				L1934623-05			
		COLLECTION DATE:	8/2/2019				8/2/2019				8/2/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC														
Aldrin	309-00-2	ND	ND		0.014	0.002	ND		0.014	0.002	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003	ND		0.014	0.003	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033	ND		0.143	0.033	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003	ND		0.029	0.003	ND		0.029	0.003
Endrin	72-20-8	ND	ND		0.029	0.003	ND		0.029	0.003	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045	ND		0.143	0.045	ND		0.143	0.045

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 10 - AOC-4, Jackson Road - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW101-190809			
		LAB ID:	L1935927-13			
		COLLECTION DATE:	8/9/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM						
1,4-Dioxane	123-91-1	NS	ND		0.15	0.0339
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)				
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	2.72		1.81	1.1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	24.1		1.81	1.21
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.81	0.728
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.81	0.587
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	11.1		1.81	0.216
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	71.1		1.81	0.37
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.81	0.888
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.536	J	1.81	0.275
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.81	0.337
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	1.9		1.81	0.623
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	16		1.81	0.204
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	99.8		1.81	0.34
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	74.8		1.81	0.297
Perfluorononanoic Acid (PFNA)	375-95-1	NS	3.05		1.81	0.283
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.81	0.525
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	68.1		1.81	0.456
Perfluorooctanoic Acid (PFOA)	335-67-1	70	11.3		1.81	0.214
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	130		1.81	0.359
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.81	0.225
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.81	0.296
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.81	0.236
PFOA/PFOS, Total			79.4		1.81	0.214

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 10A - AOC-4, Jackson Road - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW101-1.5				HVRA-MW101-2.0				HVRA-MW101-8.0			
		LAB ID:	L1936143-04				L1936143-05				L1934860-05			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.5' - 2.0'				2.0' - 3.0'				8.0' - 9.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM														
1,4-Dioxane	123-91-1	0.1	ND		0.00724	0.00185	ND		0.009	0.0023	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.02	0.294	ND		1.01	0.291	ND		0.977	0.28
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.02	0.184	ND		1.01	0.182	ND		0.977	0.175
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.02	0.087	ND		1.01	0.086	ND		0.977	0.083
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.02	0.206	ND	J	1.01	0.204	ND	J	0.977	0.197
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.02	0.04	ND		1.01	0.04	ND		0.977	0.038
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	0.072	J	1.02	0.023	0.192	J	1.01	0.023	ND		0.977	0.022
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.02	0.157	ND		1.01	0.155	ND		0.977	0.149
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.132	J	1.02	0.069	0.156	J	1.01	0.068	ND		0.977	0.065
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.02	0.072	ND		1.01	0.071	ND	J	0.977	0.068
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.02	0.14	ND		1.01	0.138	ND		0.977	0.133
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.105	J	1.02	0.046	0.26	J	1.01	0.046	ND		0.977	0.044
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	0.288	J	1.02	0.062	0.239	J	1.01	0.061	0.1	J	0.977	0.059
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	0.164	J	1.02	0.054	0.263	J	1.01	0.053	0.07	J	0.977	0.051
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.02	0.077	0.746	J	1.01	0.076	ND		0.977	0.073
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.02	0.1	ND		1.01	0.099	ND		0.977	0.096
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	2.27		1.02	0.133	11.3		1.01	0.132	1.12		0.977	0.127
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	0.132	J	1.02	0.043	0.451	J	1.01	0.042	0.057	J	0.977	0.041
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	0.117	J	1.02	0.047	0.509	J	1.01	0.047	0.047	J	0.977	0.045
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.02	0.055	ND	J	1.01	0.055	ND	J	0.977	0.053
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.02	0.209	ND		1.01	0.207	ND	J	0.977	0.2
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	0.201	J	1.02	0.048	0.071	J	1.01	0.047	ND	J	0.977	0.046
PFOA/PFOS, Total			2.4	J	1.02	0.043	11.8	J	1.01	0.042	1.18	J	0.977	0.041

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 11 - AOC-4, Jackson Road - PCBs

		SAMPLE ID:	HVRA-MW101-190809			
		LAB ID:	L1935927-13			
		COLLECTION DATE:	8/9/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**
POLYCHLORINATED BIPHENYLS BY GC						
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 11A - AOC-4, Jackson Road - PCBs

		SAMPLE ID:	HVRA-MW101-1.5				HVRA-MW101-2.0				HVRA-MW101-8.0			
		LAB ID:	L1936143-04				L1936143-05				L1934860-05			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.5' - 2.0'				2.0' - 3.0'				8.0' - 9.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC														
PCBs, Total	1336-36-3		ND		0.0339	0.00301	ND		0.0362	0.00321	ND		0.0332	0.00294

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 12 - AOC-4, Jackson Road - Pesticides

		SAMPLE ID:	HVRA-MW101-190809			
		LAB ID:	L1935927-13			
		COLLECTION DATE:	8/9/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**
ORGANOCHLORINE PESTICIDES BY GC						
Aldrin	309-00-2	ND	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003
Endrin	72-20-8	ND	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 12A - AOC-4, Jackson Road - Pesticides

		SAMPLE ID:	HVRA-MW101-1.5				HVRA-MW101-2.0				HVRA-MW101-8.0			
		LAB ID:	L1936143-04				L1936143-05				L1934860-05			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.5' - 2.0'				2.0' - 3.0'				8.0' - 9.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
ORGANOCHLORINE PESTICIDES BY GC														
4,4'-DDE	72-55-9	0.0033	ND		0.00164	0.000379	ND		0.00181	0.000419	ND		0.00166	0.000384
4,4'-DDT	50-29-3	0.0033	ND		0.00308	0.00132	ND		0.0034	0.00146	ND		0.00311	0.00133

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 13 - AOC-4, Jackson Road - Metals

		SAMPLE ID:	HVRA-MW101-190809			
		LAB ID:	L1935927-13			
		COLLECTION DATE:	8/9/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[(1)]				
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**
TOTAL METALS						
Aluminum, Total	7429-90-5	NS	3050		10	3.27
Antimony, Total	7440-36-0	3	0.62	J	4	0.42
Arsenic, Total	7440-38-2	25	4.28		0.5	0.16
Barium, Total	7440-39-3	1000	78.28		0.5	0.17
Beryllium, Total	7440-41-7	3	0.19	J	0.5	0.1
Cadmium, Total	7440-43-9	5	0.09	J	0.2	0.05
Calcium, Total	7440-70-2	NS	74900		100	39.4
Chromium, Total	7440-47-3	50	6.42		1	0.17
Cobalt, Total	7440-48-4	NS	3.95		0.5	0.16
Copper, Total	7440-50-8	200	13.37		1	0.38
Iron, Total	7439-89-6	300	**7690**		50	19.1
Lead, Total	7439-92-1	25	5.42		1	0.34
Magnesium, Total	7439-95-4	35000	24300		70	24.2
Manganese, Total	7439-96-5	300	**1657**		1	0.44
Nickel, Total	7440-02-0	100	7.55		2	0.55
Potassium, Total	7440-09-7	NS	1700		100	30.9
Sodium, Total	7440-23-5	20000	10400		100	29.3
Thallium, Total	7440-28-0	0.5	ND		0.5	0.14
Vanadium, Total	7440-62-2	NS	4.55	J	5	1.57
Zinc, Total	7440-66-6	2000	30.04		10	3.41
GENERAL CHEMISTRY						
Cyanide, Total	57-12-5	200	ND		5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 13A - AOC-4, Jackson Road - Metals

		SAMPLE ID:	HVRA-MW101-1.5				HVRA-MW101-2.0				HVRA-MW101-8.0			
		LAB ID:	L1936143-04				L1936143-05				L1934860-05			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.5' - 2.0'				2.0' - 3.0'				8.0' - 9.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
TOTAL METALS														
Aluminum, Total	7429-90-5	NS	2130		7.89	2.13	11800		8.91	2.4	12500		8.32	2.25
Antimony, Total	7440-36-0	NS	0.363	J	3.94	0.3	1.04	J	4.46	0.339	ND		4.16	0.316
Arsenic, Total	7440-38-2	13	4.27		0.789	0.164	2.55		0.891	0.185	1.46		0.832	0.173
Barium, Total	7440-39-3	350	10.8		0.789	0.137	55.9		0.891	0.155	33.7		0.832	0.145
Beryllium, Total	7440-41-7	7.2	0.126	J	0.394	0.026	0.401	J	0.446	0.029	0.416		0.416	0.028
Cadmium, Total	7440-43-9	2.5	ND		0.789	0.077	ND		0.891	0.087	0.791	J	0.832	0.082
Calcium, Total	7440-70-2	NS	122000		78.9	27.6	8050		8.91	3.12	7480		8.32	2.91
Chromium, Total	7440-47-3	30	3.72		0.789	0.076	12.3		0.891	0.086	16.1		0.832	0.08
Cobalt, Total	7440-48-4	NS	2.8		1.58	0.131	7.6		1.78	0.148	8.44		1.66	0.138
Copper, Total	7440-50-8	50	8.36		0.789	0.204	13.9		0.891	0.23	15.2		0.832	0.215
Iron, Total	7439-89-6	NS	7120		3.94	0.712	20000		4.46	0.805	24100		4.16	0.752
Lead, Total	7439-92-1	63	4.71		3.94	0.211	11.5		4.46	0.239	11.9		4.16	0.223
Magnesium, Total	7439-95-4	NS	55500		7.89	1.21	7550		8.91	1.37	9340		8.32	1.28
Manganese, Total	7439-96-5	1600	185		0.789	0.125	568		0.891	0.142	479		0.832	0.132
Mercury, Total	7439-97-6	0.18	ND		0.065	0.042	ND		0.073	0.048	ND		0.066	0.043
Nickel, Total	7440-02-0	30	4.84		1.97	0.191	14.7		2.23	0.216	18.3		2.08	0.201
Potassium, Total	7440-09-7	NS	228		197	11.4	330		223	12.8	362		208	12
Selenium, Total	7782-49-2	3.9	0.497	J	1.58	0.204	ND		1.78	0.23	0.716	J	1.66	0.215
Sodium, Total	7440-23-5	NS	110	J	158	2.48	32.6	J	178	2.81	30.8	J	166	2.62
Thallium, Total	7440-28-0	NS	ND		1.58	0.248	ND		1.78	0.281	ND		1.66	0.262
Vanadium, Total	7440-62-2	NS	6.92		0.789	0.16	12.8		0.891	0.181	13.9		0.832	0.169
Zinc, Total	7440-66-6	109	12.7		3.94	0.231	47.7		4.46	0.261	55.3		4.16	0.244
GENERAL CHEMISTRY		**(mg/kg)**												
Moisture	NONE		-		-	-	-		-	-	-		-	-
Solids, Total	NONE	NS	96.7		0.1	NA	87.2		0.1	NA	94.8		0.1	NA

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
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B - The analyte was detected above the reporting limit in the associated method blank.
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Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 14 - AOC-5, Stormwater Outfall - PFAS and 1,4-D

		SAMPLE ID:	FIELD BLANK				OUTFALL-001-W			
		LAB ID:	L1932869-04				L1932869-08			
		COLLECTION DATE:	7/23/2019				7/23/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM										
1,4-Dioxane	123-91-1		-		-	-	ND		0.15	0.0339
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.8	1.09	1.93	J	2.02	1.23
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.8	1.2	214		2.02	1.35
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.8	0.726	ND		2.02	0.814
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.8	0.585	ND		2.02	0.656
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.8	0.215	4.19		2.02	0.241
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	ND		1.8	0.368	29		2.02	0.413
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.8	0.884	ND		2.02	0.992
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.8	0.274	1.29	J	2.02	0.308
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.8	0.336	ND		2.02	0.376
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.8	0.621	1.64	J	2.02	0.696
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.8	0.203	22.6		2.02	0.228
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.8	0.339	69.9		2.02	0.38
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	ND		1.8	0.296	57.4		2.02	0.332
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.8	0.282	5.65		2.02	0.316
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.8	0.523	ND		2.02	0.587
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	ND		1.8	0.455	140		2.02	0.51
Perfluorooctanoic Acid (PFOA)	335-67-1	70	ND		1.8	0.213	21.4		2.02	0.239
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	ND		1.8	0.357	87.2		2.02	0.401
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.8	0.224	ND		2.02	0.251
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.8	0.295	ND		2.02	0.331
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.8	0.235	0.729	J	2.02	0.263
PFOA/PFOS, Total			ND		1.8	0.213	161		2.02	0.239

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 14A - AOC-5, Stormwater Outfall - PFAS and 1,4-D

			SAMPLE ID:	HVRA-OF1-190808				HVRA-FD02-190808			
			LAB ID:	L1935927-08				L1935927-09			
			COLLECTION DATE:	8/8/2019				8/8/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES[1]								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY EPA 5035 Low											
1,4-Dioxane	123-91-1	NS	0.1	ND		0.087	0.038	ND		0.083	0.036
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)	(ug/kg)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	NS	ND		1.03	0.296	ND		1.05	0.301
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	NS	ND		1.03	0.185	ND		1.05	0.188
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	NS	ND		1.03	0.087	ND		1.05	0.089
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	NS	ND		1.03	0.208	ND		1.05	0.211
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	NS	ND		1.03	0.4	ND		1.05	0.041
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	NS	ND		1.03	0.023	ND		1.05	0.024
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	NS	ND		1.03	0.158	ND		1.05	0.16
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	NS	ND		1.03	0.069	ND		1.05	0.07
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	NS	ND		1.03	0.072	ND		1.05	0.073
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	NS	ND		1.03	0.141	ND		1.05	0.143
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	NS	ND		1.03	0.047	ND		1.05	0.047
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	NS	ND		1.03	0.062	ND		1.05	0.064
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	NS	0.069	J	1.03	0.054	0.061	J	1.05	0.055
Perfluorononanoic Acid (PFNA)	375-95-1	NS	NS	ND		1.03	0.077	ND		1.05	0.079
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	NS	ND		1.03	0.101	ND		1.05	0.103
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	NS	0.356	J	1.03	0.134	0.32	J	1.05	0.136
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	NS	ND		1.03	0.043	ND		1.05	0.044
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	NS	ND		1.03	0.047	ND		1.05	0.048
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	NS	ND		1.03	0.056	ND		1.05	0.057
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	NS	ND		1.03	0.211	ND		1.05	0.214
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	NS	ND		1.03	0.048	ND		1.05	0.049
PFOA/PFOS, Total		NS	NS	0.356	J	1.03	0.043	0.32	J	1.05	0.044
GENERAL CHEMISTRY		(mg/kg)	(mg/kg)								
Solids, Total	NONE	NS	NS	84.3		0.1	NA	85.5		0.1	NA

Notes:
The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.
J - Estimated Value $\geq$ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
NS denotes No Standard
ND denotes Non Detect
ug/kg = ppb or parts per billion

Table 15 - AOC-5, Stormwater Outfalls - VOCs

		SAMPLE ID:	OUTFALL-001-W				TRIP BLANK			
		LAB ID:	L1932869-08				L1932869-09			
		COLLECTION DATE:	7/23/2019				7/23/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY GC/MS										
1,1,2-Trichloroethane	79-00-5	1	ND		1.5	0.5	ND		1.5	0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ND		2.5	0.7	ND		2.5	0.7
1,2-Dibromoethane	106-93-4	0.0006	ND		2	0.65	ND		2	0.65
1,2-Dichloropropane	78-87-5	1	ND		1	0.14	ND		1	0.14
Acetone	67-64-1	50	7.5		5	1.5	5.7		5	1.5
Chloromethane	74-87-3	5	ND		2.5	0.7	0.92	J	2.5	0.7
cis-1,3-Dichloropropene	10061-01-5	0.4	ND		0.5	0.14	ND		0.5	0.14
Dichlorodifluoromethane	75-71-8	5	ND		5	1	ND		5	1
trans-1,3-Dichloropropene	10061-02-6	0.4	ND		0.5	0.16	ND		0.5	0.16
Total VOCs			7.5	-	-	-	6.62	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 15A - AOC-5, Stormwater Outfall - VOCs

			SAMPLE ID:	HVRA-FD02-190808				HVRA-OF1-190808			
			LAB ID:	L1935927-09				L1935927-08			
			COLLECTION DATE:	8/8/2019				8/8/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES[1]								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035											
Acetone	67-64-1	NS	0.05	**0.058**		0.01	0.005	0.031		0.011	0.0052
Tetrachloroethene	127-18-4	<16, 16-57, >57	1.3	0.0013		0.00052	0.0002	0.00066		0.00054	0.00021
trans-1,2-Dichloroethene	156-60-5	<1.2, 1.2-11, >11	0.19	0.0002	J	0.0016	0.00014	ND		0.0016	0.00015
Total VOCs				0.0595	-	-	-	0.03166	-	-	-

Notes:
The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
Results that are shaded yellow and in bold indicate a concentration above the Guidance Value.

Table 16 - AOC-5, Stormwater Outfalls - SVOCs

		SAMPLE ID:	OUTFALL-001-W			
		LAB ID:	L1932869-08			
		COLLECTION DATE:	7/23/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS						
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5
Bis(2-ethylhexyl)phthalate	117-81-7	5	4.1		3	1.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57
Total SVOCs			4.1	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM						
Benzo(a)anthracene	56-55-3	0.002	**0.04**	J	0.1	0.02
Benzo(a)pyrene	50-32-8	0	**0.02**	J	0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	**0.04**	J	0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	**0.02**	J	0.1	0.01
Chrysene	218-01-9	0.002	**0.04**	J	0.1	0.01
Fluoranthene	206-44-0	50	0.06	J	0.1	0.02
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01
Naphthalene	91-20-3	10	0.11		0.1	0.05
Pyrene	129-00-0	50	0.04	J	0.1	0.02
Total SVOCs			0.37	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 16A - AOC-5, Stormwater Outfall - SVOCs

			SAMPLE ID:	HVRA-FD02-190808				HVRA-OF1-190808			
			LAB ID:	L1935927-09				L1935927-08			
			COLLECTION DATE:	8/8/2019				8/8/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES[1]								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS											
Anthracene	120-12-7	NS	100	0.069	J	0.12	0.037	ND		0.12	0.038
Benzo(a)anthracene	56-55-3	NS	1	0.31		0.12	0.022	0.2		0.12	0.022
Benzo(a)pyrene	50-32-8	NS	1	0.3		0.15	0.047	0.2		0.16	0.048
Benzo(b)fluoranthene	205-99-2	NS	1	0.44		0.12	0.032	0.32		0.12	0.033
Benzo(ghi)perylene	191-24-2	NS	100	0.23		0.15	0.022	0.16		0.16	0.023
Benzo(k)fluoranthene	207-08-9	NS	0.8	0.16		0.12	0.031	0.083	J	0.12	0.031
Carbazole	86-74-8	NS	NS	0.067	J	0.19	0.019	0.049	J	0.2	0.019
Chrysene	218-01-9	NS	1	0.38		0.12	0.02	0.24		0.12	0.02
Dibenzo(a,h)anthracene	53-70-3	NS	0.33	0.046	J	0.12	0.022	0.029	J	0.12	0.023
Fluoranthene	206-44-0	NS	100	0.9		0.12	0.022	0.55		0.12	0.022
Fluorene	86-73-7	NS	30	0.028	J	0.19	0.019	ND		0.2	0.019
Indeno(1,2,3-cd)pyrene	193-39-5	NS	0.5	0.24		0.15	0.027	0.17		0.16	0.027
Phenanthrene	85-01-8	NS	100	0.47		0.12	0.023	0.26		0.12	0.024
Pyrene	129-00-0	NS	100	0.69		0.12	0.019	0.43		0.12	0.02
Total SVOCs				4.33	-	-	-	2.691	-	-	-

Notes:

The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

NS denotes No Standard

ND denotes Non Detect

mg/kg = ppm or parts per million

Table 17 - AOC-5, AAG Hangars - Pesticides and PCBs

		SAMPLE ID:	OUTFALL-001-W			
		LAB ID:	L1932869-08			
		COLLECTION DATE:	7/23/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**
ORGANOCHLORINE PESTICIDES BY GC						
Aldrin	309-00-2	0	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003
Endrin	72-20-8	0	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045
POLYCHLORINATED BIPHENYLS BY GC						
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 17A - AOC-5, Stormwater Outfall - Pesticides

			SAMPLE ID:	HVRA-FD02-190808				HVRA-OF1-190808				HVRA-OF1-190808			
			LAB ID:	L1935927-09				L1935927-08				L1935927-08 R1			
			COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES												
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC															
4,4'-DDE	72-55-9	NS	0.0033	0.00186		0.00181	0.000419	0.00165	J	0.00185	0.000428	-	-	-	-
4,4'-DDT	50-29-3	<0.044, 0.044-48, >48	0.0033	ND		0.0034	0.00146	ND		0.00347	0.00149	-	-	-	-
Endrin aldehyde	7421-93-4	NS	NS	ND		0.00226	0.000793	0.207	E	0.00231	0.000809	0.206		0.00462	0.00162

Notes:

The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

B - The analyte was detected above the reporting limit in the associated method blank.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

R - Analytical results are from sample re-analysis.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

mg/kg = ppm or parts per million

Results that are shaded blue indicate a RL or MDL above the Guidance Value.

Table 18 - AOC-5, AAG Hangars - Metals

		SAMPLE ID:	OUTFALL-001-W			
		LAB ID:	L1932869-08			
		COLLECTION DATE:	7/23/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
TOTAL METALS						
Aluminum, Total	7429-90-5	NS	ND		100	32
Antimony, Total	7440-36-0	3	**16**	J	50	7
Arsenic, Total	7440-38-2	25	3	J	5	2
Barium, Total	7440-39-3	1000	29		10	2
Beryllium, Total	7440-41-7	3	ND		5	1
Cadmium, Total	7440-43-9	5	ND		5	1
Calcium, Total	7440-70-2	NS	44100		100	35
Chromium, Total	7440-47-3	50	ND		10	2
Cobalt, Total	7440-48-4	NS	ND		20	2
Copper, Total	7440-50-8	200	ND		10	2
Iron, Total	7439-89-6	300	**588**		50	9
Lead, Total	7439-92-1	25	ND		10	3
Magnesium, Total	7439-95-4	35000	10300		100	15
Manganese, Total	7439-96-5	300	**712**		10	2
Mercury, Total	7439-97-6	0.7	ND		0.2	0.09
Nickel, Total	7440-02-0	100	ND		25	2
Potassium, Total	7440-09-7	NS	2400	J	2500	237
Selenium, Total	7782-49-2	10	ND		10	4
Silver, Total	7440-22-4	50	ND		7	3
Sodium, Total	7440-23-5	20000	**81300**		2000	120
Thallium, Total	7440-28-0	0.5	ND		20	3
Vanadium, Total	7440-62-2	NS	ND		10	2
Zinc, Total	7440-66-6	2000	2	J	50	2
GENERAL CHEMISTRY						
Cyanide, Total	57-12-5	200	3	J	5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 18A - AOC-5, Stormwater Outfall - Metals

			SAMPLE ID:	HVRA-FD02-190808				HVRA-OF1-190808			
			LAB ID:	L1935927-09				L1935927-08			
			COLLECTION DATE:	8/8/2019				8/8/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS											
Aluminum, Total	7429-90-5	NS	NS	7020		8.97	2.42	8980		9.03	2.44
Antimony, Total	7440-36-0	NS	NS	0.789	J	4.48	0.341	0.777	J	4.52	0.343
Arsenic, Total	7440-38-2	<10, 10-33, >33	13	6.4		0.897	0.186	5.14		0.903	0.188
Barium, Total	7440-39-3	NS	350	48.1		0.897	0.156	64.5		0.903	0.157
Beryllium, Total	7440-41-7	NS	7.2	0.224	J	0.448	0.03	0.253	J	0.452	0.03
Cadmium, Total	7440-43-9	<1, 1-5, >5	2.5	0.735	J	0.897	0.088	0.641	J	0.903	0.089
Calcium, Total	7440-70-2	NS	NS	55100	J	8.97	3.14	19600	J	9.03	3.16
Chromium, Total	7440-47-3	<43, 43-110, >110	NS	7.5		0.897	0.086	9.22		0.903	0.087
Cobalt, Total	7440-48-4	NS	NS	5.05		1.79	0.149	6.5		1.81	0.15
Copper, Total	7440-50-8	<32, 32-150, >150	50	25.2	J	0.897	0.231	16.4	J	0.903	0.233
Iron, Total	7439-89-6	NS	NS	21100		4.48	0.81	18600		4.52	0.816
Lead, Total	7439-92-1	<36, 36-130, >130	63	20		4.48	0.24	21.9		4.52	0.242
Magnesium, Total	7439-95-4	NS	NS	15100	J	8.97	1.38	13000	J	9.03	1.39
Manganese, Total	7439-96-5	NS	1600	1250		0.897	0.143	891		0.903	0.144
Nickel, Total	7440-02-0	<23, 23-49, >49	30	10.8		2.24	0.217	13.9		2.26	0.219
Potassium, Total	7440-09-7	NS	NS	186	J	224	12.9	283		226	13
Silver, Total	7440-22-4	<1, 1-2.2, >2.2	2	0.287	J	0.897	0.254	ND		0.903	0.256
Sodium, Total	7440-23-5	NS	NS	73.9	J	179	2.82	87.5	J	181	2.84
Vanadium, Total	7440-62-2	NS	NS	9.82		0.897	0.182	10.4		0.903	0.183
Zinc, Total	7440-66-6	<120, 120-460, >460	109	88.2		4.48	0.263	77.6		4.52	0.265

Notes:

The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.

J - Estimated Value $\geq$ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

NS denotes No Standard

ND denotes Non Detect

mg/kg = ppm or parts per million

Table 19 - AOC-6, AAG Hangars - PFAS and 1,4-D

		SAMPLE ID:	FIELD BLANK				HVRA-AAG-PW01				TRIP BLANK				HVRA-AAG-PW01			
		LAB ID:	L1931312-06				L1931312-04				L1931312-05				L1931312-01			
		COLLECTION DATE:	7/17/2019				7/17/2019				7/17/2019				7/17/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER			
		NY-AWQS[1]																
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																		
1,4-Dioxane	123-91-1	NS	-		-	-	-	-	-	-	-	-	-	-	ND		144	32.6
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.8	1.09	42.4		20	12.1	ND		1.8	1.14	-		-	-
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.8	1.2	2180		20	13.3	ND		1.8	1.25	-		-	-
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.8	0.726	ND		20	8.04	ND		1.8	0.756	-		-	-
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.8	0.585	ND		20	6.48	ND		1.8	0.609	-		-	-
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.8	0.215	23.6		20	2.38	ND		1.8	0.224	-		-	-
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	ND		1.8	0.368	191		20	4.08	ND		1.8	0.383	-		-	-
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.8	0.884	ND		20	9.8	ND		1.8	0.921	-		-	-
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.8	0.274	ND		20	3.04	ND		1.8	0.286	-		-	-
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.8	0.336	ND		20	3.72	ND		1.8	0.35	-		-	-
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.8	0.621	37.6		20	6.88	ND		1.8	0.647	-		-	-
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.8	0.203	191		20	2.25	ND		1.8	0.212	-		-	-
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.8	0.339	553		20	3.76	ND		1.8	0.353	-		-	-
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	ND		1.8	0.296	621		20	3.28	ND		1.8	0.308	-		-	-
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.8	0.282	21.4		20	3.12	ND		1.8	0.293	-		-	-
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.8	0.523	ND		20	5.8	ND		1.8	0.545	-		-	-
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	ND		1.8	0.455	**1090**		20	5.04	ND		1.8	0.474	-		-	-
Perfluorooctanoic Acid (PFOA)	335-67-1	70	ND		1.8	0.213	**233**		20	2.36	ND		1.8	0.222	-		-	-
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	ND		1.8	0.357	838		20	3.96	ND		1.8	0.372	-		-	-
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.8	0.224	ND		20	2.48	ND		1.8	0.233	-		-	-
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.8	0.295	ND		20	3.27	ND		1.8	0.308	-		-	-
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.8	0.235	ND		20	2.6	ND		1.8	0.244	-		-	-
PFOA/PFOS, Total			ND		1.8	0.213	1320		20	2.36	ND		1.8	0.222	-		-	-

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required
(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
ug/l = ppb or parts per billion
ng/l = ppt or parts per trillion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 20 - AOC-6, AAG Hangars - SVOCs

		SAMPLE ID:	HVRA-AAG-PW01			
		LAB ID:	L1931312-01			
		COLLECTION DATE:	7/16/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS						
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5
Bis(2-ethylhexyl)phthalate	117-81-7	5	1.7	J	3	1.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57
Total SVOCs			1.7	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM						
Benzo(a)anthracene	56-55-3	0.002	ND		0.1	0.02
Benzo(a)pyrene	50-32-8	0	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	ND		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	ND		0.1	0.01
Chrysene	218-01-9	0.002	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01
Phenanthrene	85-01-8	50	0.04	J	0.1	0.02
Total SVOCs			0.04	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 21 - AOC-6, AAG Hangars - PCBs

		SAMPLE ID:	HVRA-AAG-PW01			
		LAB ID:	L1931312-01			
		COLLECTION DATE:	7/16/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC						
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 22 - AOC-6, AAG Hangars - Metals

		SAMPLE ID:	HVRA-AAG-PW01			
		LAB ID:	L1931312-01			
		COLLECTION DATE:	7/16/2019			
		SAMPLE MATRIX:	WATER			
		NY-AWQS[1]				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
TOTAL METALS						
Antimony, Total	7440-36-0	3	0.97	J	4	0.42
Arsenic, Total	7440-38-2	25	0.22	J	0.5	0.16
Barium, Total	7440-39-3	1000	58.78		0.5	0.17
Calcium, Total	7440-70-2	NS	102000		100	39.4
Chromium, Total	7440-47-3	50	0.24	J	1	0.17
Cobalt, Total	7440-48-4	NS	0.39	J	0.5	0.16
Copper, Total	7440-50-8	200	22.39		1	0.38
Iron, Total	7439-89-6	300	29.9	J	70	19.1
Lead, Total	7439-92-1	25	2.38		1	0.34
Magnesium, Total	7439-95-4	35000	18600		70	24.2
Manganese, Total	7439-96-5	300	180.5		1	0.44
Nickel, Total	7440-02-0	100	0.71	J	2	0.55
Potassium, Total	7440-09-7	NS	2440		100	30.9
Sodium, Total	7440-23-5	20000	**157000**		100	29.3
Thallium, Total	7440-28-0	0.5	ND		0.5	0.14
Zinc, Total	7440-66-6	2000	7.74	J	10	3.41
GENERAL CHEMISTRY						
Cyanide, Total	57-12-5	200	ND		5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 23 - AOC-6, AAG Hangars - PFAS and 1,4-D

		SAMPLE ID:	HVRA-A-21G-190731				HVRA-A-21R-190731				HVRA-A-21S-190731				HVRA-FTB01-190731				HVRA-LTB01-190731				HVRA-ME-18-190801				HVRA-MW-3-190801				HVRA-MW-4-190801				HVRA-MW-6-190801			
		LAB ID:	L1934423-05				L1934423-02				L1934423-01				L1934423-04				L1934423-03				L1934423-06				L1934423-09				L1934423-08				L1934423-07			
		COLLECTION DATE:	7/31/2019				7/31/2019				7/31/2019				7/31/2019				7/31/2019				8/1/2019				8/1/2019				8/1/2019				8/1/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER				WATER				WATER				WATER				WATER				WATER			
		NY-AWQS[1]																																				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																																						
1,4-Dioxane	123-91-1	NS	ND		0.15	0.0339	ND		0.15	0.0339	ND		0.144	0.0326	-		-	-	-		-	-	ND		0.144	0.0326	ND		0.144	0.0326	ND		0.144	0.0326	ND		0.144	0.0326
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																																				
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	152		50	30.3	117		50	30.3	91.3		50	30.3	ND		1.86	1.13	ND		1.84	1.11	8.76	J	10	6.06	ND		1.82	1.1	ND		10	6.06	63.9		10	6.06
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	8150		50	33.3	4980		50	33.3	6870		50	33.3	ND		1.86	1.24	ND		1.84	1.22	89.4		10	6.66	ND		1.82	1.22	147		10	6.66	61.4		10	6.66
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		50	20.1	ND		50	20.1	ND		50	20.1	ND		1.86	0.747	ND		1.84	0.739	ND		10	4.02	ND		1.82	0.734	ND		10	4.02	ND		10	4.02
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		50	16.2	ND		50	16.2	ND		50	16.2	ND		1.86	0.602	ND		1.84	0.596	ND		10	3.24	ND		1.82	0.591	ND		10	3.24	ND		10	3.24
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	40.9	J	50	5.95	24.2	J	50	5.95	56.1		50	5.95	ND		1.86	0.221	ND		1.84	0.219	39.7		10	1.19	0.912	J	1.82	0.217	20.8		10	1.19	18.7		10	1.19
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	387		50	10.2	235		50	10.2	298		50	10.2	ND		1.86	0.379	ND		1.84	0.375	59.7		10	2.04	3.67		1.82	0.372	20.2		10	2.04	35.5		10	2.04
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		50	24.5	ND		50	24.5	ND		50	24.5	ND		1.86	0.911	ND		1.84	0.901	ND		10	4.9	ND		1.82	0.894	ND		10	4.9	ND		10	4.9
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		50	7.6	ND		50	7.6	ND		50	7.6	ND		1.86	0.282	ND		1.84	0.279	2.82	J	10	1.52	ND		1.82	0.277	ND		10	1.52	4.14	J	10	1.52
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		50	9.3	ND		50	9.3	ND		50	9.3	ND		1.86	0.346	ND		1.84	0.342	ND		10	1.86	ND		1.82	0.339	ND		10	1.86	ND		10	1.86
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	102		50	17.2	83.7		50	17.2	23.5	J	50	17.2	ND		1.86	0.639	ND		1.84	0.632	43		10	3.44	ND		1.82	0.628	21.7		10	3.44	17.3		10	3.44
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	405		50	5.63	276		50	5.63	282		50	5.63	ND		1.86	0.209	ND		1.84	0.207	84.9		10	1.13	0.555	J	1.82	0.205	22.1		10	1.13	45.9		10	1.13
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	1440		50	9.4	1410		50	9.4	814		50	9.4	ND		1.86	0.349	ND		1.84	0.346	959		10	1.88	9.75		1.82	0.343	318		10	1.88	511		10	1.88
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	1360		50	8.2	870		50	8.2	777		50	8.2	ND		1.86	0.305	0.423	J	1.84	0.301	184		10	1.64	2.19		1.82	0.299	98		10	1.64	93.1		10	1.64
Perfluorononanoic Acid (PFNA)	375-95-1	NS	61.9		50	7.8	39.7	J	50	7.8	34.5	J	50	7.8	ND		1.86	0.29	ND		1.84	0.287	7.4	J	10	1.56	ND		1.82	0.285	3.6	J	10	1.56	11.5		10	1.56
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		50	14.5	ND		50	14.5	ND		50	14.5	ND		1.86	0.539	ND		1.84	0.533	ND		10	2.9	ND		1.82	0.529	ND		10	2.9	8.62	J	10	2.9
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	**3240**		50	12.6	**3010**		50	12.6	**2200**		50	12.6	ND		1.86	0.468	ND		1.84	0.463	**2030**		10	2.52	12.3		1.82	0.46	**1420**		10	2.52	**1320**		10	2.52
Perfluorooctanoic Acid (PFOA)	335-67-1	70	**500**		50	5.9	**371**		50	5.9	**184**		50	5.9	ND		1.86	0.219	ND		1.84	0.217	**77.5**		10	1.18	0.777	J	1.82	0.215	28.5		10	1.18	47.7		10	1.18
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	1970		50	9.9	1190		50	9.9	1350		50	9.9	ND		1.86	0.368	ND		1.84	0.364	197		10	1.98	1.37	J	1.82	0.361	58.2		10	1.98	93.7		10	1.98
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		50	6.2	ND		50	6.2	ND		50	6.2	ND		1.86	0.23	ND		1.84	0.228	ND		10	1.24	ND		1.82	0.226	ND		10	1.24	ND		10	1.24
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		50	8.18	ND		50	8.18	ND		50	8.18	ND		1.86	0.304	ND		1.84	0.301	ND		10	1.64	ND		1.82	0.298	ND		10	1.64	ND		10	1.64
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		50	6.5	ND		50	6.5	ND		50	6.5	ND		1.86	0.242	ND		1.84	0.239	ND		10	1.3	ND		1.82	0.237	ND		10	1.3	ND		10	1.3
PFOA/PFOS, Total			3740		50	5.9	3380		50	5.9	2380		50	5.9	ND		1.86	0.219	ND		1.84	0.217	2110		10	1.18	13.1	J	1.82	0.215	1450		10	1.18	1370		10	1.18

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 24 - AOC-7, ARFF/Maintenance Bldg - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW100-190808				HVRA-FD01-190808			
		LAB ID:	L1935927-05				L1935927-06			
		COLLECTION DATE:	8/8/2019				8/8/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	**CAS**		**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
1,4 DIOXANE BY 8270D-SIM		**(ug/l)**								
1,4-Dioxane	123-91-1	NS	ND		0.15	0.0339	ND		0.15	0.0339
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		**(ng/l)**								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	331		10	6.06	344		1.92	1.16
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	39		1.8	1.2	48.2		1.92	1.28
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.8	0.726	ND		1.92	0.77
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	0.628	J	1.8	0.585	ND		1.92	0.621
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	15.2		1.8	0.215	15.5		1.92	0.228
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	75.9		1.8	0.368	77		1.92	0.391
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	2.64		1.8	0.884	3.97		1.92	0.939
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	28.9		1.8	0.274	32.9		1.92	0.291
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	0.487	J	1.8	0.336	0.456	J	1.92	0.356
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	7.56		1.8	0.621	9.04		1.92	0.659
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	102		1.8	0.203	101		1.92	0.216
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	368		1.8	0.339	370		1.92	0.36
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	222		1.8	0.296	229		1.92	0.314
Perfluorononanoic Acid (PFNA)	375-95-1	NS	8.67		1.8	0.282	8.28		1.92	0.299
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	23.8		1.8	0.523	20.8		1.92	0.556
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	**595**		1.8	0.455	**699**		1.92	0.483
Perfluorooctanoic Acid (PFOA)	335-67-1	70	47.1		1.8	0.213	48.1		1.92	0.226
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	258		1.8	0.357	260		1.92	0.379
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.8	0.224	ND		1.92	0.238
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.8	0.295	ND		1.92	0.313
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	2.09		1.8	0.235	2.73		1.92	0.249
PFOA/PFOS, Total			642		1.8	0.213	747		1.92	0.226

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 24A - AOC-7, ARFF/Maintenance Bldg - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1936143-02 R1				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
1,4 DIOXANE BY 8270D-SIM														
1,4-Dioxane	123-91-1	0.1	ND		0.00858	0.00219	-		-	-	-		-	-
Semivolatile Organics by GC/MS														
1,4-Dioxane	123-91-1	0.1	-		-	-	-		-	-	ND		0.078	0.034
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		**(ug/kg)**												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	42.6	J	1.04	0.298	-		-	-	ND		0.956	0.274
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	4.13	J	1.04	0.186	-		-	-	ND		0.956	0.172
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	0.279	J	1.04	0.088	-		-	-	ND		0.956	0.081
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.04	0.209	-		-	-	ND	J	0.956	0.193
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	0.103	J	1.04	0.04	-		-	-	ND		0.956	0.037
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	0.282	J	1.04	0.024	-		-	-	0.138	J	0.956	0.022
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	1.04		1.04	0.159	-		-	-	0.19	J	0.956	0.146
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	1.37		1.04	0.07	-		-	-	0.164	J	0.956	0.064
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	0.238	J	1.04	0.073	-		-	-	0.124	J	0.956	0.067
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	1.82		1.04	0.142	-		-	-	0.143	J	0.956	0.13
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.243	J	1.04	0.047	-		-	-	0.275	J	0.956	0.043
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	4.38	J	1.04	0.063	-		-	-	1.64		0.956	0.058
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	0.823	J	1.04	0.054	-		-	-	0.442	J	0.956	0.05
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.152	J	1.04	0.078	-		-	-	0.182	J	0.956	0.072
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	4.71		1.04	0.102	-		-	-	ND		0.956	0.094
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	369	E	1.04	0.135	363		5.18	0.674	36.8		0.956	0.124
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	0.438	J	1.04	0.043	-		-	-	0.287	J	0.956	0.04
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	0.767	J	1.04	0.048	-		-	-	0.416	J	0.956	0.044
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	0.237	J	1.04	0.056	-		-	-	0.074	J	0.956	0.052
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.04	0.212	-		-	-	ND		0.956	0.196
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	0.254	J	1.04	0.049	-		-	-	0.088	J	0.956	0.045
PFOA/PFOS, Total			363	J	1.04	0.043	-		-	-	37.1	J	0.956	0.04

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
R - Analytical results are from sample re-analysis.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 25 - AOC-7, ARFF/Maintenance Bldg - VOCs

		SAMPLE ID:	HVRA-EB01-190808				HVRA-MW100-190808				HVRA-FD01-190808				HVRA-LTB01-190807			
		LAB ID:	L1935927-07				L1935927-05				L1935927-06				L1935927-01			
		COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019				8/7/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER			
		NY-AWQS[1]																
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY GC/MS																		
1,1,2-Trichloroethane	79-00-5	1	ND		1.5	0.5	ND		1.5	0.5	ND		1.5	0.5	ND		1.5	0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ND		2.5	0.7	ND		2.5	0.7	ND		2.5	0.7	ND		2.5	0.7
1,2-Dibromoethane	106-93-4	0.0006	ND		2	0.65	ND		2	0.65	ND		2	0.65	ND		2	0.65
1,2-Dichloropropane	78-87-5	1	ND		1	0.14	ND		1	0.14	ND		1	0.14	ND		1	0.14
Acetone	67-64-1	50	9.1		5	1.5	13		5	1.5	8.6		5	1.5	7.2		5	1.5
Chloromethane	74-87-3	5	0.96	J	2.5	0.7	1.4	J	2.5	0.7	1.2	J	2.5	0.7	1.1	J	2.5	0.7
cis-1,3-Dichloropropene	10061-01-5	0.4	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14
Dichlorodifluoromethane	75-71-8	5	ND		5	1	ND		5	1	ND		5	1	ND		5	1
trans-1,3-Dichloropropene	10061-02-6	0.4	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16
Total VOCs			10.06	-	-	-	14.4	-	-	-	9.8	-	-	-	8.3	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value $\geq$ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 25A - AOC-7, ARFF/Maintenance Bldg - VOCs

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL			
		NY-UNRES[1]								
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
VOLATILE ORGANICS BY EPA 5035										
Acetone	67-64-1	0.05	0.019		0.0088	0.0042	0.0082	J	0.0097	0.0047
Methyl Acetate	79-20-9	NS	0.054		0.0035	0.00084	ND		0.0039	0.00092
Tetrachloroethene	127-18-4	1.3	0.00051		0.00044	0.00017	ND		0.00049	0.00019
Total VOCs			0.07351	-	-	-	0.0082	-	-	-

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 26 - AOC-7, ARFF/Maintenance Bldg - SVOCs

		SAMPLE ID:	HVRA-EB01-190808				HVRA-FD01-190808				HVRA-MW100-190808			
		LAB ID:	L1935927-07				L1935927-06				L1935927-05			
		COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS														
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44	ND		10	0.44	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41	ND		5	0.41	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6	ND		20	6.6	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93	ND		5	0.93	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6	ND		5	1.6	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81	ND		5	0.81	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1	ND		5	1.1	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8	ND		5	0.8	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76	ND		10	0.76	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5	ND		2	0.5	ND		2	0.5
Bis(2-ethylhexyl)phthalate	117-81-7	5	1.7	J	3	1.5	ND		3	1.5	ND		3	1.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69	ND		20	0.69	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77	ND		2	0.77	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57	ND		5	0.57	ND		5	0.57
Total SVOCs			1.7	-	-	-	-	-	-	-	-	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM														
2-Methylnaphthalene	91-57-6	NS	0.03	J	0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(a)anthracene	56-55-3	0.002	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(a)pyrene	50-32-8	ND	ND		0.1	0.02	ND		0.1	0.02	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Chrysene	218-01-9	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01	ND		0.8	0.01	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05	ND		0.5	0.05	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Naphthalene	91-20-3	10	0.08	J	0.1	0.05	ND		0.1	0.05	ND		0.1	0.05
Phenanthrene	85-01-8	50	ND		0.1	0.02	ND		0.1	0.02	0.03	J	0.1	0.02
Total SVOCs			0.11	-	-	-	-	-	-	-	0.03	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 26A - AOC-7, ARFF/Maintenance Bldg - SVOCs

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL			
		NY-UNRES[1]								
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
SEMIVOLATILE ORGANICS BY GC/MS										
Benzaldehyde	100-52-7	NS	ND		0.24	0.048	ND		0.23	0.048
Benzo(a)anthracene	56-55-3	1	0.029	J	0.11	0.02	0.069	J	0.1	0.02
Benzo(a)pyrene	50-32-8	1	ND		0.14	0.044	0.053	J	0.14	0.043
Benzo(b)fluoranthene	205-99-2	1	0.042	J	0.11	0.03	0.097	J	0.1	0.03
Benzo(ghi)perylene	191-24-2	100	0.029	J	0.14	0.021	0.056	J	0.14	0.021
Benzo(k)fluoranthene	207-08-9	0.8	ND		0.11	0.029	0.028	J	0.1	0.028
Chrysene	218-01-9	1	0.034	J	0.11	0.019	0.076	J	0.1	0.018
Fluoranthene	206-44-0	100	0.053	J	0.11	0.02	0.13		0.1	0.02
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.029	J	0.14	0.025	0.055	J	0.14	0.024
Phenanthrene	85-01-8	100	ND		0.11	0.022	0.046	J	0.1	0.021
Pyrene	129-00-0	100	0.047	J	0.11	0.018	0.12		0.1	0.018
Total SVOCs			0.263	-	-	-	0.73	-	-	-

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 27 - AOC-7, ARFF/Maintenance Bldg - PCBs

		SAMPLE ID:	HVRA-EB01-190808				HVRA-FD01-190808				HVRA-MW100-190808			
		LAB ID:	L1935927-07				L1935927-06				L1935927-05			
		COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC														
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032	ND		0.083	0.032	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 27A - AOC-7, ARFF/Maintenance Bldg - PCBs

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1936143-02 R1				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL			
		NY-UNRES[1]												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC														
PCBs, Total	1336-36-3		ND		0.0349	0.0031	-		-	-	ND		0.0349	0.0031

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 28 - AOC-7, ARFF/Maintenance Building - Pesticides

		SAMPLE ID:	HVRA-EB01-190808				HVRA-FD01-190808				HVRA-MW100-190808			
		LAB ID:	L1935927-07				L1935927-06				L1935927-05			
		COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC														
Aldrin	309-00-2	ND	ND		0.014	0.002	ND		0.014	0.002	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003	ND		0.014	0.003	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033	ND		0.143	0.033	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003	ND		0.029	0.003	ND		0.029	0.003
Endrin	72-20-8	ND	ND		0.029	0.003	ND		0.029	0.003	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045	ND		0.143	0.045	ND		0.143	0.045

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded gray indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 28A - AOC-7, ARFF/Maintenance Bldg - Pesticides

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL			
		NY-UNRES[1]								
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
ORGANOCHLORINE PESTICIDES BY GC										
4,4'-DDE	72-55-9	0.0033	0.00132	J	0.00171	0.000396	0.00113	J	0.00161	0.000373
4,4'-DDT	50-29-3	0.0033	0.00146	J	0.00321	0.00138	0.00285	JP	0.00302	0.0013

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
P - The RPD between the results for the two columns exceeds the method-specified criteria.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 29 - AOC-7, ARFF/Maintenance Bldg - Metals

		SAMPLE ID:	HVRA-EB01-190808				HVRA-FD01-190808				HVRA-MW100-190808			
		LAB ID:	L1935927-07				L1935927-06				L1935927-05			
		COLLECTION DATE:	8/8/2019				8/8/2019				8/8/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS[1]												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS														
Aluminum, Total	7429-90-5	NS	ND		10	3.27	6.18	J	10	3.27	10		10	3.27
Antimony, Total	7440-36-0	3	ND		4	0.42	0.76	J	4	0.42	ND		4	0.42
Arsenic, Total	7440-38-2	25	ND		0.5	0.16	0.39	J	0.5	0.16	0.32	J	0.5	0.16
Barium, Total	7440-39-3	1000	ND		0.5	0.17	15		0.5	0.17	15.62		0.5	0.17
Calcium, Total	7440-70-2	NS	202		100	39.4	36800		100	39.4	37400		100	39.4
Chromium, Total	7440-47-3	50	ND		1	0.17	0.57	J	1	0.17	0.69	J	1	0.17
Copper, Total	7440-50-8	200	ND		1	0.38	0.9	J	1	0.38	0.95	J	1	0.38
Iron, Total	7439-89-6	300	21	J	50	19.1	39.5	J	50	19.1	21.1	J	50	19.1
Magnesium, Total	7439-95-4	35000	ND		70	24.2	7690		70	24.2	7720		70	24.2
Manganese, Total	7439-96-5	300	ND		1	0.44	36.24		1	0.44	39.2		1	0.44
Nickel, Total	7440-02-0	100	ND		2	0.55	0.61	J	2	0.55	0.57	J	2	0.55
Potassium, Total	7440-09-7	NS	ND		100	30.9	3090		100	30.9	3160		100	30.9
Sodium, Total	7440-23-5	20000	ND		100	29.3	**134000**		100	29.3	**135000**		100	29.3
Thallium, Total	7440-28-0	0.5	ND		0.5	0.14	0.45	J	0.5	0.14	ND		0.5	0.14
GENERAL CHEMISTRY														
Cyanide, Total	57-12-5	200	ND		5	1	3	J	5	1	ND		5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 29A - AOC-7, ARFF/Maintenance Bldg - Metals

		SAMPLE ID:	HVRA-MW100-1.0				HVRA-MW100-6.0			
		LAB ID:	L1936143-02				L1934860-01			
		COLLECTION DATE:	8/12/2019				8/5/2019			
		SAMPLE DEPTH:	1.0' - 2.0'				6.0' - 7.0'			
		SAMPLE MATRIX:	SOIL				SOIL			
		NY-UNRES[1]								
ANALYTE	**CAS**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
TOTAL METALS										
Aluminum, Total	7429-90-5	NS	11300		8.6	2.32	9240		8.06	2.18
Antimony, Total	7440-36-0	NS	0.946	J	4.3	0.327	1.18	J	4.03	0.306
Arsenic, Total	7440-38-2	13	3.73		0.86	0.179	3.38		0.806	0.168
Barium, Total	7440-39-3	350	59.6		0.86	0.15	39.3		0.806	0.14
Beryllium, Total	7440-41-7	7.2	0.396	J	0.43	0.028	0.346	J	0.403	0.027
Cadmium, Total	7440-43-9	2.5	ND		0.86	0.084	1.73		0.806	0.079
Calcium, Total	7440-70-2	NS	809		8.6	3.01	3720		8.06	2.82
Chromium, Total	7440-47-3	30	10.6		0.86	0.083	17.8		0.806	0.077
Cobalt, Total	7440-48-4	NS	6.79		1.72	0.143	8.24		1.61	0.134
Copper, Total	7440-50-8	50	17.3		0.86	0.222	**66.8**		0.806	0.208
Iron, Total	7439-89-6	NS	19000		4.3	0.777	51300		40.3	7.28
Lead, Total	7439-92-1	63	57.8		4.3	0.231	**70**		4.03	0.216
Magnesium, Total	7439-95-4	NS	3320		8.6	1.32	5480		8.06	1.24
Manganese, Total	7439-96-5	1600	728		0.86	0.137	721		0.806	0.128
Mercury, Total	7439-97-6	0.18	0.094		0.068	0.044	0.178		0.067	0.044
Nickel, Total	7440-02-0	30	13.8		2.15	0.208	19.2		2.01	0.195
Potassium, Total	7440-09-7	NS	305		215	12.4	225		201	11.6
Selenium, Total	7782-49-2	3.9	ND		1.72	0.222	0.806	J	1.61	0.208
Sodium, Total	7440-23-5	NS	79.8	J	172	2.71	76.7	J	161	2.54
Thallium, Total	7440-28-0	NS	ND		1.72	0.271	0.572	J	1.61	0.254
Vanadium, Total	7440-62-2	NS	11.7		0.86	0.175	12.8		0.806	0.164
Zinc, Total	7440-66-6	109	76.6		4.3	0.252	**138**		4.03	0.236
GENERAL CHEMISTRY		**(mg/kg)**								
Moisture	NONE		-		-	-	-		-	-
Solids, Total	NONE		92.3		0.1	NA	94		0.1	NA

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
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mg/kg = ppm or parts per million
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Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 30 - AOC-7, ARFF/Maintenance Bldg - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MAINTBLDG-190807				HVRA-FD01-190807				HVRA-FTB01-190807				HVRA-LTB01-190807			
		LAB ID:	L1935927-03				L1935927-04				L1935927-02				L1935927-01			
		COLLECTION DATE:	8/7/2019				8/7/2019				8/7/2019				8/7/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER			
		NY-AWQS[1]																
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																		
1,4-Dioxane	123-91-1	NS	0.254		0.15	0.0339	0.284		0.15	0.0339	-		-	-	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.8	1.09	ND		1.94	1.18	ND		1.99	1.21	ND		1.97	1.19
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.8	1.2	ND		1.94	1.3	ND		1.99	1.33	ND		1.97	1.31
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.8	0.726	ND		1.94	0.782	ND		1.99	0.801	ND		1.97	0.791
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.8	0.585	ND		1.94	0.63	ND		1.99	0.645	ND		1.97	0.638
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.8	0.215	ND		1.94	0.232	ND		1.99	0.237	ND		1.97	0.234
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	2.34		1.8	0.368	2.45		1.94	0.397	ND		1.99	0.406	ND		1.97	0.402
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.8	0.884	ND		1.94	0.953	ND		1.99	0.976	ND		1.97	0.964
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.8	0.274	ND		1.94	0.296	ND		1.99	0.303	ND		1.97	0.299
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.8	0.336	ND		1.94	0.362	ND		1.99	0.37	ND		1.97	0.366
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.8	0.621	ND		1.94	0.669	ND		1.99	0.685	ND		1.97	0.677
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.8	0.203	0.377	J	1.94	0.219	ND		1.99	0.224	ND		1.97	0.222
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	1.18	J	1.8	0.339	1.1	J	1.94	0.366	ND		1.99	0.374	ND		1.97	0.37
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	0.83	J	1.8	0.296	0.895	J	1.94	0.319	ND		1.99	0.327	ND		1.97	0.323
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.8	0.282	ND		1.94	0.304	ND		1.99	0.311	ND		1.97	0.307
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.8	0.523	ND		1.94	0.564	ND		1.99	0.578	ND		1.97	0.571
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	ND		1.8	0.455	0.521	J	1.94	0.49	ND		1.99	0.502	ND		1.97	0.496
Perfluorooctanoic Acid (PFOA)	335-67-1	70	ND		1.8	0.213	0.506	J	1.94	0.23	ND		1.99	0.235	ND		1.97	0.232
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	1.03	J	1.8	0.357	1.13	J	1.94	0.385	ND		1.99	0.394	ND		1.97	0.39
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.8	0.224	ND		1.94	0.241	ND		1.99	0.247	ND		1.97	0.244
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.8	0.295	ND		1.94	0.318	ND		1.99	0.326	ND		1.97	0.322
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.8	0.235	ND		1.94	0.253	ND		1.99	0.259	ND		1.97	0.256
PFOA/PFOS, Total			ND		1.8	0.213	1.03	J	1.94	0.23	ND		1.99	0.235	ND		1.97	0.232

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 31 - AOC-7, ARFF/Maintenance Bldg - SVOCs

		SAMPLE ID:	HVRA-FD01-190807				HVRA-MAINTBLDG-190807			
		LAB ID:	L1935927-04				L1935927-03			
		COLLECTION DATE:	8/7/2019				8/7/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
SEMIVOLATILE ORGANICS BY GC/MS										
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5	ND		2	0.5
Bis(2-ethylhexyl)phthalate	117-81-7	5	ND		3	1.5	1.6	JB	3	1.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57	ND		5	0.57
Total SVOCs			-	-	-	-	1.6	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM										
Benzo(a)anthracene	56-55-3	0.002	ND		0.1	0.02	ND		0.1	0.02
Benzo(a)pyrene	50-32-8	ND	ND		0.1	0.02	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	ND		0.1	0.01	ND		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	ND		0.1	0.01	ND		0.1	0.01
Chrysene	218-01-9	0.002	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND		0.1	0.01	ND		0.1	0.01
Total SVOCs			-	-	-	-	-	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

B - The analyte was detected above the reporting limit in the associated method blank.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 32 - AOC-7, ARFF/Maintenance Bldg - PCBs

		SAMPLE ID:	HVRA-FD01-190807				HVRA-MAINTBLDG-190807			
		LAB ID:	L1935927-04				L1935927-03			
		COLLECTION DATE:	8/7/2019				8/7/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC										
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 33 - AOC-7, ARFF/Maintenance Bldg - Metals

		SAMPLE ID:	HVRA-FD01-190807				HVRA-MAINTBLDG-190807			
		LAB ID:	L1935927-04				L1935927-03			
		COLLECTION DATE:	8/7/2019				8/7/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS										
Antimony, Total	7440-36-0	3	0.72	J	4	0.42	1.25	J	4	0.42
Arsenic, Total	7440-38-2	25	7.18		0.5	0.16	8.1		0.5	0.16
Barium, Total	7440-39-3	1000	141.1		0.5	0.17	152.1		0.5	0.17
Calcium, Total	7440-70-2	NS	138000		100	39.4	148000		100	39.4
Copper, Total	7440-50-8	200	0.57	J	1	0.38	0.93	J	1	0.38
Iron, Total	7439-89-6	300	**436**		50	19.1	**434**		50	19.1
Magnesium, Total	7439-95-4	35000	**41000**		70	24.2	**42700**		70	24.2
Manganese, Total	7439-96-5	300	243.4		1	0.44	258.2		1	0.44
Nickel, Total	7440-02-0	100	1.24	J	2	0.55	1.12	J	2	0.55
Potassium, Total	7440-09-7	NS	2880		100	30.9	3040		100	30.9
Sodium, Total	7440-23-5	20000	**82900**		100	29.3	**86900**		100	29.3
Thallium, Total	7440-28-0	0.5	0.43	J	0.5	0.14	0.18	J	0.5	0.14
GENERAL CHEMISTRY										
Cyanide, Total	57-12-5	200	ND		5	1	ND		5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 34 - AOC-8, Fire Pond - PFAS and 1,4-D

		SAMPLE ID:	FIRE POND-01-W				FIRE POND-02-W				FIELD BLANK				TRIP BLANK			
		LAB ID:	L1932867-08				L1932867-10				L1932867-11				L1932867-12			
		COLLECTION DATE:	7/24/2019				7/24/2019				7/24/2019				7/24/2019			
		SAMPLE DEPTH:																
		NY-AWQS[1]	WATER				WATER				WATER				WATER			
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																		
1,4-Dioxane	123-91-1		ND		0.163	0.0368	ND		0.6	0.136	-		-	-	-	-	-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	6.36		1.82	1.1	5.28		1.79	1.09	ND		2.08	1.26	ND	-	1.78	1.08
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	292		1.82	1.22	226		1.79	1.19	ND		2.08	1.39	ND	-	1.78	1.18
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.82	0.734	ND		1.79	0.72	ND		2.08	0.838	ND	-	1.78	0.715
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.82	0.591	ND		1.79	0.581	ND		2.08	0.675	ND	-	1.78	0.576
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	6.27		1.82	0.217	6.39		1.79	0.213	ND		2.08	0.248	ND	-	1.78	0.212
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	36.2		1.82	0.372	35.1		1.79	0.366	ND		2.08	0.425	ND	-	1.78	0.363
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.82	0.894	ND		1.79	0.878	ND		2.08	1.02	ND	-	1.78	0.872
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.945	J	1.82	0.277	1.03	J	1.79	0.272	ND		2.08	0.317	ND	-	1.78	0.27
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.82	0.339	ND		1.79	0.333	ND		2.08	0.388	ND	-	1.78	0.331
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	2.7		1.82	0.628	1.79		1.79	0.616	ND		2.08	0.717	ND	-	1.78	0.612
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	24.4		1.82	0.205	22.8		1.79	0.202	ND		2.08	0.234	ND	-	1.78	0.2
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	83.4		1.82	0.343	78		1.79	0.337	ND		2.08	0.392	ND	-	1.78	0.334
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	70.4		1.82	0.299	65.2		1.79	0.294	ND		2.08	0.342	ND	-	1.78	0.292
Perfluorononanoic Acid (PFNA)	375-95-1	NS	4.46		1.82	0.285	4.26		1.79	0.28	ND		2.08	0.325	ND	-	1.78	0.278
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.82	0.529	ND		1.79	0.52	ND		2.08	0.604	ND	-	1.78	0.516
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	214		1.82	0.46	195		1.79	0.452	ND		2.08	0.525	ND	-	1.78	0.448
Perfluorooctanoic Acid (PFOA)	335-67-1	70	26.1		1.82	0.215	23.8		1.79	0.211	1.24		2.08	0.246	0.886	J	1.78	0.21
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	107		1.82	0.361	99.6		1.79	0.355	ND		2.08	0.412	ND	-	1.78	0.352
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.82	0.226	ND		1.79	0.222	ND		2.08	0.258	ND	-	1.78	0.221
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.82	0.298	ND		1.79	0.293	ND		2.08	0.341	ND	-	1.78	0.291
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.82	0.237	ND		1.79	0.233	ND		2.08	0.412	ND	-	1.78	0.231
PFOA/PFOS, Total			240		1.82	0.215	219		1.79	0.211	1.24	J	2.08	0.246	0.886	J	1.78	0.21

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 34A - AOC-8, Fire Pond - PFAS and 1,4-D

			SAMPLE ID:	FIRE POND-01-S				FIRE POND-02-S			
			LAB ID:	L1932867-07				L1932867-09			
			COLLECTION DATE:	7/24/2019				7/24/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES[1]								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM											
1,4-Dioxane	123-91-1	NS	0.1	ND		0.0412	0.0105	ND		0.0345	0.00881
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)	(ug/kg)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	NS	ND		1.29	0.37	ND		1.21	0.347
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	NS	ND		1.29	0.231	ND		1.21	0.217
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	NS	ND		1.29	0.109	ND	J	1.21	0.102
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	NS	ND		1.29	0.26	ND	J	1.21	0.244
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	NS	ND		1.29	0.05	ND		1.21	0.047
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	NS	0.245	J	1.29	0.029	0.342	J	1.21	0.027
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	NS	0.345	J	1.29	0.197	ND		1.21	0.185
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	NS	0.122	J	1.29	0.086	0.1	J	1.21	0.081
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	NS	0.128	J	1.29	0.09	ND		1.21	0.085
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	NS	ND		1.29	0.176	ND		1.21	0.165
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	NS	0.16	J	1.29	0.058	0.215	J	1.21	0.055
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	NS	2.27		1.29	0.078	0.208	J	1.21	0.073
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	NS	0.342	J	1.29	0.068	0.218	J	1.21	0.064
Perfluorononanoic Acid (PFNA)	375-95-1	NS	NS	0.147	J	1.29	0.097	0.206	J	1.21	0.091
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	NS	ND		1.29	0.126	ND		1.21	0.118
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	NS	11.6		1.29	0.167	7.83		1.21	0.157
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	NS	0.213	J	1.29	0.054	0.212	J	1.21	0.051
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	NS	0.422	J	1.29	0.059	0.737	J	1.21	0.056
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	NS	ND		1.29	0.07	ND	J	1.21	0.065
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	NS	ND		1.29	0.263	ND	J	1.21	0.247
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	NS	0.243	J	1.29	0.06	0.132	J	1.21	0.057
PFOA/PFOS, Total		NS	NS	11.8	J	1.29	0.054	8.04	J	1.21	0.051
GENERAL CHEMISTRY		(mg/kg)	(mg/kg)								
Solids, Total	NONE	NS	NS	72.9		0.1	0.1	82.3		0.1	0.1

Notes:

The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.

J - Estimated Value $\geq$ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

NA denotes Not Analyzed

ND denotes Non Detect

mg/kg = ppm or parts per million

ug/kg = ppb or parts per billion

Table 35 - AOC-9, North/South Runway - PFAS and 1,4-D

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM										
1,4-Dioxane	123-91-1	NS	ND		0.15	0.0339	ND		0.156	0.0353
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.95	1.18	ND		1.84	1.12
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.95	1.3	ND		1.84	1.23
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.95	0.785	ND		1.84	0.742
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.95	0.633	ND		1.84	0.598
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.95	0.232	0.819	J	1.84	0.22
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	1.72	J	1.95	0.398	1.39	J	1.84	0.376
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.95	0.957	ND		1.84	0.904
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.95	0.297	ND		1.84	0.28
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.95	0.363	ND		1.84	0.343
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.95	0.672	ND		1.84	0.635
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.762	J	1.95	0.22	0.819	J	1.84	0.208
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.95	0.367	4.74		1.84	0.347
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	1.41	J	1.95	0.32	1.26	J	1.84	0.302
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.95	0.305	ND		1.84	0.288
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	0.684	J	1.95	0.566	ND		1.84	0.535
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	1.17	J	1.95	0.492	1.32	J	1.84	0.465
Perfluorooctanoic Acid (PFOA)	335-67-1	70	1.26	J	1.95	0.23	2.1		1.84	0.218
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	1.38	J	1.95	0.387	1.15	J	1.84	0.365
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.95	0.242	ND		1.84	0.229
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.95	0.32	ND		1.84	0.302
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.95	0.254	ND		1.84	0.24
PFOA/PFOS, Total			2.43	J	1.95	0.23	3.42	J	1.84	0.218

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 35A - AOC-9, North/South Runway - PFAS and 1,4-D

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 2.0'				10.0 - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																														
1,4-Dioxane	123-91-1	0.1	-		-	-	ND		0.0077	0.00196	ND		0.00753	0.00192	-		-	-	ND		0.0103	0.00263	-		-	-	ND		0.00767	0.00196
Semivolatile Organics by GC/MS																														
1,4-Dioxane	123-91-1	0.1	ND		0.08	0.035	-		-	-	-		-	-	ND		0.076	0.033	-		-	-	ND		0.077	0.034	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)																												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.09	0.313	ND		0.975	0.28	ND		0.976	0.28	ND		1	0.288	ND		1.47	0.422	ND		0.989	0.284	ND		1.02	0.292
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.09	0.196	ND		0.975	0.175	ND		0.976	0.175	ND		1	0.18	ND		1.47	0.264	8.28		0.989	0.178	ND		1.02	0.182
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.09	0.092	ND		0.975	0.082	ND	J	0.976	0.082	ND	J	1	0.085	ND		1.47	0.124	ND		0.989	0.084	ND		1.02	0.086
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND	J	1.09	0.22	ND	J	0.975	0.196	ND	J	0.976	0.197	ND	J	1	0.202	ND	J	1.47	0.296	ND		0.989	0.199	ND		1.02	0.205
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.09	0.043	ND		0.975	0.038	ND		0.976	0.038	ND		1	0.039	ND		1.47	0.057	ND		0.989	0.039	ND		1.02	0.04
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	ND		1.09	0.025	0.176	J	0.975	0.022	0.06	J	0.976	0.022	ND		1	0.023	0.252	J	1.47	0.033	ND		0.989	0.022	0.093	J	1.02	0.023
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.09	0.167	ND		0.975	0.149	ND		0.976	0.149	ND		1	0.153	ND		1.47	0.225	ND		0.989	0.151	ND		1.02	0.155
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.09	0.073	0.089	J	0.975	0.065	ND		0.976	0.065	ND		1	0.067	0.14	J	1.47	0.099	ND		0.989	0.066	0.075	J	1.02	0.068
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.09	0.076	ND		0.975	0.068	ND		0.976	0.068	ND	J	1	0.07	ND		1.47	0.103	ND		0.989	0.069	ND		1.02	0.071
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.09	0.149	ND		0.975	0.133	ND		0.976	0.133	ND		1	0.137	ND		1.47	0.201	ND		0.989	0.135	ND		1.02	0.139
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.09	0.049	0.174	J	0.975	0.044	ND		0.976	0.044	ND		1	0.045	0.25	J	1.47	0.066	ND		0.989	0.045	0.085	J	1.02	0.046
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.09	0.066	0.172	J	0.975	0.059	0.063	J	0.976	0.059	ND		1	0.061	ND		1.47	0.089	ND		0.989	0.06	ND		1.02	0.062
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	ND		1.09	0.057	0.137	J	0.975	0.051	0.082	J	0.976	0.051	ND		1	0.053	0.244	J	1.47	0.077	ND		0.989	0.052	0.144	J	1.02	0.053
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.09	0.082	0.146	J	0.975	0.073	ND		0.976	0.073	ND		1	0.075	0.391	J	1.47	0.11	ND		0.989	0.074	0.239	J	1.02	0.076
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.09	0.107	ND		0.975	0.096	ND		0.976	0.096	ND		1	0.098	ND		1.47	0.144	ND		0.989	0.097	ND		1.02	0.1
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	ND		1.09	0.142	1.29		0.975	0.127	0.213	J	0.976	0.127	ND		1	0.13	0.958	J	1.47	0.191	ND		0.989	0.128	0.55	J	1.02	0.132
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	ND		1.09	0.046	0.415	J	0.975	0.041	0.127	J	0.976	0.041	ND		1	0.042	0.85	J	1.47	0.062	ND		0.989	0.041	0.57	J	1.02	0.043
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	ND		1.09	0.05	0.118	J	0.975	0.045	0.045	J	0.976	0.045	ND		1	0.046	0.178	J	1.47	0.068	ND		0.989	0.046	0.089	J	1.02	0.047
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.09	0.059	ND		0.975	0.053	ND		0.976	0.053	ND		1	0.054	ND		1.47	0.079	ND		0.989	0.053	ND		1.02	0.055
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.09	0.223	ND		0.975	0.199	ND		0.976	0.2	ND		1	0.205	ND		1.47	0.301	ND		0.989	0.202	ND		1.02	0.208
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.09	0.051	0.08	J	0.975	0.046	ND		0.976	0.046	ND	J	1	0.047	0.2	J	1.47	0.069	ND		0.989	0.046	0.053	J	1.02	0.048
PFOA/PFOS, Total			ND		1.09	0.046	1.71	J	0.975	0.041	0.34	J	0.976	0.041	ND		1	0.042	1.81	J	1.47	0.062	ND		0.989	0.041	1.12	J	1.02	0.043

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 36 - AOC-9, North/South Runway, VOCs

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY GC/MS										
1,1,2-Trichloroethane	79-00-5	1	ND		1.5	0.5	ND		1.5	0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ND		2.5	0.7	ND		2.5	0.7
1,2-Dibromoethane	106-93-4	0.0006	ND		2	0.65	ND		2	0.65
Acetone	67-64-1	50	18		5	1.5	11		5	1.5
cis-1,3-Dichloropropene	10061-01-5	0.4	ND		0.5	0.14	ND		0.5	0.14
Dichlorodifluoromethane	75-71-8	5	ND		5	1	ND		5	1
trans-1,3-Dichloropropene	10061-02-6	0.4	ND		0.5	0.16	ND		0.5	0.16
Total VOCs			18	-	-	-	11	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 36A - AOC-9, North/South Runway - VOCs

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 2.0'				10.0' - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																														
Acetone	67-64-1	0.05	**0.054**		0.01	0.0048	ND		0.011	0.0051	ND		0.0095	0.0046	0.013		0.0095	0.0046	ND		0.014	0.0066	ND		0.0096	0.0046	ND		0.0094	0.0045
Methyl Acetate	79-20-9	NS	0.038		0.004	0.00096	ND		0.0042	0.001	ND		0.0038	0.0009	ND		0.0038	0.0009	ND		0.0054	0.0013	ND		0.0038	0.00091	ND		0.0037	0.00089
Tetrachloroethene	127-18-4	1.3	ND		0.0005	0.0002	0.001		0.00053	0.00021	0.00035	J	0.00048	0.00019	ND		0.00047	0.00018	0.00065	J	0.00068	0.00027	ND		0.00048	0.00019	0.00071		0.00047	0.00018
Total VOCs			0.092	-	-	-	0.001	-	-	-	0.00035	-	-	-	0.013	-	-	-	0.00065	-	-	-	-	-	-	-	0.00071	-	-	-

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
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Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 37 - AOC-9, North/South Runway - SVOCs

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[(1)]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS										
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND		10	0.44	ND		10	0.44
2,4-Dichlorophenol	120-83-2	1	ND		5	0.41	ND		5	0.41
2,4-Dinitrophenol	51-28-5	10	ND		20	6.6	ND		20	6.6
2,4-Dinitrotoluene	121-14-2	5	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	5	ND		5	0.93	ND		5	0.93
2-Nitroaniline	88-74-4	5	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	5	ND		5	1.6	ND		5	1.6
3-Nitroaniline	99-09-2	5	ND		5	0.81	ND		5	0.81
4-Chloroaniline	106-47-8	5	ND		5	1.1	ND		5	1.1
4-Nitroaniline	100-01-6	5	ND		5	0.8	ND		5	0.8
Atrazine	1912-24-9	7.5	ND		10	0.76	ND		10	0.76
Bis(2-chloroethoxy)methane	111-91-1	5	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	1	ND		2	0.5	ND		2	0.5
Hexachlorocyclopentadiene	77-47-4	5	ND		20	0.69	ND		20	0.69
Nitrobenzene	98-95-3	0.4	ND		2	0.77	ND		2	0.77
Phenol	108-95-2	1	ND		5	0.57	ND		5	0.57
Total SVOCs			-	-	-	-	-	-	-	-
SEMIVOLATILE ORGANICS BY GC/MS-SIM										
Benzo(a)anthracene	56-55-3	0.002	**0.04**	J	0.1	0.02	**0.02**	J	0.1	0.02
Benzo(a)pyrene	50-32-8	ND	**0.03**	J	0.1	0.02	**0.02**	J	0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.002	**0.03**	J	0.1	0.01	**0.06**	J	0.1	0.01
Benzo(ghi)perylene	191-24-2	NS	0.03	J	0.1	0.01	0.05	J	0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.002	**0.03**	J	0.1	0.01	**0.02**	J	0.1	0.01
Chrysene	218-01-9	0.002	**0.02**	J	0.1	0.01	ND		0.1	0.01
Dibenzo(a,h)anthracene	53-70-3	NS	0.02	J	0.1	0.01	ND		0.1	0.01
Fluoranthene	206-44-0	50	0.02	J	0.1	0.02	ND		0.1	0.02
Hexachlorobenzene	118-74-1	0.04	ND		0.8	0.01	ND		0.8	0.01
Hexachlorobutadiene	87-68-3	0.5	ND		0.5	0.05	ND		0.5	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	**0.03**	J	0.1	0.01	**0.05**	J	0.1	0.01
Naphthalene	91-20-3	10	ND		0.1	0.05	0.06	J	0.1	0.05
Phenanthrene	85-01-8	50	0.04	J	0.1	0.02	0.02	J	0.1	0.02
Total SVOCs			0.29	-	-	-	0.3	-	-	-

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

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Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 37A - AOC-9, North/South Runway - SVOCs

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 1.5'				10.0' - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS																														
Benzaldehyde	100-52-7	NS	ND		0.24	0.05	0.063	J	0.23	0.048	ND		0.23	0.047	ND		0.24	0.05	0.29	J	0.34	0.069	ND		0.23	0.048	0.14	J	0.25	0.051
Benzo(a)anthracene	56-55-3	1	ND		0.11	0.021	ND		0.11	0.02	ND		0.1	0.02	ND		0.11	0.021	ND		0.15	0.029	ND		0.11	0.02	ND		0.11	0.021
Benzo(a)pyrene	50-32-8	1	ND		0.15	0.045	ND		0.14	0.043	ND		0.14	0.042	ND		0.15	0.045	ND		0.2	0.062	ND		0.14	0.043	ND		0.15	0.046
Benzo(b)fluoranthene	205-99-2	1	ND		0.11	0.031	ND		0.11	0.03	ND		0.1	0.029	ND		0.11	0.031	ND		0.15	0.043	ND		0.11	0.03	ND		0.11	0.032
Benzo(ghi)perylene	191-24-2	100	ND		0.15	0.022	ND		0.14	0.021	ND		0.14	0.02	ND		0.15	0.022	ND		0.2	0.03	ND		0.14	0.021	ND		0.15	0.022
Benzo(k)fluoranthene	207-08-9	0.8	ND		0.11	0.029	ND		0.11	0.028	ND		0.1	0.028	ND		0.11	0.029	ND		0.15	0.041	ND		0.11	0.028	ND		0.11	0.03
Chrysene	218-01-9	1	ND		0.11	0.019	ND		0.11	0.018	ND		0.1	0.018	ND		0.11	0.019	ND		0.15	0.026	ND		0.11	0.018	ND		0.11	0.02
Fluoranthene	206-44-0	100	ND		0.11	0.021	ND		0.11	0.02	ND		0.1	0.02	ND		0.11	0.021	0.039	J	0.15	0.029	ND		0.11	0.02	0.034	J	0.11	0.022
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	ND		0.15	0.026	ND		0.14	0.025	ND		0.14	0.024	ND		0.15	0.026	ND		0.2	0.035	ND		0.14	0.025	ND		0.15	0.026
Phenanthrene	85-01-8	100	ND		0.11	0.022	ND		0.11	0.022	ND		0.1	0.021	ND		0.11	0.022	ND		0.15	0.031	ND		0.11	0.022	ND		0.11	0.023
Pyrene	129-00-0	100	ND		0.11	0.018	ND		0.11	0.018	ND		0.1	0.017	ND		0.11	0.018	0.033	J	0.15	0.025	ND		0.11	0.018	0.031	J	0.11	0.019
Total SVOCs			-	-	-	-	0.063	-	-	-	-	-	-	-	-	-	-	-	0.362	-	-	-	-	-	-	-	0.205	-	-	-

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 38 - AOC-9, North/South Runway - PCBs

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC										
PCBs, Total	1336-36-3	0.09*	ND		0.083	0.032	ND		0.083	0.032

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

* - Applies to the sum of these substances.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 38A - AOC-9, North/South Runway - PCBs

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 2.0'				10.0' - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
POLYCHLORINATED BIPHENYLS BY GC																														
PCBs, Total	1336-36-3		ND		0.0368	0.00327	ND		0.0356	0.00316	ND		0.0352	0.00313	ND		0.0355	0.00315	ND		0.0504	0.00448	ND		0.0355	0.00315	ND		0.0376	0.00334

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 39 - AOC-9, North/South Runway - Pesticides

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[1]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC										
Aldrin	309-00-2	ND	ND		0.014	0.002	ND		0.014	0.002
Alpha-BHC	319-84-6	0.01	ND		0.014	0.003	ND		0.014	0.003
Chlordane	57-74-9	0.05	ND		0.143	0.033	ND		0.143	0.033
Dieldrin	60-57-1	0.004	ND		0.029	0.003	ND		0.029	0.003
Endrin	72-20-8	ND	ND		0.029	0.003	ND		0.029	0.003
Toxaphene	8001-35-2	0.06	ND		0.143	0.045	ND		0.143	0.045

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded gray indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 39A - AOC-9, North/South Runway - Pesticides

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 1.5'				10.0' - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ORGANOCHLORINE PESTICIDES BY GC																														
4,4'-DDE	72-55-9	0.0033	ND		0.00175	0.000404	ND		0.00172	0.000398	ND		0.00167	0.000387	ND		0.00176	0.000408	0.000886	JP	0.00241	0.000557	ND		0.00167	0.000387	0.00052	J	0.0018	0.000415
4,4'-DDT	50-29-3	0.0033	ND		0.00328	0.00141	ND		0.00323	0.00138	ND		0.00314	0.00134	ND		0.0033	0.00142	ND		0.00451	0.00194	ND		0.00314	0.00135	ND		0.00336	0.00144

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
P - The RPD between the results for the two columns exceeds the method-specified criteria.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 40 - AOC-9, North/South Runway - Metals

		SAMPLE ID:	HVRA-MW102-190809				HVRA-MW103-190809			
		LAB ID:	L1935927-10				L1935927-12			
		COLLECTION DATE:	8/9/2019				8/9/2019			
		SAMPLE MATRIX:	WATER				WATER			
		NY-AWQS[(1)]								
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS										
Aluminum, Total	7429-90-5	NS	472		10	3.27	172		10	3.27
Antimony, Total	7440-36-0	3	0.52	J	4	0.42	ND		4	0.42
Arsenic, Total	7440-38-2	25	1.52		0.5	0.16	4.79		0.5	0.16
Barium, Total	7440-39-3	1000	70.84		0.5	0.17	53.8		0.5	0.17
Cadmium, Total	7440-43-9	5	0.1	J	0.2	0.05	ND		0.2	0.05
Calcium, Total	7440-70-2	NS	206000		100	39.4	72200		100	39.4
Chromium, Total	7440-47-3	50	1.73		1	0.17	0.7	J	1	0.17
Cobalt, Total	7440-48-4	NS	6.3		0.5	0.16	1.14		0.5	0.16
Copper, Total	7440-50-8	200	2.74		1	0.38	1.17		1	0.38
Iron, Total	7439-89-6	300	**2000**		50	19.1	**7800**		50	19.1
Lead, Total	7439-92-1	25	1.13		1	0.34	0.75	J	1	0.34
Magnesium, Total	7439-95-4	35000	**66800**		70	24.2	16900		70	24.2
Manganese, Total	7439-96-5	300	**9436**		1	0.44	**3741**		1	0.44
Nickel, Total	7440-02-0	100	11.34		2	0.55	0.81	J	2	0.55
Potassium, Total	7440-09-7	NS	3520		100	30.9	1550		100	30.9
Sodium, Total	7440-23-5	20000	15900		100	29.3	**68500**		100	29.3
Thallium, Total	7440-28-0	0.5	0.16	J	0.5	0.14	ND		0.5	0.14
Zinc, Total	7440-66-6	2000	13.36		10	3.41	4.14	J	10	3.41
GENERAL CHEMISTRY										
Cyanide, Total	57-12-5	200	3	J	5	1	ND		5	1

Notes:

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 40A - AOC-9, North/South Runway - Metals

		SAMPLE ID:	HVRA-FD01-190806				HVRA-MW102-0.5				HVRA-MW102-2.0				HVRA-MW102-4.5				HVRA-MW103-0.5				HVRA-MW103-10.0				HVRA-MW103-2.0			
		LAB ID:	L1935085-05				L1936143-07				L1936143-08				L1935085-04				L1936143-12				L1935085-06				L1936143-13			
		COLLECTION DATE:	8/6/2019				8/12/2019				8/12/2019				8/6/2019				8/12/2019				8/6/2019				8/12/2019			
		SAMPLE DEPTH:	FD of MW102-4.5				0.5' - 2.0'				2.0' - 3.0'				4.5' - 5.5'				0.5' - 2.0'				10.0' - 11.0'				2.0' - 3.0'			
		SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
		NY-UNRES[1]																												
ANALYTE	CAS		Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS		(mg/kg)																												
Aluminum, Total	7429-90-5	NS	11400		8.64	2.33	9550		8.59	2.32	11200		8.41	2.27	11000		8.86	2.39	15500		12	3.26	10800		8.28	2.24	10200		8.91	2.41
Antimony, Total	7440-36-0	NS	1.18	J	4.32	0.328	0.834	J	4.3	0.326	1.06	J	4.21	0.32	1.35	J	4.43	0.337	1.2	J	6.03	0.458	1.32	J	4.14	0.315	0.918	J	4.46	0.339
Arsenic, Total	7440-38-2	13	4.53		0.864	0.18	3.15		0.859	0.179	4.34		0.841	0.175	4.67		0.886	0.184	5.53		1.2	0.251	5.06		0.828	0.172	3.8		0.891	0.185
Barium, Total	7440-39-3	350	50		0.864	0.15	42.4		0.859	0.15	41.2		0.841	0.146	44.1		0.886	0.154	54.7		1.2	0.21	43.1		0.828	0.144	36.8		0.891	0.155
Beryllium, Total	7440-41-7	7.2	0.363	J	0.432	0.029	0.37	J	0.43	0.028	0.387	J	0.421	0.028	0.363	J	0.443	0.029	0.494	J	0.603	0.04	0.406	J	0.414	0.027	0.365	J	0.446	0.029
Cadmium, Total	7440-43-9	2.5	ND		0.864	0.085	ND		0.859	0.084	ND		0.841	0.083	ND		0.886	0.087	ND		1.2	0.118	ND		0.828	0.081	ND		0.891	0.087
Calcium, Total	7440-70-2	NS	21900		8.64	3.02	1410		8.59	3.01	8520		8.41	2.94	34200		8.86	3.1	3610		12	4.22	22800		8.28	2.9	2360		8.91	3.12
Chromium, Total	7440-47-3	30	14.1		0.864	0.083	10.6		0.859	0.083	15.8		0.841	0.081	13.3		0.886	0.085	15.8		1.2	0.116	14		0.828	0.08	11.6		0.891	0.086
Cobalt, Total	7440-48-4	NS	9.32		1.73	0.143	6.46		1.72	0.143	9.48		1.68	0.14	9.42		1.77	0.147	10.5		2.41	0.2	10.6		1.66	0.138	7.98		1.78	0.148
Copper, Total	7440-50-8	50	29.4		0.864	0.223	20.1		0.859	0.222	26.5		0.841	0.217	27.5		0.886	0.228	32		1.2	0.311	25.5		0.828	0.214	24		0.891	0.23
Iron, Total	7439-89-6	NS	25000		4.32	0.78	17400		4.3	0.776	21800		4.21	0.76	24300		4.43	0.8	29400		6.03	1.09	23600		4.14	0.748	19700		4.46	0.805
Lead, Total	7439-92-1	63	9.87		4.32	0.232	13.2		4.3	0.23	10.9		4.21	0.226	9.85		4.43	0.237	25.5		6.03	0.323	10.7		4.14	0.222	19.7		4.46	0.239
Magnesium, Total	7439-95-4	NS	7590		8.64	1.33	3370		8.59	1.32	5080		8.41	1.3	7670		8.86	1.36	6400		12	1.86	9470		8.28	1.28	4280		8.91	1.37
Manganese, Total	7439-96-5	1600	551		0.864	0.137	415		0.859	0.137	636		0.841	0.134	657		0.886	0.141	974		1.2	0.192	730		0.828	0.132	573		0.891	0.142
Mercury, Total	7439-97-6	0.18	ND		0.071	0.046	ND		0.068	0.044	ND		0.067	0.044	ND		0.071	0.046	ND		0.097	0.063	ND		0.07	0.046	ND		0.072	0.047
Nickel, Total	7440-02-0	30	19.2		2.16	0.209	14.5		2.15	0.208	19.9		2.1	0.204	18.9		2.21	0.214	22.3		3.01	0.292	20.5		2.07	0.2	17.2		2.23	0.216
Potassium, Total	7440-09-7	NS	820		216	12.4	358		215	12.4	448		210	12.1	850		221	12.8	519		301	17.4	866		207	11.9	376		223	12.8
Selenium, Total	7782-49-2	3.9	ND		1.73	0.223	ND		1.72	0.222	ND		1.68	0.217	ND		1.77	0.228	ND		2.41	0.311	ND		1.66	0.214	ND		1.78	0.23
Sodium, Total	7440-23-5	NS	45.9	J	173	2.72	19.4	J	172	2.71	29.2	J	168	2.65	49.2	J	177	2.79	37.1	J	241	3.8	52.4	J	166	2.61	23.2	J	178	2.81
Thallium, Total	7440-28-0	NS	ND		1.73	0.272	ND		1.72	0.271	ND		1.68	0.265	ND		1.77	0.279	ND		2.41	0.38	ND		1.66	0.261	ND		1.78	0.281
Vanadium, Total	7440-62-2	NS	13.9		0.864	0.175	14		0.859	0.174	13.2		0.841	0.171	13.4		0.886	0.18	20.1		1.2	0.245	13.4		0.828	0.168	14.9		0.891	0.181
Zinc, Total	7440-66-6	109	59.5		4.32	0.253	46.1		4.3	0.252	57		4.21	0.246	57.4		4.43	0.26	75.5		6.03	0.353	56.3		4.14	0.243	60.3		4.46	0.261
GENERAL CHEMISTRY		(mg/kg)																												
Moisture	NONE		11.2		0.1	NA	-		-	-	-		-	-	10.9		0.1	NA	-		-	-	9.1		0.1	NA	-	-	-	-
Solids, Total	NONE		88.8		0.1	NA	92.8		0.1	NA	93.8		0.1	NA	89.1		0.1	NA	65.2		0.1	NA	90.9		0.1	NA	87.1		0.1	NA

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
B - The analyte was detected above the reporting limit in the associated method blank.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
mg/kg = ppm or parts per million
ug/kg = ppb or parts per billion
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 41 - Offsite - PFAS and 1,4-D

		SAMPLE ID:	HVRA-1581_RT_376-190904				HVRA-1601_RT376_190906				HVRA-1610_RT_376-190904				HVRA-2_HACKENSACK-190906				HVRA-7_HACKENSACK_HTS_RD-190904				HVRA-FTB01-190904				LTB01-190906			
		LAB ID:	L1940308-01				L1940894-01				L1940308-04				L1940894-02				L1940308-02				L1940308-03				L1940894-03			
		COLLECTION DATE:	9/4/2019				9/6/2019				9/4/2019				9/6/2019				9/4/2019				9/4/2019				9/6/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER				WATER				WATER				WATER			
		NY-AWQS[1]																												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																														
1,4-Dioxane	123-91-1	NS	0.216		0.144	0.0326	ND		0.16	0.0361	ND		0.139	0.0314	ND		0.156	0.0353	ND		0.144	0.0326	-	-	-	-	-	-	-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.8	1.09	ND		1.85	1.12	ND		1.84	1.11	ND		1.91	1.16	ND		1.84	1.12	ND		1.94	1.17	ND		1.79	1.09
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.8	1.2	ND		1.85	1.23	ND		1.84	1.22	ND		1.91	1.27	ND		1.84	1.23	ND		1.94	1.29	ND		1.79	1.19
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.8	0.723	ND		1.85	0.744	ND		1.84	0.739	ND		1.91	0.767	ND		1.84	0.742	ND		1.94	0.779	ND		1.79	0.72
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.8	0.583	ND		1.85	0.6	ND		1.84	0.596	ND		1.91	0.618	ND		1.84	0.598	ND		1.94	0.628	ND		1.79	0.581
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	7.48		1.8	0.214	0.407	J	1.85	0.22	ND		1.84	0.219	5.92		1.91	0.227	9.01		1.84	0.22	ND		1.94	0.231	ND		1.79	0.213
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	12.8		1.8	0.367	1.78	J	1.85	0.378	1.33	J	1.84	0.375	8.25		1.91	0.389	8.38		1.84	0.376	ND		1.94	0.395	ND		1.79	0.366
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.8	0.881	ND		1.85	0.907	ND		1.84	0.901	ND		1.91	0.935	ND		1.84	0.904	ND		1.94	0.95	ND		1.79	0.878
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.8	0.273	ND		1.85	0.281	ND		1.84	0.279	ND		1.91	0.29	0.524	J	1.84	0.28	ND		1.94	0.294	ND		1.79	0.272
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.8	0.334	ND		1.85	0.344	ND		1.84	0.342	ND		1.91	0.355	ND		1.84	0.343	ND		1.94	0.36	ND		1.79	0.333
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.8	0.619	ND		1.85	0.637	ND		1.84	0.632	ND		1.91	0.656	ND		1.84	0.635	ND		1.94	0.667	ND		1.79	0.616
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	14.2		1.8	0.202	ND		1.85	0.208	ND		1.84	0.207	7.27		1.91	0.215	3.93		1.84	0.208	ND		1.94	0.218	ND		1.79	0.202
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	8.31		1.8	0.338	1.36	J	1.85	0.348	ND		1.84	0.346	5.43		1.91	0.359	2.5		1.84	0.347	ND		1.94	0.364	ND		1.79	0.337
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	36		1.8	0.295	1.27	J	1.85	0.304	1.18	J	1.84	0.301	10.7		1.91	0.313	9.41		1.84	0.302	0.368	J	1.94	0.318	0.373	J	1.79	0.294
Perfluorononanoic Acid (PFNA)	375-95-1	NS	1.1	J	1.8	0.28	ND		1.85	0.289	ND		1.84	0.287	1.19	J	1.91	0.298	1.19	J	1.84	0.288	ND		1.94	0.302	ND		1.79	0.28
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.8	0.522	ND		1.85	0.537	ND		1.84	0.533	ND		1.91	0.553	ND		1.84	0.535	ND		1.94	0.562	ND		1.79	0.52
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	42.6		1.8	0.453	0.748	J	1.85	0.467	ND		1.84	0.463	22.5		1.91	0.481	22.1		1.84	0.465	ND		1.94	0.488	ND		1.79	0.452
Perfluorooctanoic Acid (PFOA)	335-67-1	70	33.2		1.8	0.212	ND		1.85	0.218	ND		1.84	0.217	20.7		1.91	0.225	10.4		1.84	0.218	ND		1.94	0.229	ND		1.79	0.211
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	35.5		1.8	0.356	1.11	J	1.85	0.367	1.12	J	1.84	0.364	12		1.91	0.378	13.8		1.84	0.365	ND		1.94	0.384	ND		1.79	0.355
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.8	0.223	ND		1.85	0.23	ND		1.84	0.228	ND		1.91	0.237	ND		1.84	0.229	ND		1.94	0.24	ND		1.79	0.222
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.8	0.294	ND		1.85	0.303	ND		1.84	0.301	ND		1.91	0.312	ND		1.84	0.302	ND		1.94	0.317	ND		1.79	0.293
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.8	0.234	ND		1.85	0.241	ND		1.84	0.239	ND		1.91	0.248	ND		1.84	0.24	ND		1.94	0.252	ND		1.79	0.233
PFOA/PFOS, Total			191.19		1.8	0.212	6.675	J	1.85	0.218	ND		1.84	0.217	93.96		1.91	0.225	81.244		1.84	0.218	ND		1.94	0.229	ND		1.79	0.211

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range for the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 42 - Stormwater Outfalls - PFAS and 1,4-D

		SAMPLE ID:	OUTFALL-002-W				OUTFALL-003-W				OUTFALL-004-W				OUTFALL-005-W				OUTFALL-006-W				OUTFALL-007-W				FIELD BLANK			
		LAB ID:	L1932869-05				L1932869-03				L1932869-06				L1932869-07				L1932869-02				L1932869-01				L1932869-04			
		COLLECTION DATE:	7/23/2019				7/23/2019				7/23/2019				7/23/2019				7/23/2019				7/23/2019				7/23/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER				WATER				WATER				WATER				WATER			
		NY-AWQS[1]																												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																														
1,4-Dioxane	123-91-1		ND		0.144	0.0326	ND		0.15	0.0339	ND		0.15	0.0339	ND		0.15	0.0339	ND		0.15	0.0339	ND		0.15	0.0339	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ng/l)																												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.98	1.2	ND		1.98	1.2	ND		1.98	1.2	2.03		1.87	1.13	ND		1.96	1.19	ND		1.9	1.15	ND		1.8	1.09
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.98	1.32	143		1.98	1.32	ND		1.98	1.32	114		1.87	1.25	ND		1.96	1.3	ND		1.9	1.27	ND		1.8	1.2
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.98	0.794	ND		1.98	0.798	ND		1.98	0.794	ND		1.87	0.753	ND		1.96	0.788	ND		1.9	0.764	ND		1.8	0.726
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.98	0.64	ND		1.98	0.643	ND		1.98	0.64	ND		1.87	0.607	ND		1.96	0.635	ND		1.9	0.616	ND		1.8	0.585
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	1.03	J	1.98	0.235	2.04		1.98	0.236	2.54		1.98	0.235	4.33		1.87	0.223	1.1	J	1.96	0.233	1.09	J	1.9	0.226	ND		1.8	0.215
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	2.2		1.98	0.403	10.6		1.98	0.405	5.92		1.98	0.403	104		1.87	0.382	7.64		1.96	0.4	9.13		1.9	0.388	ND		1.8	0.368
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.98	0.968	ND		1.98	0.972	ND		1.98	0.968	ND		1.87	0.918	ND		1.96	0.961	ND		1.9	0.932	ND		1.8	0.884
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.98	0.3	ND		1.98	0.302	ND		1.98	0.3	0.412	J	1.87	0.285	ND		1.96	0.298	ND		1.9	0.289	ND		1.8	0.274
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.98	0.368	ND		1.98	0.369	ND		1.98	0.368	ND		1.87	0.348	ND		1.96	0.365	ND		1.9	0.354	ND		1.8	0.336
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.98	0.68	4.15		1.98	0.682	ND		1.98	0.68	ND		1.87	0.644	ND		1.96	0.674	ND		1.9	0.654	ND		1.8	0.621
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.893	J	1.98	0.222	6.29		1.98	0.223	1.37	J	1.98	0.222	82.5		1.87	0.211	2.8		1.96	0.221	3.54		1.9	0.214	ND		1.8	0.203
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	28.1		1.98	0.372	234		1.98	0.373	14.7		1.98	0.372	11		1.87	0.352	3.15		1.96	0.369	2.9		1.9	0.357	ND		1.8	0.339
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	1.34	J	1.98	0.324	44.6		1.98	0.325	1.79	J	1.98	0.324	246		1.87	0.307	3.78		1.96	0.322	4.67		1.9	0.312	ND		1.8	0.296
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.427	J	1.98	0.308	0.659	J	1.98	0.31	0.818	J	1.98	0.308	2.62		1.87	0.292	1.14	J	1.96	0.306	1.11	J	1.9	0.296	ND		1.8	0.282
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.98	0.573	0.647	J	1.98	0.575	ND		1.98	0.573	ND		1.87	0.543	ND		1.96	0.569	ND		1.9	0.551	ND		1.8	0.523
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	13.4		1.98	0.498	339		1.98	0.5	12.7		1.98	0.498	9.24		1.87	0.472	2.68		1.96	0.494	4.23		1.9	0.479	ND		1.8	0.455
Perfluorooctanoic Acid (PFOA)	335-67-1	70	2.39		1.98	0.233	8.3		1.98	0.234	2.75		1.98	0.233	14.9		1.87	0.221	6.16		1.96	0.231	10.5		1.9	0.224	ND		1.8	0.213
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	0.877	J	1.98	0.391	51.4		1.98	0.393	1.71	J	1.98	0.391	470		1.87	0.371	5.22		1.96	0.388	5.05		1.9	0.376	ND		1.8	0.357
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.98	0.245	ND		1.98	0.246	ND		1.98	0.245	ND		1.87	0.232	ND		1.96	0.243	ND		1.9	0.236	ND		1.8	0.224
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.98	0.323	ND		1.98	0.325	ND		1.98	0.323	ND		1.87	0.306	ND		1.96	0.321	ND		1.9	0.311	ND		1.8	0.295
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.98	0.257	ND		1.98	0.258	ND		1.98	0.257	ND		1.87	0.243	ND		1.96	0.255	ND		1.9	0.247	ND		1.8	0.235
PFOA/PFOS, Total			15.8		1.98	0.233	347		1.98	0.234	15.5		1.98	0.233	24.1		1.87	0.221	8.84		1.96	0.231	14.7		1.9	0.224	ND		1.8	0.213

Notes:

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

Table 42A - Stormwater Outfalls - PFAS and 1,4-D

			SAMPLE ID:	OUTFALL-002-S				OUTFALL-003-S				OUTFALL-004-S				OUTFALL-005-S				OUTFALL-006-S				OUTFALL-007-S			
			LAB ID:	L1932867-02				L1932867-01				L1932867-03				L1932867-04				L1932867-05				L1932867-06			
			COLLECTION DATE:	7/24/2019				7/24/2019				7/24/2019				7/24/2019				7/24/2019				7/24/2019			
			SAMPLE MATRIX:	SEDIMENT				SEDIMENT				SEDIMENT				SEDIMENT				SEDIMENT				SEDIMENT			
		SACS-A,B,C SGVs[2]	NY-UNRES[1]																								
ANALYTE	CAS	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM																											
1,4-Dioxane	123-91-1	NS	0.1	ND		0.0934	0.0238	ND		0.0104	0.00265	ND		0.127	0.0323	ND		0.0426	0.0109	ND		0.0337	0.00859	ND		0.0322	0.0082
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)	(ug/kg)																								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	NS	ND		1.14	0.328	ND		1.25	0.36	ND		3.53	1.01	1.86		1.34	0.384	ND		1.2	0.344	ND		1.06	0.305
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	NS	ND		1.14	0.205	ND		1.25	0.225	ND		3.53	0.633	3.51		1.34	0.24	ND		1.2	0.215	ND		1.06	0.191
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	NS	ND		1.14	0.097	ND		1.25	0.106	ND		3.53	0.298	ND		1.34	0.113	ND		1.2	0.101	ND		1.06	0.09
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	NS	ND		1.14	0.23	ND		1.25	0.252	ND		3.53	0.71	ND		1.34	0.27	ND		1.2	0.242	ND		1.06	0.214
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	NS	ND		1.14	0.045	ND		1.25	0.049	ND		3.53	0.138	ND		1.34	0.052	ND		1.2	0.047	ND		1.06	0.042
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	NS	0.035	J	1.14	0.026	0.033	J	1.25	0.028	0.278	J	3.53	0.08	0.653	J	1.34	0.03	0.08	J	1.2	0.027	ND		1.06	0.024
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	NS	ND		1.14	0.175	ND		1.25	0.192	ND		3.53	0.54	ND		1.34	0.205	ND		1.2	0.184	ND	J	1.06	0.163
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	NS	0.103	J	1.14	0.077	ND		1.25	0.084	0.589	J	3.53	0.236	0.253	J	1.34	0.09	ND		1.2	0.08	ND		1.06	0.071
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	NS	0.225	J	1.14	0.08	ND		1.25	0.088	0.557	J	3.53	0.247	0.193	J	1.34	0.094	ND		1.2	0.084	ND		1.06	0.075
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	NS	ND		1.14	0.156	ND		1.25	0.171	ND		3.53	0.481	ND		1.34	0.183	ND		1.2	0.164	ND		1.06	0.145
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	NS	ND		1.14	0.052	ND		1.25	0.057	0.245	J	3.53	0.159	1.09	J	1.34	0.06	ND		1.2	0.054	ND		1.06	0.048
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	NS	ND		1.14	0.069	1.86		1.25	0.076	2.15	J	3.53	0.213	ND		1.34	0.081	ND		1.2	0.073	ND		1.06	0.064
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	NS	ND		1.14	0.06	0.083	J	1.25	0.066	0.236	J	3.53	0.185	1.52		1.34	0.07	ND		1.2	0.063	ND		1.06	0.056
Perfluorononanoic Acid (PFNA)	375-95-1	NS	NS	ND		1.14	0.086	ND		1.25	0.094	0.455	J	3.53	0.264	0.56	J	1.34	0.1	ND		1.2	0.09	ND		1.06	0.08
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	NS	ND		1.14	0.112	ND		1.25	0.123	ND		3.53	0.346	ND		1.34	0.131	ND		1.2	0.118	ND	J	1.06	0.104
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	NS	1.09	J	1.14	0.149	7.57		1.25	0.163	7.8		3.53	0.458	1.84		1.34	0.174	0.36	J	1.2	0.156	ND		1.06	0.138
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	NS	0.109	J	1.14	0.048	0.085	J	1.25	0.053	0.462	J	3.53	0.148	0.637	J	1.34	0.056	0.137	J	1.2	0.05	ND		1.06	0.045
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	NS	ND		1.14	0.053	0.098	J	1.25	0.058	0.201	J	3.53	0.162	3.37		1.34	0.062	ND		1.2	0.055	ND		1.06	0.049
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	NS	0.137	J	1.14	0.062	ND		1.25	0.068	0.335	J	3.53	0.19	0.089	J	1.34	0.072	ND		1.2	0.065	ND		1.06	0.058
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	NS	ND		1.14	0.234	ND		1.25	0.256	ND		3.53	0.721	ND		1.34	0.274	ND		1.2	0.245	ND		1.06	0.218
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	NS	0.153	J	1.14	0.054	ND		1.25	0.059	0.76	J	3.53	0.165	0.405	J	1.34	0.063	0.056	J	1.2	0.056	ND		1.06	0.05
PFOA/PFOS, Total				1.2	J	1.14	0.048	7.66	J	1.25	0.053	8.26	J	3.53	0.148	2.48	J	1.34	0.056	0.497	J	1.2	0.05	ND		1.06	0.045
GENERAL CHEMISTRY		(mg/kg)	(mg/kg)																								
Solids, Total	NONE	NS	NS	82.3		0.1	0.1	71.1		0.1	0.1	24.5		0.1	0.1	68.2		0.1	0.1	80.1		0.1	0.1	87.6		0.1	0.1

Notes:

The regulator guidance values applied herein, are those that were in effect as of the date of data collection and the Department approved work plan.

PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required

(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.

(2) New York State Department of Environmental Conservation Screening and Assessment of Contaminated Sediment, June 24, 2014, Class A-C Sediment Guidance Values.

J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

ug/l = ppb or parts per billion

ng/l = ppt or parts per trillion

Results that are shaded blue indicate a RL or MDL above the AWQS.

Table 43 - Rinse Blanks - PFAS

		SAMPLE ID:	RB01-190716				RB04-190716				RB05-190716				RB06-190716				RB07-190716				RB08-190716				RB09-190716				TRIP BLANK			
		LAB ID:	L1931180-01				L1931180-04				L1931180-05				L1931180-06				L1931180-07				L1931180-08				L1931180-09				L1931180-10			
		COLLECTION DATE:	7/16/2019				7/16/2019				7/16/2019				7/16/2019				7/16/2019				7/16/2019				7/16/2019				7/16/2019			
		SAMPLE MATRIX:	SHOP WATER				SCREEN & RISER				DRILLING ROD				ACETATE LINER & SHOE				AUGER				MACRO CORE				TOTE				WATER			
ANALYTE	CAS	NY-AWQS (ng/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION																																		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.97	1.19	ND		1.91	1.16	ND		1.92	1.16	ND		1.72	1.04	ND		1.75	1.06	ND		1.8	1.09	ND		1.77	1.07	ND		2.02	1.22
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.97	1.31	ND		1.91	1.27	ND		1.92	1.28	ND		1.72	1.15	ND		1.75	1.16	ND		1.8	1.2	ND		1.77	1.18	ND		2.02	1.34
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.97	0.791	ND		1.91	0.767	ND		1.92	0.77	ND		1.72	0.693	ND		1.75	0.703	ND		1.8	0.726	ND		1.77	0.713	ND		2.02	0.81
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.97	0.638	ND		1.91	0.618	ND		1.92	0.621	ND		1.72	0.559	ND		1.75	0.566	ND		1.8	0.585	ND		1.77	0.574	ND		2.02	0.653
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	0.646	J	1.97	0.234	ND		1.91	0.227	ND		1.92	0.228	ND		1.72	0.205	ND		1.75	0.208	ND		1.8	0.215	ND		1.77	0.211	ND		2.02	0.24
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	2.63		1.97	0.402	ND		1.91	0.389	ND		1.92	0.391	ND		1.72	0.352	ND		1.75	0.357	9.82	J	1.8	0.368	ND		1.77	0.362	ND		2.02	0.411
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.97	0.964	ND		1.91	0.935	ND		1.92	0.939	ND		1.72	0.845	ND		1.75	0.857	ND		1.8	0.884	ND		1.77	0.869	ND		2.02	0.988
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.97	0.299	ND		1.91	0.29	ND		1.92	0.291	ND		1.72	0.262	ND		1.75	0.266	ND		1.8	0.274	ND		1.77	0.27	ND		2.02	0.306
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.97	0.366	ND		1.91	0.355	ND		1.92	0.356	ND		1.72	0.321	ND		1.75	0.325	ND		1.8	0.336	ND		1.77	0.33	ND		2.02	0.375
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.97	0.677	ND		1.91	0.656	ND		1.92	0.659	ND		1.72	0.593	ND		1.75	0.601	ND		1.8	0.621	ND		1.77	0.61	ND		2.02	0.694
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	2.09	J	1.97	0.222	ND		1.91	0.215	ND		1.92	0.216	ND		1.72	0.194	ND		1.75	0.197	ND		1.8	0.203	ND		1.77	0.2	ND		2.02	0.227
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	1.03	J	1.97	0.37	ND		1.91	0.359	ND		1.92	0.36	ND		1.72	0.324	ND		1.75	0.329	ND		1.8	0.339	ND		1.77	0.333	ND		2.02	0.379
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	2.26		1.97	0.323	ND		1.91	0.313	ND		1.92	0.314	ND		1.72	0.283	ND		1.75	0.287	ND		1.8	0.296	ND		1.77	0.291	ND		2.02	0.331
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.531	J	1.97	0.307	ND		1.91	0.298	ND		1.92	0.299	ND		1.72	0.269	ND		1.75	0.273	ND		1.8	0.282	ND		1.77	0.276	ND		2.02	0.314
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.97	0.571	ND		1.91	0.553	ND		1.92	0.556	ND		1.72	0.5	ND		1.75	0.507	ND		1.8	0.523	ND		1.77	0.514	ND		2.02	0.585
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	2.95		1.97	0.496	ND		1.91	0.481	ND		1.92	0.483	ND		1.72	0.434	ND		1.75	0.44	ND		1.8	0.455	ND		1.77	0.447	ND		2.02	0.508
Perfluorooctanoic Acid (PFOA)	335-67-1	70	2.4		1.97	0.232	ND		1.91	0.225	ND		1.92	0.226	ND		1.72	0.203	ND		1.75	0.206	ND		1.8	0.213	ND		1.77	0.209	ND		2.02	0.238
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	1.77	J	1.97	0.39	ND		1.91	0.378	ND		1.92	0.379	ND		1.72	0.341	ND		1.75	0.346	0.379	J	1.8	0.357	ND		1.77	0.351	ND		2.02	0.399
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.97	0.244	ND		1.91	0.237	ND		1.92	0.238	ND		1.72	0.214	ND		1.75	0.217	ND		1.8	0.224	ND		1.77	0.22	ND		2.02	0.25
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.97	0.344	ND		1.91	0.312	ND		1.92	0.313	ND		1.72	0.282	ND		1.75	0.286	ND		1.8	0.295	ND		1.77	0.29	ND		2.02	0.33
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.97	0.256	ND		1.91	0.248	ND		1.92	0.249	ND		1.72	0.224	ND		1.75	0.227	ND		1.8	0.235	ND		1.77	0.23	ND		2.02	0.262
PFOA/PFOS, Total			5.35		1.97	0.232	ND		1.91	0.225	ND		1.92	0.226	ND		1.72	0.203	ND		1.75	0.206	ND		1.8	0.213	ND		1.77	0.209	ND		2.02	0.238

		SAMPLE ID:	RB02-190716				RB03-190716			
		LAB ID:	L1931180-02				L1931180-04			
		COLLECTION DATE:	7/16/2019				7/16/2019			
		SAMPLE MATRIX:	BENTONITE CHIPS				SAND			
ANALYTE	CAS	NY-AWQS (ug/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION										
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.08	0.311	ND		0.97	0.278
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.08	0.195	ND		0.97	0.174
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.08	0.092	ND	J	0.97	0.082
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.08	0.219	ND	J	0.97	0.195
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.08	0.042	ND		0.97	0.038
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	ND		1.08	0.025	ND	J	0.97	0.022
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.08	0.166	ND		0.97	0.148
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.08	0.073	ND		0.97	0.065
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.08	0.076	ND		0.97	0.068
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.08	0.148	ND		0.97	0.132
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.08	0.049	ND		0.97	0.044
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.08	0.066	ND		0.97	0.059
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	ND		1.08	0.057	ND		0.97	0.051
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.08	0.081	ND		0.97	0.073
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.08	0.106	ND		0.97	0.095
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	ND		1.08	0.141	ND		0.97	0.126
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	ND		1.08	0.046	ND		0.97	0.041
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	ND		1.08	0.05	ND		0.97	0.045
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.08	0.059	ND		0.97	0.052
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.08	0.222	ND		0.97	0.198
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.08	0.051	ND		0.97	0.045
PFOA/PFOS, Total			ND		1.08	0.046	ND		0.97	0.041

Notes:
PFOA and PFOS are confirmed site-related contaminants of concern on and off-site, and further assessments of PFOA and PFOS is required.
(1) New York Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values. June 1998 and Addendums.
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NA denotes Not Analyzed
NS denotes No Standard
ND denotes Non Detect
ng/l = ppt or parts per trillion
ug/kg = ppm or parts per million
Results that are shaded blue indicate a RL or MDL above the AWQS.
Results that are shaded yellow and in bold indicate a concentration above the AWQS.

APPENDIX A

SOIL BORING LOGS

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW100
ELEV.: **DATUM:**
START DATE: 8/5/19 **FINISH DATE:** 8/5/19
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
0				Asphalt ±0.25'	
2		1	2.5	Brown coarse SAND and fine to coarse GRAVEL, trace brick,	Fill
4					
6				±6.0'	Moist
8		2	3.5	Brown medium and coarse SAND, firm, well sorted	Saturated at 6.0' bgs
10					
12		3	5.0		Saturated
14				±15.0'	MW installed to 14.0' bgs with 10' screen
16				End of Boring at 15.0' bgs	

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	6.51	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW101
ELEV.: **DATUM:**
START DATE: 8/5/19 **FINISH DATE:** 8/5/19
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
				Topsoil ±1.5'	Moist
2		1	3.5	Light Brown fine SAND and SILT, Some medium and coarse Sand, firm, poorly sorted ±3.0'	Moist
4				Light Brown coarse SAND and fine to coarse GRAVEL, loose, poorly sorted	Moist
6					Moist
8		2	3.0		Saturated at 8.5' bgs
10				±10.5'	Gray/Black staining in soil at top of water table at 8.5' bgs - petroleum odor
12		3	3.5	Gray SILT and fine SAND, trace fine gravel, firm, well sorted	Saturated
14				±15.0'	MW installed to 15.0' bgs with 10' screen
16				End of Boring at 15.0' bgs	

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	6.50	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW102
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 1 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
				Topsoil ±1.0'	Moist
2		1	4.0	Brown fine SAND and fine to coarse GRAVEL, litte medium and coarse sand, firm, poorly sorted	Moist
4				±4.0'	Wet from 4.0' to 4.5' bgs
				Gray and Brown Till, primarily - SILT, Some fine to coarse Gravel, little fine sand, dense, poorly sorted	Till appears reworked through entire logged interval, with varying moisture and irregular color sequence - short sections (<1.0' thick) of roughly alternating gray and brown
6		2	4.5		Moist
8					
10					Wet from 9.0' to 10.0' bgs
12		3	4.0		Moist
14					Wet from 12.0' to 13.0' bgs
16		4	4.0		Moist

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	12.52	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW102
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 2 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
18		4	4.0	Gray and Brown Till, primarily - SILT, Some fine to coarse Gravel, little fine sand, dense, poorly sorted	Moist
20					
22		5	5.0		Wet from 20.0' to 21.0' bgs
24					Wet from 24.5' to 26.5' bgs
26		6	1.5	±26.5'	MW installed to 20.0' bgs with 10' screen (Casing refusal at 20.0' bgs)
28				Refusal at 26.5' bgs - End of Boring	
30					
32					

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	12.52	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW103
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 1 of 1

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
0				Topsoil ±1.0'	Moist
2		1	4.0	Gray Till, primarily - SILT and fine SAND, Some fine to coarse Gravel, dense, poorly sorted	Moist Till is moderately weathered
4					
6		2	2.5		Moist Wet at 6.5' bgs
8					
10		3	5.0		Saturated at 10.0' bgs Till loosens significantly at 10.0' bgs
12					
14				±14.0' Gray and Brown SILT, little fine sand and clay, varved, dense, well sorted ±15.0'	Wet at 14.0' bgs
16				Refusal at 15.0' bgs - End of Boring	MW installed to 14.0' bgs with 10' screen

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	3.98	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW104
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 1 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
				Topsoil ±1.0'	Moist
2		1	5.0	Light Brown fine to coarse SAND and fine to coarse GRAVEL, loose, poorly sorted	Moist
4					
6		2	2.5		Moist
8					
10				±9.5'	
				Tan SILT, Some Clay, trace fine sand, laminated beds, dense, well sorted Frequent partings of Gray and Dark Brown SILT and CLAY Occasional partings of Brown fine SAND	Moist
12		3	5.0		
14					
16		4	5.0		Wet at 16.0' bgs

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	18.71	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW104
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 2 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
18		4	5.0	Tan SILT, Some Clay, trace fine sand, laminated beds, dense, well sorted At 16.0' bgs, partings transition to - Occasional partings of Gray SILT Occasional partings of Brown fine SAND	Wet
20				±21.0'	Wet
22		5	5.0	Gray SILT, Some Clay, trace fine sand, dense, low plasticity, well sorted	Saturated at 21.0' bgs
24					
26					Saturated
28		6	5.0		
30				±30.0'	MW installed to 25.0' bgs with 10' screen (Casing refusal at 25.0' bgs)
32				End of Boring at 30.0' bgs	

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	18.71	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: MW105
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 1 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
		1	4.5	Topsoil ±1.0'	Moist
2				Brown fine to coarse SAND and fine to coarse GRAVEL, firm, poorly sorted	Moist
4				±4.0'	
		2	5.0	Brown Till, primarily - SILT and fine SAND, Some fine to coarse Gravel and Cobble, dense, poorly sorted	Moist
6					
8					
10				±9.5'	
		3	5.0	Gray Till, primarily - SILT, Some fine Gravel and fine Sand, little clay and coarse gravel, very dense, poorly sorted	Moist
12					
14					
16		4	5.0		Moist

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	DRY	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

C.T. MALE ASSOCIATES

DIRECT-PUSH EXPLORATION LOG

BORING NO.: W105
ELEV.: **DATUM:**
START DATE: 8/6/19 **FINISH DATE:** 8/6/19
SHEET 2 of 2

PROJECT: Hudson Valley Regional Airport SC Investigation CTM PROJECT NO.: 18.8090
LOCATION: Wappingers Falls, Dutchess County, NY CTM OBSERVER: D. King

DEPTH (FT)	SAMPLE INTERVAL	SAMPLE NUMBER	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
18		4	5.0	Gray Till, primarily - SILT, Some fine Gravel and fine Sand, little clay and coarse gravel, very dense, poorly sorted ±19.0'	Moist
20				Refusal at 19.0' bgs - End of Boring	MW installed to 6.0' bgs with 3' screen (Casing refusal at 6.0' bgs)
22					
24					
26					
28					
30					
32					

DRILLING CONTRACTOR: NYEG Drilling
DIRECT-PUSH TYPE: Geoprobe 7720 DT
METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT
8/7	DRY	Top of Casing

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE EVALUATION. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T. MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
D. King

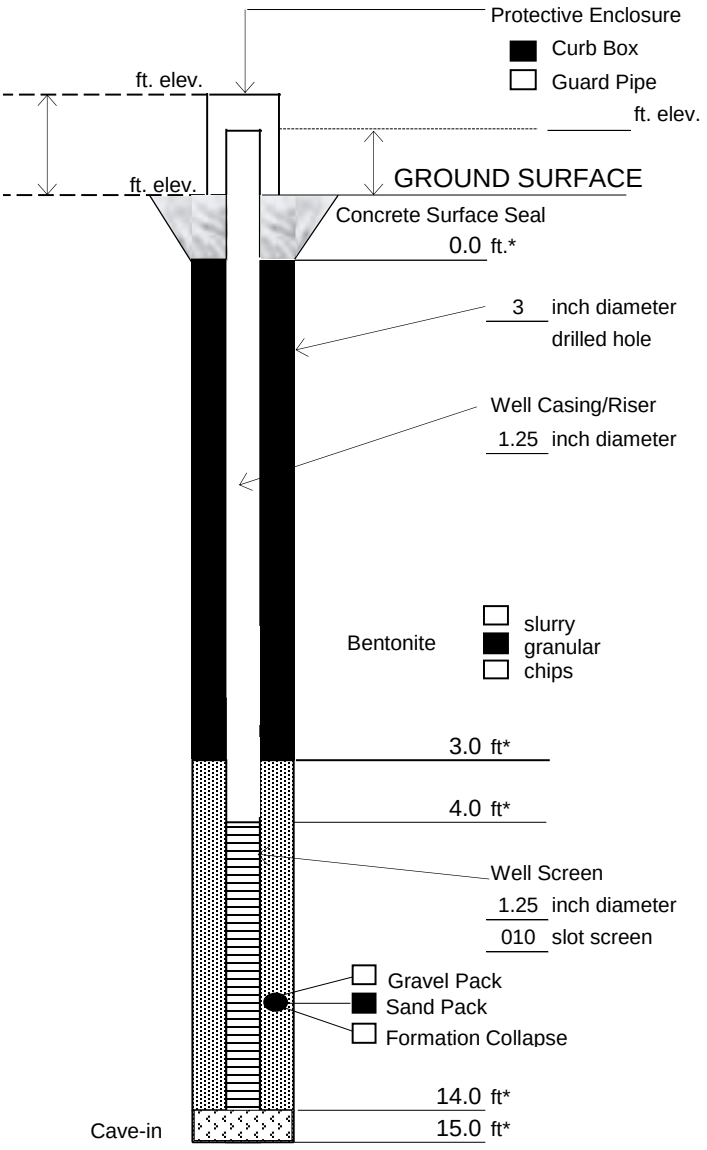
APPENDIX B

MONITORING WELL CONSTRUCTION LOGS

C.T. MALE ASSOCIATES

Well No. MW100

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW100 Boring No.: MW100

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/5/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: 6.51 ft 8/7/19 (Date)

C.T. Male Observer: D. King

Materials Used:

1.0	Bags of Sand	(50	lb. bags)
	Sand Size: #0	Brand:	Filpro
0.5	Bags of Bentonite	(50	lb. bags)
	Brand:	Cetco	
10	ft. of	Schedule 40 PVC	well screen
4	ft. of	Schedule 40 PVC	well riser
0	Bags of Cement/Concrete	(80	lb. bags)
	Brand:	Quikrete	

Grout Mixture:

No grout used for monitoring well construction.

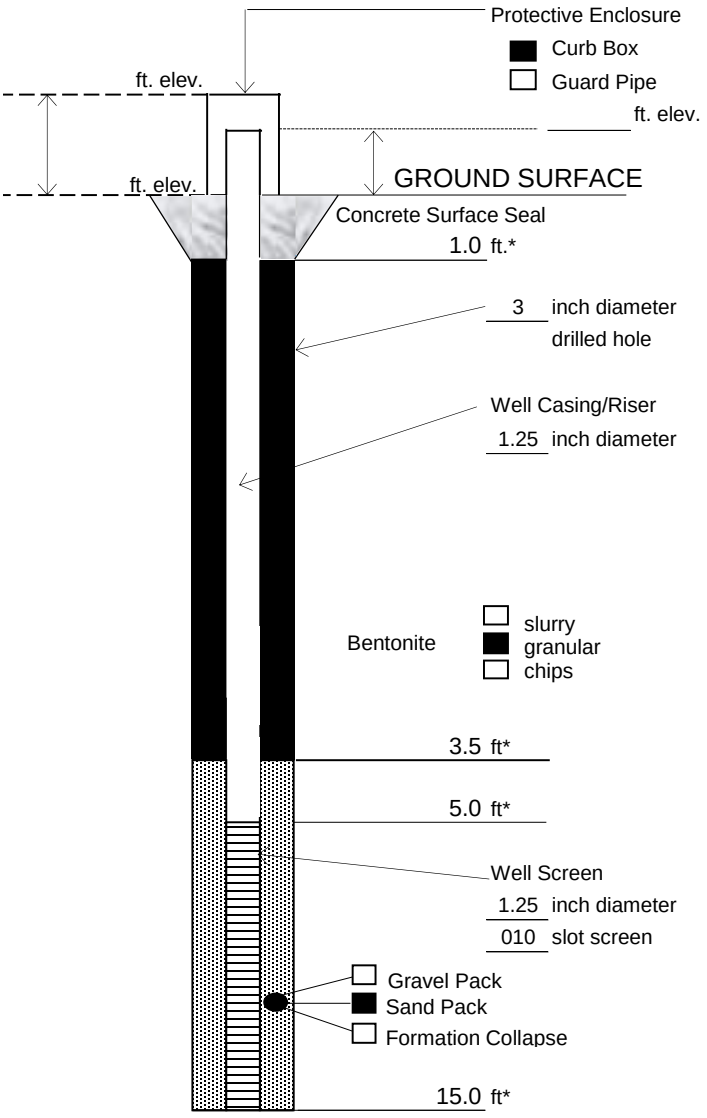
Notes:

Blacktop patched around roadbox following installation.

C.T. MALE ASSOCIATES

Well No. MW101

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW101 Boring No.: MW101

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/5/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: 6.50 ft 8/7/19 (Date)

C.T. Male Observer: D. King

Materials Used:

1.0	Bags of Sand	(50	lb. bags)
	Sand Size: #0	Brand:	Filpro
0.5	Bags of Bentonite	(50	lb. bags)
	Brand:	Cetco	
10	ft. of	Schedule 40 PVC	well screen
5	ft. of	Schedule 40 PVC	well riser
1.0	Bags of Cement/Concrete	(80	lb. bags)
	Brand:	Quikrete	

Grout Mixture:

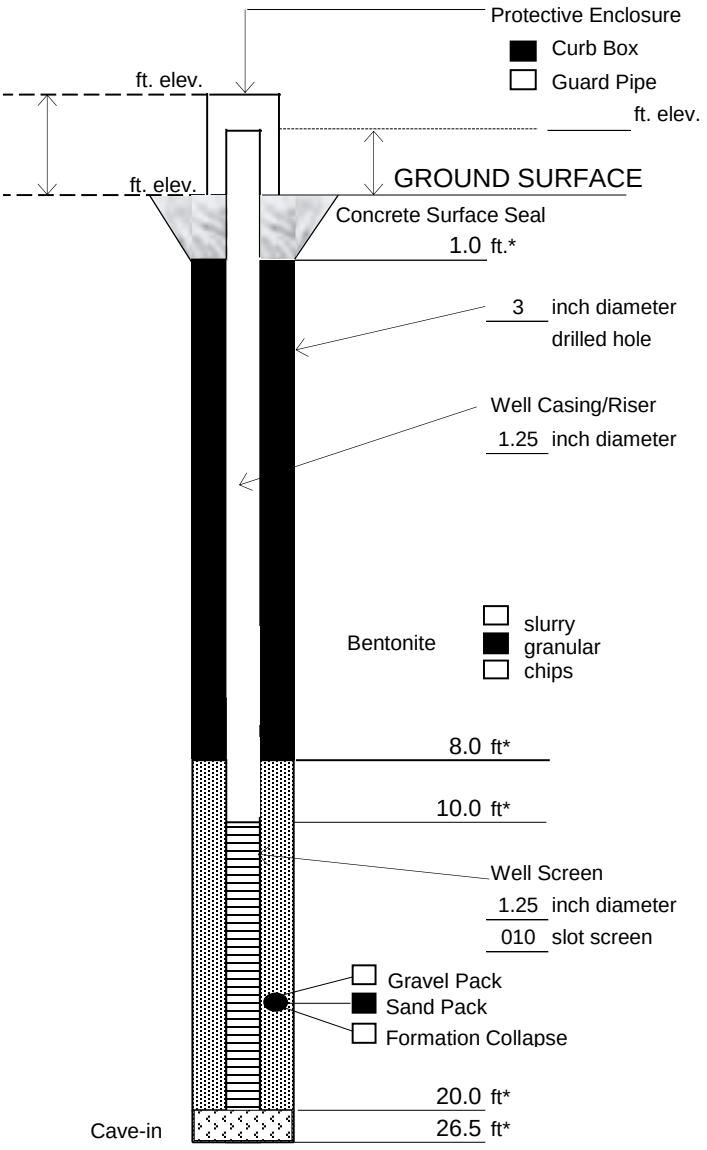
No grout used for monitoring well construction.

Notes:

C.T. MALE ASSOCIATES

Well No. MW102

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW102 Boring No.: MW102

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/6/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: 12.52 ft 8/7/19 Date

C.T. Male Observer: D. King

Materials Used:

1.0 Bags of Sand (50 lb. bags)
Sand Size: #0 Brand: Filpro
0.5 Bags of Bentonite (50 lb. bags)
Brand: Cetco
10 ft. of Schedule 40 PVC well screen
10 ft. of Schedule 40 PVC well riser
1.00 Bags of Cement/Concrete (80 lb. bags)
Brand: Quikrete

Grout Mixture:

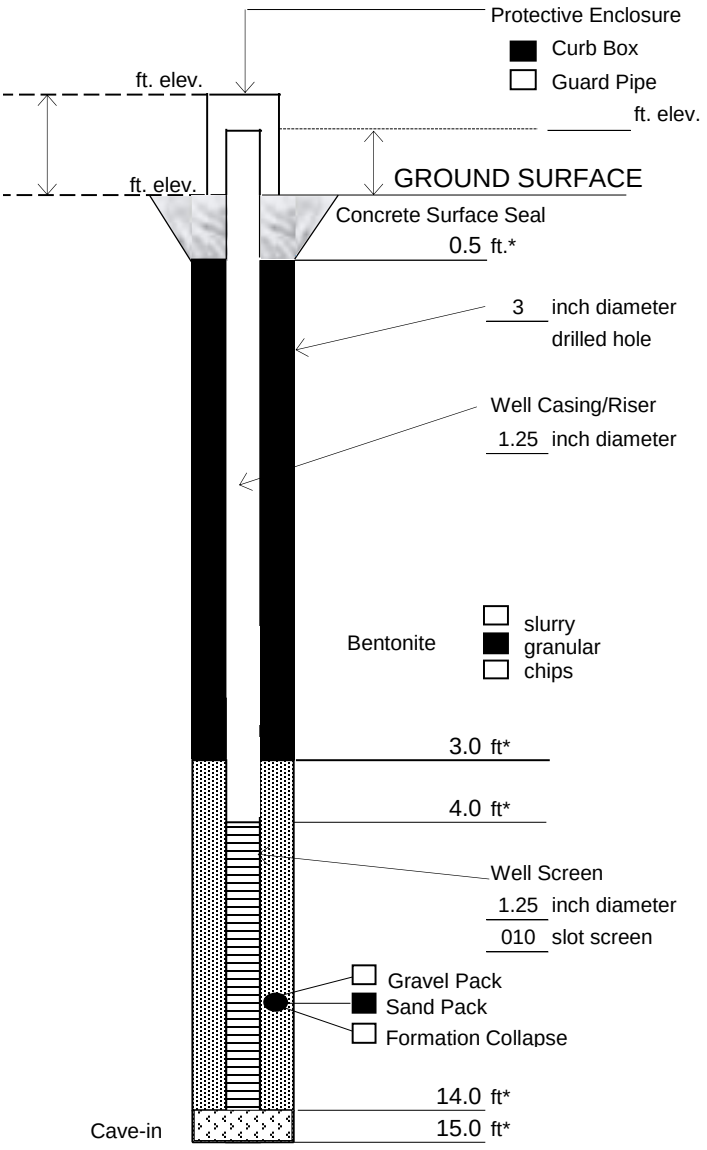
No grout used for monitoring well construction.

Notes:

C.T. MALE ASSOCIATES

Well No. MW103

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW103 Boring No.: MW103

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/6/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: 3.98 ft 8/7/19 (Date)

C.T. Male Observer: D. King

Materials Used:

1.0 Bags of Sand (50 lb. bags)
Sand Size: #0 Brand: Filpro
0.5 Bags of Bentonite (50 lb. bags)
Brand: Cetco
10 ft. of Schedule 40 PVC well screen
4 ft. of Schedule 40 PVC well riser
1.0 Bags of Cement/Concrete (80 lb. bags)
Brand: Quikrete

Grout Mixture:

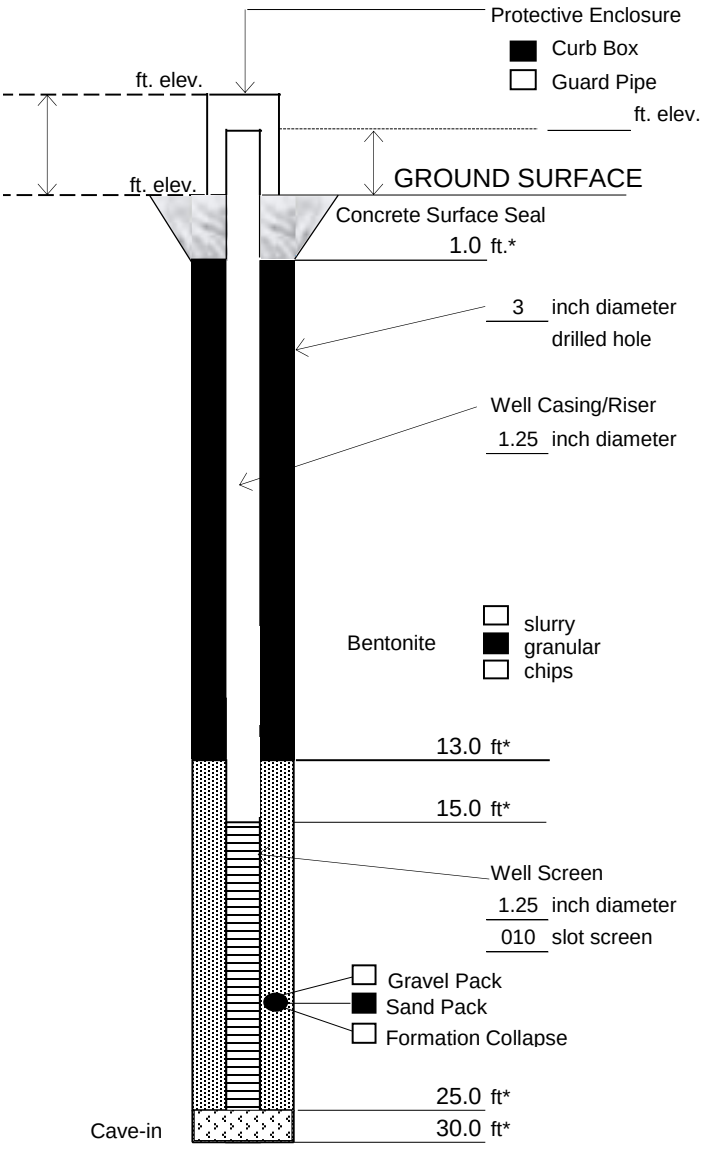
No grout used for monitoring well construction.

Notes:

C.T. MALE ASSOCIATES

Well No. MW104

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW104 Boring No.: MW104

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/6/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: 18.71 ft 8/7/19 Date

C.T. Male Observer: D. King

Materials Used:

1.0 Bags of Sand (50 lb. bags)
Sand Size: #0 Brand: Filpro
1.0 Bags of Bentonite (50 lb. bags)
Brand: Cetco
10 ft. of Schedule 40 PVC well screen
15 ft. of Schedule 40 PVC well riser
1.0 Bags of Cement/Concrete (80 lb. bags)
Brand: Quikrete

Grout Mixture:

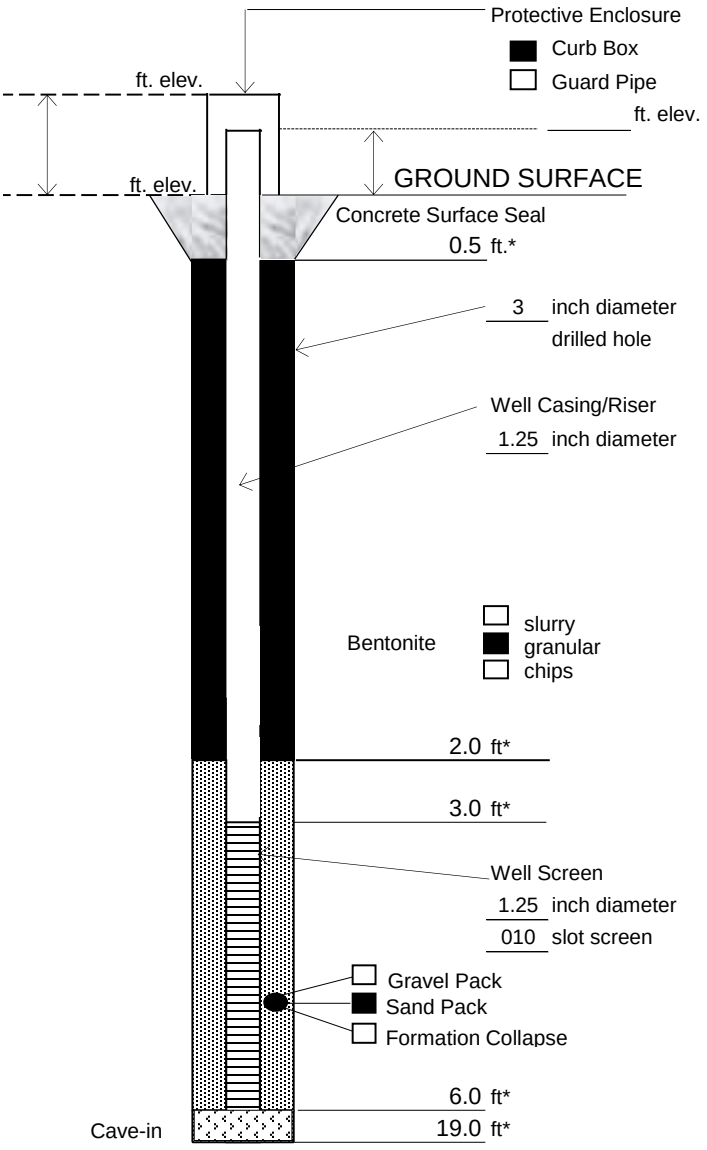
No grout used for monitoring well construction.

Notes:

C.T. MALE ASSOCIATES

Well No. MW105

MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

Project Name: Hudson Valley Regional Airport
SC Investigation

Project Number: 18.8090

Well No.: MW105 Boring No.: MW105

Town/City: Wappingers Falls

County: Dutchess State: NY

Installation Date(s): 8/6/2019

Drilling Contractor: NYEG Drilling

Drilling Method: Geoprobe 7720 DT

Water Depth From Top of Riser: DRY ft 8/7/19 Date

C.T. Male Observer: D. King

Materials Used:

0.5 Bags of Sand (50 lb. bags)
Sand Size: #0 Brand: Filpro
0.5 Bags of Bentonite (50 lb. bags)
Brand: Cetco
3 ft. of Schedule 40 PVC well screen
3 ft. of Schedule 40 PVC well riser
1.0 Bags of Cement/Concrete (80 lb. bags)
Brand: Quikrete

Grout Mixture:

No grout used for monitoring well construction.

Notes:

APPENDIX C

SUMMARY TABLE OF MONITORING WELL DETAILS AND ASSOCIATED LOGS

MONITORING WELL CONSTRUCTION DETAILS SUMMARY					
Well ID	Install Date	Bedrock/Overburden	Drilled Depth (bgs)	Well Total Depth (bgs)	Screened Interval (bgs)
MW100	2019-08-05	Overburden	15	14	4-14
MW101	2019-08-05	Overburden	15	15	5-15
MW102	2019-08-06	Overburden	26.5	20	10-20
MW103	2019-08-06	Overburden	15	14	4-14
MW104	2019-08-06	Overburden	30	25	15-25
MW105	2019-08-06	Overburden	19	6	3-6
DGC-1	1988-05-09	Overburden	22	17	7-17
MW-1	1990-11-26	Overburden	27	25	15-25
MW-2	1990-11-26	Overburden	22	20	10-20
MW-3	1990-11-27	Bedrock	51	51	41-51
MW-4	1990-12-03	Bedrock	74	74	64-74
MW-5	1990-12-03	Bedrock	55	54	44-54
MW-6	1991-10-25	Overburden	23	23	3-23
MW-7A	1994-04-03	Overburden	20	19.5	4.5-19.5
MW-8	1992-01-17	Overburden	26	25	?-25
MW-9	1992-03-23	Overburden	7	7	2-7
MW-10	1992-03-23	Overburden	7	7	2-7
ME-11	1994-04-29	Bedrock	59	58	49-58
ME-12	1994-04-25	Overburden	24	24	9-24
ME-13	1994-04-21	Overburden	23	23	8-23
ME-14	1994-04-18	Overburden	21.3	20.4	5.4-20.4
ME-15	1994-04-14	Overburden	22	22	7-22
ME-16	1994-05-02	Overburden	15.8	15.8	5.8-15.8
ME-17	1994-04-27	Bedrock	59	59	51-59
ME-18	?	Overburden	23	23	8-23
ME-19	1997-02-21	Overburden	24	24	9-24
MW-9/10	2003-10-29	Overburden	19	19	4-19
MW-20	2000-06-22	Overburden	23	23	5-23
MW-1	2011-01-13	Overburden	14	13	3-13
MW-2	2011-01-14	Overburden	13	13	3-13
MW-3	2011-01-14	Overburden	13.5	13.5	3.5-13.5
A-21G	1986-05-13	Overburden	37	36	31-36
A-21S	1986-05-13	Overburden	12.25	10.33	0.33-10.33
A-21R	1986-05-09	Bedrock	65.25	63.2	48.2-63.2
A-40S	1988-08-22	Overburden	24	24	4-24
A-41S*	1988-08-23	Overburden	26	25	5-25
A-42S*	1988-08-23	Overburden	24	24	4-24
A-43S*	1988-08-23	Overburden	26	23	4-23
A-44S*	1988-08-24	Overburden	20	14	4-14
A-45G*	1988-08-25	Overburden	60	56.5	51.5-56.5
MW-15	2007-02-21	Overburden	11	8	3-8
MW-20	2007-02-21	Overburden	11	11	3-11
MW-29	2007-02-22	Overburden	18	16	11-16
B-2	1985-04-24	Overburden	24	16	6-16
B-3S	1985-04-25	Overburden	15	15	5-15
B-3	1985-04-24	Bedrock	53	52	37-52

bgs denotes below ground surface

* Well identification cut off on log, assumed based on field measurements.

APPENDIX D

MONITORING WELL DEVELOPMENT AND SAMPLING LOGS

C.T. MALE ASSOCIATES

Daily Calibration Record

Date: 8/7/19

C.T.M. Project #: 18.8090

Project: HV Airport SC Investigation

Location: Wappingers Falls, NY

Techinian Name(s): Dan King

Ambient Temperature: ~70°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: FA03966 Pro DSS	0840	Yes / No	pH: 4.07 / 7.03 / 10.12 Dissolved Oxygen: 98.9 % Sp. Conductivity: 6975 ORP: 225	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: 100.0 % Sp. Conductivity: 7000 ORP: 230.3	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: ~~[illegible]~~ % Sp. Conductivity: 7000 ORP: 230.3
YSI: FA01466	0920	Yes / No	pH: 3.99 / 6.97 / 9.96 Dissolved Oxygen: 97.8 % Sp. Conductivity: 6954 ORP: 224.8	pH: 4.01 / 6.99 / 10.00 Dissolved Oxygen: 100.6 % Sp. Conductivity: 7000 ORP: 229.7	pH: 4.01 / 6.98 / 10.00 Dissolved Oxygen: — % Sp. Conductivity: 7000 ORP: 229.7
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:

Turbidity Meters

1) Ser.No. CTM Time 0925 Reading 10.26 NTU

2) Ser.No. _____ Time _____ Reading _____ NTU

3) Ser.No. _____ Time _____ Reading _____ NTU

4) Ser.No. _____ Time _____ Reading _____ NTU

5) Ser.No. _____ Time _____ Reading _____ NTU

6) Ser.No. _____ Time _____ Reading _____ NTU

WELL DEVEOPMENT LOG

Project Name: HV Airport SC Investigation

Project Number: 18.8090

Date Started: 8/7/19

Date Finished: 8/7/19

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	12.52	18.00	18.59								
Temperature (C)	14.4	14.6	14.6								
DO (mg/L)	11.90	7.95	4.51								
Conductivity (uS)	961	1080	1091								
pH	6.22	6.36	6.55								
ORP (mV)	42.8	24.9	14.9								
Turbidity (NTU)	110	1194 AM	669 AM								

Monitoring Well: MW102
Total Depth: 19.35'
Water Column: 6.83'
One Well Volume: 0.44 gal.

Notes:
- Begin dev. @ 10:44 w/ peri. pump
- Dry @ 10:50 - purged ~0.80 gal - testing recharge
- Recover to 17.92 @ 11:12
- Purged dry @ 11:15 - total ~1.0 gal. purged, end development

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	18.71	20.99									
Temperature (C)	15.3	16.9									
DO (mg/L)	7.71	7.26									
Conductivity (uS)	527	552									
pH	7.13	6.94									
ORP (mV)	155.9	133.5									
Turbidity (NTU)	OR	OR									

Monitoring Well: MW104
Total Depth: 21.30'
Water Column: 2.59'
One Well Volume: 0.17 gal.

Notes:
- Begin dev. @ 11:42 w/ peri. pump
- Dry @ 11:44 - purged ~0.2 gal. - testing recharge
- Recover to 20.99 @ 11:58
- Purge dry @ 11:59 - total ~0.3 gal. purged, end development

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	DRY										
Temperature (C)											
DO (mg/L)											
Conductivity (uS)											
pH											
ORP (mV)											
Turbidity (NTU)											

Monitoring Well: MW105
Total Depth: 4.92'
Water Column: —
One Well Volume: —

Notes:
- Dry, not developed

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	3.98	11.04	12.19								
Temperature (C)	16.1	18.1	16.1								
DO (mg/L)	1.76	5.40	6.90								
Conductivity (uS)	662	703	700								
pH	6.56	6.56	6.77								
ORP (mV)	-7.6	19.4	-2.0								
Turbidity (NTU)	808 AM	900 AM	604 AM								

Monitoring Well: ~~MW103~~ MW103
Total Depth: 13.80'
Water Column: 9.82'
One Well Volume: 0.63 gal.

Notes:
- Begin dev. @ 12:34 w/ peri. pump
- Dry @ 12:40 - purged ~1.2 gal. - testing recharge
- Recover to 12.04 @ 13:00
- Purge dry @ 13:02 - total ~1.25 gal. purged, end development

WELL DEVEOPMENT LOG

Project Name: HV Airport SC Investigation

Project Number: 18.8090

Date Started: 8/7/19

Date Finished: 8/7/19

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	6.50	12.53	12.78	12.90	9.25	11.07	12.38	11.51	12.17	11.77	11.85
Temperature (C)	17.7	16.3	16.1	16.0	19.7	16.8	15.6	17.7	15.5	17.0	17.6
DO (mg/L)	1.98	0.68	4.77	5.65	6.87	5.19	4.17	5.78	6.07	6.56	~~4.93~~ 6.01
Conductivity (uS)	431.8	402.6	412.2	396.0	441.0	403.8	398.4	425.2	392.0	399.3	415.3
pH	7.29	7.06	6.68	7.06	7.09	7.09	7.18	6.83	6.90	6.82	7.07
ORP (mV)	132.9	52.8	55.4	99.6	82.1	68.3	35.9	61.1	55.9	67.3	59.6
Turbidity (NTU)	3051	2199	2302	1072	2282	601	2531	670	792	127	1215

* Total Depth after development ↳ 13.31 *

Monitoring Well: MW-101 Notes: Start @ 1035 Well Pumps dry/recovery to finish development ~~1.5~~ 1.25" well

*Total Depth: 12.92 Stop @ 1205 4.5 gal Purged

Water Column: 6.42

One Well Volume: 6.41 gal 10 Volumes = 4.1 gal Peristaltic Pump YSI DSS Pro: FA 03966

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level	6.51	7.50	7.32	7.34	—		7.35			7.35	7.39
Temperature (C)	17.5	19.0	19.2	18.9			18.6	~~19.0~~		18.7	~~18.2~~ 18.1
DO (mg/L)	2.33	1.05	1.14	1.26			1.29			1.39	1.54
Conductivity (uS)	870	880	849	790			782			756	766
pH	10.00	8.82	8.41	8.26			7.94			7.48	6.92
ORP (mV)	-7.0	-93.3	-95.3	-95.4			-71.7			-30.0	-25.2
Turbidity (NTU)	2141	2000	1571	2195			2024			2367	1336

* Total Depth after Development ↳ 13.42 *

Monitoring Well: MW-100 Notes: Start @ 1315 *Purge too fast to collect all readings 1.25" well

* Total Depth: 12.29 Stop @ 1335 4.5 gal Purged

Water Column: 5.78

One Well Volume: 0.37 gal 10 Volumes = 3.7 gal Peristaltic Pump YSI DSS Pro: FA 03966

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level											
Temperature (C)											
DO (mg/L)											
Conductivity (uS)											
pH											
ORP (mV)											
Turbidity (NTU)											

Monitoring Well: Notes:

Total Depth:

Water Column:

One Well Volume:

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Intitial	1	2	3	4	5	6	7	8	9	10
Water Level											
Temperature (C)											
DO (mg/L)											
Conductivity (uS)											
pH											
ORP (mV)											
Turbidity (NTU)											

Monitoring Well: Notes:

Total Depth:

Water Column:

One Well Volume:

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 8/7/19	ON SITE: 07:50 OFF SITE: 16:00	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: Wappingers Falls, NY
SAMPLING PERSONNEL: D. King	SAMPLE TYPE: POET ☐ POU ☐ LTM ☑ OTHER ☐	
SAMPLE ADDRESS: Maintenance Building		DOUBLE PAIR OF NITRILE GLOVES USED ☑
SITE CONTACT PRESENT? YES ☑ NO ☐		NAME: Mike (HVRA Maintenance)
PURGING SOURCE: Sink (Not Bathroom)	PURGE DURATION: ~25 min	SAMPLE LOCATION(S): Sink (Not Bathroom)
INITIAL SAMPLING ☑ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☐		
INFLUENT SAMPLE COLLECTION TIME: —	MID POINT SAMPLE COLLECTION TIME: —	EFFLUENT SAMPLE COLLECTION TIME: *See COC*
FLOW METER READING (GALLONS): —		

NOTES:
- Aerator not removed
- Collected MS/MSD + FD

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

PFCs Sampling Checklist

Date: 8/8/A

Weather (*temp./precipitation*): _____ Site Name: HVRA

Field Clothing and PPE:

- ☑ No clothing or boots containing Gore-Tex™
- ☑ All safety boots made from polyurethane and PVC
- ☑ No materials containing Tyvek®
- ☑ Field crew has not used fabric softener on clothing
- ☑ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☑ Field crew has not applied unauthorized sunscreen or insect repellant

Field Equipment:

- ☑ No Teflon® or LDPE containing materials on-site
- ☑ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☑ No waterproof field books on-site
- ☑ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☑ No adhesives (Post-It Notes) on-site
- ☑ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☑ All sample containers made of HDPE or polypropylene
- ☑ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☑ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☑ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☑ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☑ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

_____

_____

_____

Field Lead Name: Dan King

Field Lead Signature: _____ Time: _____

C.T. MALE ASSOCIATES

Daily Calibration Record

Date: 8/8/19 C.T.M. Project #: 18.8090

Project: HV Airport SC Investigation Location: Wappingers Falls, NY

Techinian Name(s): D. King, C. Bondi Ambient Temperature: ~75°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: FA03966 ProDSS	0820	Yes / No	pH: 4.04 / 6.99 / 10.06 Dissolved Oxygen: 98.3 % Sp. Conductivity: 6564 ORP: 231.2	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: — % Sp. Conductivity: 7000 ORP: 232.7	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: — % Sp. Conductivity: 7000 ORP: 232.7
YSI: FA01466	0820	Yes / No	pH: 3.99 / 7.00 / 10.06 Dissolved Oxygen: 110.7 % Sp. Conductivity: 7006 ORP: 229.5	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: — % Sp. Conductivity: 7000 ORP: 232.4	pH: 4.00 / 7.01 / 10.03 Dissolved Oxygen: — % Sp. Conductivity: 7000 ORP: 232.4
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes / No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:

Turbidity Meters

1) Ser.No. CTM Time 1000 Reading 10.25 NTU
4) Ser.No. Time Reading NTU

2) Ser.No. Time Reading NTU
5) Ser.No. Time Reading NTU

3) Ser.No. Time Reading NTU
6) Ser.No. Time Reading NTU

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☑ Low-Flow ☐ Sample

DATE: 8/8/19
PROJECT NO.: 18.8090
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW102
DEPTH TO WATER (ft): 11.08 FROM: TPVC
DEPTH TO BOTTOM (ft): 19.35 FROM: TPVC
WATER COLUMN HEIGHT: 8.27 ft
WELL VOLUME: 0.53 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS
1" = 0.041 GAL/LF 3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF
2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	30	35	38		
Water Level (ft)	± 0.00	11.08	12.98	13.56	14.39	15.28	16.19	17.30	18.82	DRY		
Temperature (C)	± 3%	16.4	16.9	17.0	17.1	17.1	17.2	17.2	17.0			
DO (mg/L)	±10% or < 0.5	3.48	3.21	3.04	2.96	2.85	2.81	3.01	3.26			
Conductivity (uS)	± 3%	1150	1157	1160	1134	1126	1129	1139	1210			
pH (SU)	± 0.1	6.24	6.26	6.39	6.39	6.42	6.42	6.43	6.43			
ORP (mV)	±10 mV	28.6	11.6	2.2	-3.0	-5.8	-7.0	-5.5	-2.9			
Turbidity (NTU)	±10% or < 5	39.5	16.5	25.8	48.4	59.0	56.2	64.8	105.1			

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: ~1.1 GALLONS
AVG PURGE RATE: ~110mL/min.
TIME STARTED: 10:11
TIME FINISHED: Dry @ 10:49

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft
WATER RECOVERY HEIGHT: — ft
SAMPLE COLLECTION TIME: —
RECOVERY TIME IN MINUTES: —

NOTES: ~~Sample collection~~ Low-flowed dry, grab sample to be collected tomorrow after recharge.

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☑ Low-Flow ☐ Sample

DATE: 8/8/19
PROJECT NO.: 18.8090
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW104
DEPTH TO WATER (ft): 17.91 FROM: TPVC
DEPTH TO BOTTOM (ft): 21.30 FROM: TPVC
WATER COLUMN HEIGHT: 3.39 ft
WELL VOLUME: 0.22 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF	3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF	4" = 0.66 GAL/LF
2" = 0.16 GAL/LF	6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)											
Time (minutes)	-	Initial	@5	@8									
Water Level (ft)	± 0.00	17.91	16.9	DRY									
Temperature (C)	± 3%	18.3	16.9										
DO (mg/L)	±10% or < 0.5	7.63	6.03										
Conductivity (uS)	± 3%	509	483.5										
pH (SU)	± 0.1	7.10	6.98										
ORP (mV)	±10 mV	146.5	128.5										
Turbidity (NTU)	±10% or < 5	7924	44.5										

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: ~0.25 GALLONS
AVG PURGE RATE: 110mL/min.
TIME STARTED: 11:34
PRT @ TIME FINISHED: 11:42

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft
WATER RECOVERY HEIGHT: — ft
SAMPLE COLLECTION TIME: —
RECOVERY TIME IN MINUTES: —

NOTES: Low-flowed dry, grab sample to be collected tomorrow after recharge.

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☑ Low-Flow ☐ Sample

DATE: 8/8/19
PROJECT NO.: 18.8090
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW103
DEPTH TO WATER (ft): 4.30 FROM: TPVC
DEPTH TO BOTTOM (ft): 13.80 FROM: TPVC
WATER COLUMN HEIGHT: 9.50 ft
WELL VOLUME: ~~0.42~~ 0.61 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF	3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF	4" = 0.66 GAL/LF
2" = 0.16 GAL/LF	6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	29				
Water Level (ft)	± 0.00	4.30	6.26	8.81	9.70	10.55	11.94	DRY				
Temperature (C)	± 3%	18.9	18.9	19.2	19.4	19.5	19.5					
DO (mg/L)	±10% or < 0.5	3.56	1.43	3.98	4.24	4.89	4.99					
Conductivity (uS)	± 3%	734	724	770	779	772	780					
pH (SU)	± 0.1	6.53	6.48	6.53	6.59	6.62	6.65					
ORP (mV)	±10 mV	-29.5	-27.1	-12.5	1.8	11.7	16.2					
Turbidity (NTU)	±10% or < 5	40.9	45.2	30.5	21.0	14.7	13.4					

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: ~1.2 GALLONS
AVG PURGE RATE: 110mL/min.
TIME STARTED: 12:11
TIME FINISHED: DRY @ 12:40

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft
WATER RECOVERY HEIGHT: — ft
SAMPLE COLLECTION TIME: —
RECOVERY TIME IN MINUTES: —

NOTES: Low-flowed dry, grab sample to be collected tomorrow after recharge.

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☑ Low-Flow ☑ Sample

DATE: 8/8/19 PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.8090 PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: Cliff Bondi

NOTES TAKEN BY: CB NOTES CHECKED BY: D. King

MONITORING WELL ID#: MW-100 WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 6.69 FROM: TPVC

DEPTH TO BOTTOM (ft): 13.43 FROM: TPVC

WATER COLUMN HEIGHT: 6.74 ft

WELL VOLUME: 0.43 GALLONS

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

(1.25") = 0.064 GAL/LF 4" = 0.66 GAL/LF

2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	30	35	40	45	50
Water Level (ft)	± 0.00	6.69	6.83	6.81	6.81	6.81	6.81	6.81	6.81	6.81	6.81	6.81
Temperature (C)	± 3%	18.5	18.9	19.0	19.1	19.4	19.1	19.2	19.3	19.3	19.4	19.3
DO (mg/L)	±10% or < 0.5	3.01	1.16	1.18	1.27	1.30	1.32	1.34	1.35	1.35	1.36	1.37
Conductivity (uS)	± 3%	852	892	862	847	841	828	825	824	823	819	819
pH (SU)	± 0.1	7.47	7.04	6.93	6.82	6.76	6.71	6.69	6.67	6.65	6.63	6.63
ORP (mV)	±10 mV	43.2	-72.8	-58.2	-43.9	-36.2	-29.1	-25.5	-21.9	-19.8	-15.3	-14.9
Turbidity (NTU)	±10% or < 5	99.71	77.85	30.15	29.41	20.62	27.62	33.56	39.66	14.52	6.83	14.35

Field Parameters	Time (since start of purging)												
Time (minutes)	55	60											
Water Level (ft)	6.81	6.81											
Temperature (C)	19.1	19.2											
DO (mg/L)	1.40	1.40											
Conductivity (uS)	814	816											
pH (SU)	6.62	6.61											
ORP (mV)	-12.4	-10.7											
Turbidity (NTU)	14.98	14.03											

VOLUMES PURGED: 5.5 GALLONS AVG PURGE RATE: 370 ml/min

TIME STARTED: 1220 TIME FINISHED: 1320

OBSERVATIONS: COLOR Clear ODOR None

SHEEN None OTHER —

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: — ft

SAMPLE COLLECTION TIME: 1320 RECOVERY TIME IN MINUTES: —

NOTES: MS/MSD Collected here / FD Collected here

Sampled for full Suite TCL/TAL, CN, PFAS, 1,4-Dioxane

↳ VOCs, SVOCs, PCBs, Pest.

EQUIPMENT: (PERISTALTIC PUMP) NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: YSI DSS P/O : FA03966

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☑ Low-Flow ☑ ~~Sample~~ (EB)

DATE: 8/8/19 PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.8096 PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: Cliff Bond:

NOTES TAKEN BY: CB NOTES CHECKED BY: _____

MONITORING WELL ID#: MW-101 WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 6.45 FROM: TPVC

DEPTH TO BOTTOM (ft): 13.82 FROM: TPVC

WATER COLUMN HEIGHT: (CB) ~~6.46~~ 7.37 ft

WELL VOLUME: (CB) ~~0.99~~ 0.47 GALLONS

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial	5	10	15	20	25	30	35	40	45	50
Water Level (ft)	± 0.00	6.45	7.67	7.95	8.07	8.30	8.46	8.64	8.81	9.00	9.22	9.73
Temperature (C)	± 3%	17.1	17.1	17.3	17.6	17.1	17.1	16.8	17.4	17.6	17.7	17.0
DO (mg/L)	±10% or < 0.5	4.70	2.92	3.12	2.28	1.29	0.81	0.56	0.40	0.46	0.75	1.70
Conductivity (uS)	± 3%	436.6	424.1	429.0	434.9	427.5	428.4	428.4	435.1	438.9	440.1	432.8
pH (SU)	± 0.1	7.30	7.10	7.03	7.09	7.17	7.22	7.22	7.20	7.14	7.10	7.05
ORP (mV)	±10 mV	172.6	113.5	112.9	97.0	54.1	36.2	26.9	23.3	21.2	17.5	25.4
Turbidity (NTU)	±10% or < 5	58.41	95.48	26.78	17.18	20.35	17.97	26.61	42.57	43.61	53.95	56.60

Field Parameters	Time (since start of purging)												
Time (minutes)	55	60	65	70	75	80	85	90	95	100			
Water Level (ft)	10.37	10.82	11.31	11.58	11.73	11.90	12.44	12.84	13.36	13.82			
Temperature (C)	16.8	16.9	16.9	16.6	16.9	17.4	16.6	16.3	16.8	17.4			
DO (mg/L)	2.33	3.22	4.40	4.08	5.15	5.41	5.85	5.95	5.66	5.45			
Conductivity (uS)	430.1	432.3	431.3	429.3	428.5	433.2	424.6	422.1	425.0	431.3			
pH (SU)	7.02	6.96	6.57	6.94	6.87	6.88	6.91	6.91	6.94	6.95			
ORP (mV)	30.1	48.48	51.4	28.7	45.9	43.8	57.9	54.9	50.5	53.1			
Turbidity (NTU)	90.63	48.70	89.70	187.7	1181	293.96	146.72	9.45	266.29	245.32			

VOLUMES PURGED: 4.0 GALLONS AVG PURGE RATE: 160 ml/min

TIME STARTED: 0940 TIME FINISHED: 1120 *Dry

OBSERVATIONS: COLOR Clear/cloudy ODOR None

SHEEN None OTHER —

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: — ft

SAMPLE COLLECTION TIME: — RECOVERY TIME IN MINUTES: —

NOTES: Well purged dry → will allow for recovery overnight prior to collecting grab sample

EQUIPMENT: (PERISTALTIC PUMP) NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: YSI DSS Pro : FA03966

PFCs Sampling Checklist

Date: 8/9/19

Weather (*temp./precipitation*): Clear, calm, humid, ~70°F Site Name: FIVRA

Field Clothing and PPE:

- ☑ No clothing or boots containing Gore-Tex™
- ☑ All safety boots made from polyurethane and PVC
- ☑ No materials containing Tyvek®
- ☑ Field crew has not used fabric softener on clothing
- ☑ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☑ Field crew has not applied unauthorized sunscreen or insect repellant

Field Equipment:

- ☑ No Teflon® or LDPE containing materials on-site
- ☑ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☑ No waterproof field books on-site
- ☑ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☑ No adhesives (Post-It Notes) on-site
- ☑ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☑ All sample containers made of HDPE or polypropylene
- ☑ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☑ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☑ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☑ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☑ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Dan King

Field Lead Signature: _____ Time: 07:56

C.T. MALE ASSOCIATES

Daily Calibration Record

Date: 8/9/19 C.T.M. Project #: 18.8090

Project: HV Airport SC Investigation Location: Wappingers Falls, NY

Techinian Name(s): D. King Ambient Temperature: ~70°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: FA01466	0715	Yes / No	pH: 4.04 / 7.01 / 10.07 Dissolved Oxygen: 98.8 % Sp. Conductivity: 7032 ORP: 237.9	pH: 4.00 / 7.03 / 10.08 Dissolved Oxygen: 100.6 % Sp. Conductivity: 7000 ORP: 239.4	pH: 4.00 / 7.05 / 10.08 Dissolved Oxygen: —— % Sp. Conductivity: 7000 ORP:
YSI: FA03966 ProDSS	0715	Yes / No	pH: 4.15 / 7.09 / 10.14 Dissolved Oxygen: 99.6 % Sp. Conductivity: 7330 ORP: 232.7	pH: 4.00 / 7.03 / 10.08 Dissolved Oxygen: 100.0 % Sp. Conductivity: 7000 ORP: 238.9	pH: 4.00 / 7.05 / 10.08 Dissolved Oxygen: —— % Sp. Conductivity: 7000 ORP: 238.9
YSI:		Yes No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:
YSI:		Yes No	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:	pH: / / Dissolved Oxygen: % Sp. Conductivity: ORP:

Turbidity Meters

1) Ser.No. CTM Time 0745 Reading 10.19 NTU
2) Ser.No. _____ Time _____ Reading _____ NTU
3) Ser.No. _____ Time _____ Reading _____ NTU
4) Ser.No. _____ Time _____ Reading _____ NTU
5) Ser.No. _____ Time _____ Reading _____ NTU
6) Ser.No. _____ Time _____ Reading _____ NTU

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☐ Low-Flow ☑ Sample

DATE: 8/9/19
PROJECT NO.: 18.809
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW102
DEPTH TO WATER (ft): 10.49 FROM: TPVC
DEPTH TO BOTTOM (ft): 19.35 FROM: TPVC
WATER COLUMN HEIGHT: 8.86 ft
WELL VOLUME: 0.57 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF	3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF	4" = 0.66 GAL/LF
2" = 0.16 GAL/LF	6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial										
Water Level (ft)	± 0.00	10.49										
Temperature (C)	± 3%	16.6										
DO (mg/L)	±10% or < 0.5	5.24										
Conductivity (uS)	± 3%	1137										
pH (SU)	± 0.1	6.54										
ORP (mV)	±10 mV	119.9										
Turbidity (NTU)	±10% or < 5	61.2										

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: — GALLONS AVG PURGE RATE: —

TIME STARTED: — TIME FINISHED: —

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: 10.49 ft

SAMPLE COLLECTION TIME: 0840 RECOVERY TIME IN MINUTES: —

NOTES: Sampled for: TCL/TAL, CN, PFAS, 1,4-dioxane & VOCs, SVOCs, PCBs, Pest.

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☐ Low-Flow ☑ Sample

DATE: 8/9/19
PROJECT NO.: 18.809
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW104
DEPTH TO WATER (ft): 17.92 FROM: TPVC
DEPTH TO BOTTOM (ft): 21.30 FROM: TPVC
WATER COLUMN HEIGHT: 3.38 ft
WELL VOLUME: 0.22 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF
2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)											
Time (minutes)	-	Initial											
Water Level (ft)	± 0.00	17.92											
Temperature (C)	± 3%	17.5											
DO (mg/L)	±10% or < 0.5	6.58											
Conductivity (uS)	± 3%	483.5											
pH (SU)	± 0.1	7.19											
ORP (mV)	±10 mV	190.7											
Turbidity (NTU)	±10% or < 5	OR											

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: — GALLONS AVG PURGE RATE: —

TIME STARTED: — TIME FINISHED: —

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: 17.92 ft

SAMPLE COLLECTION TIME: 0925 RECOVERY TIME IN MINUTES: —

NOTES: Sampled for: PFAS, 1,4-Dioxane

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☐ Low-Flow ☑ Sample

DATE: 8/9/19
PROJECT NO.: 18.809
SAMPLING PERSONNEL: D. King
NOTES TAKEN BY: D. King
MONITORING WELL ID#: MW103
DEPTH TO WATER (ft): 4.68 FROM: TPVC
DEPTH TO BOTTOM (ft): 13.80 FROM: TPVC
WATER COLUMN HEIGHT: 9.12 ft
WELL VOLUME: 0.58 GALLONS

PROJECT NAME: HV Airport SC Investigation
PROJECT LOCATION: Wappingers Falls, NY
NOTES CHECKED BY:
WELL CASING DIAMETER: 1.25 in.

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF	3" = 0.38 GAL/LF
1.25" = 0.064 GAL/LF	4" = 0.66 GAL/LF
2" = 0.16 GAL/LF	6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	Initial										
Water Level (ft)	± 0.00	4.68										
Temperature (C)	± 3%	11.2										
DO (mg/L)	±10% or < 0.5	5.32										
Conductivity (uS)	± 3%	747										
pH (SU)	± 0.1	6.68										
ORP (mV)	±10 mV	0.3										
Turbidity (NTU)	±10% or < 5	49.7										

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: — GALLONS AVG PURGE RATE: —

TIME STARTED: — TIME FINISHED: —

OBSERVATIONS: COLOR None ODOR None
SHEEN None OTHER

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: 4.68 ft

SAMPLE COLLECTION TIME: 1000 RECOVERY TIME IN MINUTES: —

NOTES: Sampled for: TCL/TAL, CN, PFAS, 1,4-Dioxane
↳ VOCs, SVOCs, PCBs, Pest.

EQUIPMENT: ☑ PERISTALTIC PUMP ☐ NEW DISPOSABLE BAILER ☐ STAINLESS STEEL BAILER
☐ BLADDER PUMP ☐ SUBMERSIBLE PUMP ☐ OTHER

SERIAL NOs: YSI FA01466 Turb. CTM

WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol. ☐ Low-Flow ☑ Sample

DATE: 8/9/19 PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.8090 PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: Cliff Bondi

NOTES TAKEN BY: CB NOTES CHECKED BY:

MONITORING WELL ID#: MW-101 WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 6.49 FROM: TPVC

DEPTH TO BOTTOM (ft): 13.88 FROM: TPVC

WATER COLUMN HEIGHT: 7.39 ft

WELL VOLUME: 0.47 GALLONS

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)										
Time (minutes)	-	*Initial	Final									
Water Level (ft)	± 0.00	5.33	10.24									
Temperature (C)	± 3%	17.2	17.0									
DO (mg/L)	±10% or < 0.5	5.83	4.17									
Conductivity (uS)	± 3%	402.9	414.4									
pH (SU)	± 0.1	7.20	7.23									
ORP (mV)	±10 mV	211.6	204.8									
Turbidity (NTU)	±10% or < 5	191.81	202.50									

Field Parameters	Time (since start of purging)												
Time (minutes)													
Water Level (ft)													
Temperature (C)													
DO (mg/L)													
Conductivity (uS)													
pH (SU)													
ORP (mV)													
Turbidity (NTU)													

VOLUMES PURGED: — GALLONS AVG PURGE RATE: —

TIME STARTED: — TIME FINISHED: —

OBSERVATIONS: COLOR Clear/Cloudy ODOR Slight Petroleum odor

SHEEN None OTHER —

WATER LEVEL AT 80% RECOV.: — ft WATER RECOVERY HEIGHT: — ft

SAMPLE COLLECTION TIME: 0915 RECOVERY TIME IN MINUTES: —

NOTES: Grab Sample Collected → well low-flowed dry yesterday 8/8/19

Sampled for: PFAS, 1,4 Dioxane, Metals, TCN

* 1 set of parameters collected after PFAS/Dioxane samples, 1 set after full sample collected (Final)

EQUIPMENT: PERISTALTIC PUMP NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOs: YSI DSS Pro: FA03966

APPENDIX E

DRINKING WATER WELL SAMPLING LOGS

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/04/2019	ON SITE: 1308 OFF SITE: 1346	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: Wappingers Falls, NY
SAMPLING PERSONNEL: Amanda Hens	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: 1581 Route 376		DOUBLE PAIR OF NITRILE GLOVES USED ☒
SITE CONTACT PRESENT? YES ☒ NO ☐		NAME: Rob (worker)
PURGING SOURCE: outside hose spigot	PURGE DURATION: (AH) ~~1320~~ 10 min	SAMPLE LOCATION(S): outside spigot
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☒		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		

NOTES:
- Started purge at 1320 ended at 1330
- Collected sample at 1333
- DEC & Dept of health rep. present onsite.

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/04/2019	ON SITE: 1353 OFF SITE: 1415	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: Wappingers Falls, NY
SAMPLING PERSONNEL: Amanda Hens	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: 7 Hackensack Heights Rd.		DOUBLE PAIR OF NITRILE GLOVES USED ☒
SITE CONTACT PRESENT? YES ☐ NO ☒ NAME: _____ (All) ~~left~~ Property owner made/wrote note to Sampler		
PURGING SOURCE: outside spigot	PURGE DURATION: 10 min	SAMPLE LOCATION(S): outside spigot
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER. ☒		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		

NOTES:
- DEC official started purge at 1348 ended at 1358 sampled at 1400.
- Resident left note; wated signed so she knew we were here. signed and took picture FTB taken at 1404
- DEC & Dept of Health representatives present onsite

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/04/2019	ON SITE: 1417 OFF SITE: 1455	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: Wappingers Falls, NY
SAMPLING PERSONNEL: Amanda Hens	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: FTC Enterprises (Como Pollution Control) 1610 Rt. 376		DOUBLE PAIR OF NITRILE GLOVES USED ☒
SITE CONTACT PRESENT? YES ☒ NO ☐		NAME: Mike (property owner)
PURGING SOURCE: outside spigot	PURGE DURATION: 10 min	SAMPLE LOCATION(S): outside spigot
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☒		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		

NOTES:
- Arrived at 1417 waiting for property owner Mike
- Owner arrived showed where new well was and where we could sample it; new well ~500 ft deep
started purge at 1430 ended at 1440
sampled at 1441
- DEC & Dept. of Health rep. present onsite

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/04/2019	ON SITE: 1505 OFF SITE:	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: Wappingers Falls, NY
SAMPLING PERSONNEL: Amanda Hens	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: 2 Hackensack Heights Rd.		DOUBLE PAIR OF NITRILE GLOVES USED ☒
SITE CONTACT PRESENT? YES ☒ NO ☐		NAME: Homeowners parents
PURGING SOURCE: —	PURGE DURATION: —	SAMPLE LOCATION(S): —
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☐		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		

NOTES: Sample was not taken; miscommunication about meeting time. Mr. Chung was not home. Was material / items over crawlspace entrance. Older couple could not move items and sampling point was in confined space. Told couple we could keep the time they thought had been scheduled Friday at 4pm and someone could come then to sample. Talked to David Lent and said he would either have someone sample it or call homeowner.

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/06/19	ON SITE: 1445 OFF SITE: 1540	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: 1601 Rt. 376
SAMPLING PERSONNEL: D. Lent	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: 1601 Rt. 376 Wappinger Falls NY 12590		DOUBLE PAIR OF NITRILE GLOVES USED ☒
SITE CONTACT PRESENT? YES ☒ NO ☐	NAME: Harold Bochner	
PURGING SOURCE: Spigot - South side of building	PURGE DURATION: 10 min	SAMPLE LOCATION(S): Outside Spigot
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☒		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		

NOTES:

Started purge at 1505; ended at 1515

Collected sample at 1515

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

C.T. MALE ASSOCIATES

Residental Well Sampling Services Field Log

DATE: 09/06/19	ON SITE: 1545 OFF SITE: 1620	PROJECT NO.: 18.8090
PROJECT NAME: HVRA		PROJECT LOCATION: 2 Hackensack Heights Rd.
SAMPLING PERSONNEL: D. Lent	SAMPLE TYPE: POET ☐ POU ☐ LTM ☐ OTHER ☒	
SAMPLE ADDRESS: 2 Hackensack Heights Rd		DOUBLE PAIR OF NITRILE GLOVES USED ☐
SITE CONTACT PRESENT? YES ☒ NO ☐	NAME: Melon Chung	
PURGING SOURCE: Rear Spigot at deck	PURGE DURATION: 10 Min	SAMPLE LOCATION(S): outside Spigot
INITIAL SAMPLING ☐ ROUTINE SAMPLING ☐ VESSEL CHANGE-OUT ☐ OTHER ☒		
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): NA		
NOTES: Started Purge at 1550; Ended Purge at 1600 Collected Sample at 1600		

Key:
POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Exampe Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot

APPENDIX F

LABORATORY REPORTS

ANALYTICAL REPORT

Lab Number:	L1931312
Client:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, NY 12603
ATTN:	David Lent
Phone:	(845) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	07/31/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931312-01	HVRA-AAG-PW01	WATER	AAG HANGAR	07/16/19 13:20	07/16/19
L1931312-02	TRIP BLANK	WATER	AAG HANGAR	07/16/19 13:20	07/16/19
L1931312-03	FIELD BLANK	WATER	AAG HANGAR	07/16/19 00:00	07/16/19
L1931312-04	HVRA-AAG-PW01	WATER	AAG HANGAR	07/17/19 10:00	07/17/19
L1931312-05	TRIP BLANK	WATER	AAG HANGAR	07/17/19 10:00	07/17/19
L1931312-06	FIELD BLANK	WATER	AAG HANGAR	07/17/19 10:00	07/17/19

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

Case Narrative (continued)

Report Submission

July 31, 2019: This final report includes the results of all requested analyses.

July 31, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1931312-01: One container for the PCBs analysis was received broken; however, there was adequate sample remaining to perform the requested analysis.

L1931312-01: The Perfluorinated Alkyl Acids analysis was requested on the Chain of Custody, but a container was not received. This was later received and is reported as L1931312-04.

L1931312-02: A sample identified as "TRIP BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was not analyzed.

L1931312-03: A sample identified as "FIELD BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was not analyzed.

L1931312-04: The sample identified as "HVRA-AAG-PW01" on the chain of custody was identified as "HVRA-ARFF-PW01" on the container label. At the client's request, the sample is reported as "HVRA-AAG-PW01".

Perfluorinated Alkyl Acids by Isotope Dilution

WG1266320-2: The continuing calibration standard had the response for PFHxS is outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

PCBs

The WG1261777-2 LCS recoveries, associated with L1931312-01, were outside the acceptance criteria for

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

Case Narrative (continued)

aroclor 1016 (28%) and aroclor 1260 (26%); however, re-extraction could not be performed due to lack of additional sample. The results of the original analyses are reported.

The surrogate recoveries for the WG1261777-2 LCS, associated with L1931312-01, are outside the acceptance criteria for 2,4,5,6-tetrachloro-m-xylene (24%, 24%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 07/31/19

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/18/19 19:14
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 07/17/19 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.7	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01 Date Collected: 07/16/19 13:20

Client ID: HVRA-AAG-PW01 Date Received: 07/16/19

Sample Location: AAG HANGAR Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	96		15-120
2,4,6-Tribromophenol	61		10-120
4-Terphenyl-d14	113		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/18/19 14:54
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/17/19 15:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01 Date Collected: 07/16/19 13:20

Client ID: HVRA-AAG-PW01 Date Received: 07/16/19

Sample Location: AAG HANGAR Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		21-120
Phenol-d6	56		10-120
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	95		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	107		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/25/19 11:30
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 07/23/19 08:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	36		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-04
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/17/19 10:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 07/30/19 16:17
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 07/29/19 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	191		ng/l	20.0	4.08	1
Perfluoropentanoic Acid (PFPeA)	838		ng/l	20.0	3.96	1
Perfluorobutanesulfonic Acid (PFBS)	23.6		ng/l	20.0	2.38	1
Perfluorohexanoic Acid (PFHxA)	621		ng/l	20.0	3.28	1
Perfluoroheptanoic Acid (PFHpA)	191		ng/l	20.0	2.25	1
Perfluorohexanesulfonic Acid (PFHxS)	553		ng/l	20.0	3.76	1
Perfluorooctanoic Acid (PFOA)	233		ng/l	20.0	2.36	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2180		ng/l	20.0	13.3	1
Perfluoroheptanesulfonic Acid (PFHpS)	37.6		ng/l	20.0	6.88	1
Perfluorononanoic Acid (PFNA)	21.4		ng/l	20.0	3.12	1
Perfluorooctanesulfonic Acid (PFOS)	1090		ng/l	20.0	5.04	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	20.0	3.04	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	42.4		ng/l	20.0	12.1	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	20.0	6.48	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	20.0	2.60	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	20.0	9.80	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	20.0	5.80	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	20.0	8.04	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	20.0	3.72	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	20.0	3.27	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	20.0	2.48	1
PFOA/PFOS, Total	1320		ng/l	20.0	2.36	1

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-04 Date Collected: 07/17/19 10:00

Client ID: HVRA-AAG-PW01 Date Received: 07/17/19

Sample Location: AAG HANGAR Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	126		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	99		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	103		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	129		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-05
Client ID: TRIP BLANK
Sample Location: AAG HANGAR

Date Collected: 07/17/19 10:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 07/30/19 15:11
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 07/29/19 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.88	0.383	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.88	0.372	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.88	0.224	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.88	0.308	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	0.212	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	0.353	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.88	0.222	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.88	1.25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.88	0.647	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	0.293	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.88	0.474	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.286	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.88	1.14	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.609	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	0.244	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.88	0.921	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.88	0.545	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.756	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.350	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.308	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	0.233	1
PFOA/PFOS, Total	ND		ng/l	1.88	0.222	1

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-05 Date Collected: 07/17/19 10:00

Client ID: TRIP BLANK Date Received: 07/17/19

Sample Location: AAG HANGAR Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	51		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-06
Client ID: FIELD BLANK
Sample Location: AAG HANGAR

Date Collected: 07/17/19 10:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 07/30/19 15:28
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 07/29/19 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-06 Date Collected: 07/17/19 10:00

Client ID: FIELD BLANK Date Received: 07/17/19

Sample Location: AAG HANGAR Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	61		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	85		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 00:44
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/16/19 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260590-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	1.6	J	ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 00:44
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/16/19 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260590-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	90		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/17/19 21:17
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/16/19 17:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1260602-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/17/19 21:17
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/16/19 17:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1260602-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	88		10-120
4-Terphenyl-d14	94		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/25/19 09:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 07/23/19 08:50

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01 Batch: WG1263177-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 07/30/19 14:05
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 07/29/19 09:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04-06 Batch: WG1265710-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 07/30/19 14:05
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 07/29/19 09:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04-06 Batch: WG1265710-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	90		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1260590-2 WG1260590-3								
Bis(2-chloroethyl)ether	68		72		40-140	6		30
3,3'-Dichlorobenzidine	66		69		40-140	4		30
2,4-Dinitrotoluene	68		71		48-143	4		30
2,6-Dinitrotoluene	73		84		40-140	14		30
4-Chlorophenyl phenyl ether	68		73		40-140	7		30
4-Bromophenyl phenyl ether	75		80		40-140	6		30
Bis(2-chloroisopropyl)ether	89		91		40-140	2		30
Bis(2-chloroethoxy)methane	82		75		40-140	9		30
Hexachlorocyclopentadiene	57		65		40-140	13		30
Isophorone	78		80		40-140	3		30
Nitrobenzene	80		78		40-140	3		30
NDPA/DPA	74		75		40-140	1		30
n-Nitrosodi-n-propylamine	84		85		29-132	1		30
Bis(2-ethylhexyl)phthalate	68		81		40-140	17		30
Butyl benzyl phthalate	78		80		40-140	3		30
Di-n-butylphthalate	72		77		40-140	7		30
Di-n-octylphthalate	70		80		40-140	13		30
Diethyl phthalate	77		80		40-140	4		30
Dimethyl phthalate	77		86		40-140	11		30
Biphenyl	62		67		40-140	8		30
4-Chloroaniline	74		77		40-140	4		30
2-Nitroaniline	74		81		52-143	9		30
3-Nitroaniline	60		63		25-145	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1260590-2 WG1260590-3								
4-Nitroaniline	67		70		51-143	4		30
Dibenzofuran	67		69		40-140	3		30
1,2,4,5-Tetrachlorobenzene	58		66		2-134	13		30
Acetophenone	66		66		39-129	0		30
2,4,6-Trichlorophenol	74		82		30-130	10		30
p-Chloro-m-cresol	83		86		23-97	4		30
2-Chlorophenol	71		73		27-123	3		30
2,4-Dichlorophenol	71		76		30-130	7		30
2,4-Dimethylphenol	62		57		30-130	8		30
2-Nitrophenol	76		79		30-130	4		30
4-Nitrophenol	73		74		10-80	1		30
2,4-Dinitrophenol	70		70		20-130	0		30
4,6-Dinitro-o-cresol	81		87		20-164	7		30
Phenol	55		62		12-110	12		30
3-Methylphenol/4-Methylphenol	75		77		30-130	3		30
2,4,5-Trichlorophenol	72		85		30-130	17		30
Carbazole	78		83		55-144	6		30
Atrazine	110		120		40-140	9		30
Benzaldehyde	69		68		40-140	1		30
Caprolactam	56		51		10-130	9		30
2,3,4,6-Tetrachlorophenol	73		77		40-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1260590-2 WG1260590-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	61		64		21-120
Phenol-d6	55		61		10-120
Nitrobenzene-d5	79		79		23-120
2-Fluorobiphenyl	71		77		15-120
2,4,6-Tribromophenol	73		77		10-120
4-Terphenyl-d14	83		83		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1260602-2 WG1260602-3								
Acenaphthene	81		83		40-140	2		40
2-Chloronaphthalene	78		80		40-140	3		40
Fluoranthene	83		92		40-140	10		40
Hexachlorobutadiene	59		60		40-140	2		40
Naphthalene	73		75		40-140	3		40
Benzo(a)anthracene	84		93		40-140	10		40
Benzo(a)pyrene	86		96		40-140	11		40
Benzo(b)fluoranthene	86		96		40-140	11		40
Benzo(k)fluoranthene	87		98		40-140	12		40
Chrysene	82		91		40-140	10		40
Acenaphthylene	81		85		40-140	5		40
Anthracene	84		92		40-140	9		40
Benzo(ghi)perylene	85		94		40-140	10		40
Fluorene	82		86		40-140	5		40
Phenanthrene	82		90		40-140	9		40
Dibenzo(a,h)anthracene	90		100		40-140	11		40
Indeno(1,2,3-cd)pyrene	90		98		40-140	9		40
Pyrene	83		92		40-140	10		40
2-Methylnaphthalene	77		78		40-140	1		40
Pentachlorophenol	88		101		40-140	14		40
Hexachlorobenzene	83		87		40-140	5		40
Hexachloroethane	63		66		40-140	5		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1260602-2 WG1260602-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	60		64		21-120
Phenol-d6	50		54		10-120
Nitrobenzene-d5	83		85		23-120
2-Fluorobiphenyl	75		76		15-120
2,4,6-Tribromophenol	97		105		10-120
4-Terphenyl-d14	92		101		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG1263177-2 WG1263177-3								
1,4-Dioxane	110		108		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	35		34		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04-06 Batch: WG1265710-2 WG1265710-3								
Perfluorobutanoic Acid (PFBA)	111		108		67-148	3		30
Perfluoropentanoic Acid (PFPeA)	112		108		63-161	4		30
Perfluorobutanesulfonic Acid (PFBS)	100		98		65-157	2		30
Perfluorohexanoic Acid (PFHxA)	123		119		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	118		112		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	85		82		69-177	4		30
Perfluorooctanoic Acid (PFOA)	119		111		63-159	7		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	107		107		49-187	0		30
Perfluoroheptanesulfonic Acid (PFHpS)	104		100		61-179	4		30
Perfluorononanoic Acid (PFNA)	114		110		68-171	4		30
Perfluorooctanesulfonic Acid (PFOS)	78		75		52-151	4		30
Perfluorodecanoic Acid (PFDA)	118		116		63-171	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	110		92		56-173	18		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		102		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	113		106		60-153	6		30
Perfluorodecanesulfonic Acid (PFDS)	83		83		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	112		95		46-170	16		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	89		103		45-170	15		30
Perfluorododecanoic Acid (PFDoA)	96		94		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	122		104		48-158	16		30
Perfluorotetradecanoic Acid (PFTA)	111		104		59-182	7		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931312

Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04-06 Batch: WG1265710-2 WG1265710-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	103		108		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	81		92		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		115		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		100		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		95		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		89		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82		84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		94		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	29		39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		70		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		98		33-143

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 07/20/19 18:21
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 21:08
Cleanup Method: EPA 3665A
Cleanup Date: 07/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	102		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	94		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/19/19 14:54
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 21:08
Cleanup Method: EPA 3665A
Cleanup Date: 07/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1261777-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	89		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1261777-2 WG1261777-3									
Aroclor 1016	**28**	Q	85		40-140	**100**	Q	50	A
Aroclor 1260	**26**	Q	86		40-140	**108**	Q	50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	**24**	Q	78		30-150	A
Decachlorobiphenyl	31		100		30-150	A
2,4,5,6-Tetrachloro-m-xylene	**24**	Q	75		30-150	B
Decachlorobiphenyl	31		92		30-150	B

METALS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR
Sample Depth:
Matrix: Water

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Antimony, Total	0.00097	J	mg/l	0.00400	0.00042	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00022	J	mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Barium, Total	0.05878		mg/l	0.00050	0.00017	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Calcium, Total	102.		mg/l	0.100	0.0394	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Chromium, Total	0.00024	J	mg/l	0.00100	0.00017	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Cobalt, Total	0.00039	J	mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Copper, Total	0.02239		mg/l	0.00100	0.00038	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Iron, Total	0.0299	J	mg/l	0.0700	0.0191	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Lead, Total	0.00238		mg/l	0.00100	0.00034	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Magnesium, Total	18.6		mg/l	0.0700	0.0242	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Manganese, Total	0.1805		mg/l	0.00100	0.00044	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/22/19 11:22	07/23/19 02:18	EPA 7470A	1,7470A	GD
Nickel, Total	0.00071	J	mg/l	0.00200	0.00055	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Potassium, Total	2.44		mg/l	0.100	0.0309	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Sodium, Total	157.		mg/l	0.100	0.0293	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM
Zinc, Total	0.00774	J	mg/l	0.01000	0.00341	1	07/20/19 11:10	07/22/19 20:17	EPA 3005A	1,6020B	AM

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 07/31/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1262436-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Antimony, Total	0.00090	J	mg/l	0.00400	0.00042	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Iron, Total	0.0215	J	mg/l	0.0700	0.0191	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Thallium, Total	0.00028	J	mg/l	0.00050	0.00014	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1262816-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/22/19 11:22	07/23/19 01:25	1,7470A	GD

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931312

Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1262436-2								
Aluminum, Total	106		-		80-120	-		
Antimony, Total	82		-		80-120	-		
Arsenic, Total	114		-		80-120	-		
Barium, Total	107		-		80-120	-		
Beryllium, Total	103		-		80-120	-		
Cadmium, Total	110		-		80-120	-		
Calcium, Total	113		-		80-120	-		
Chromium, Total	102		-		80-120	-		
Cobalt, Total	102		-		80-120	-		
Copper, Total	100		-		80-120	-		
Iron, Total	107		-		80-120	-		
Lead, Total	115		-		80-120	-		
Magnesium, Total	114		-		80-120	-		
Manganese, Total	102		-		80-120	-		
Nickel, Total	101		-		80-120	-		
Potassium, Total	113		-		80-120	-		
Selenium, Total	105		-		80-120	-		
Silver, Total	102		-		80-120	-		
Sodium, Total	104		-		80-120	-		
Thallium, Total	111		-		80-120	-		
Vanadium, Total	104		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1262436-2					
Zinc, Total	105	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1262816-2					
Mercury, Total	100	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262436-3 WG1262436-4 QC Sample: L1931311-02 Client ID: MS Sample												
Aluminum, Total	0.220	2	2.32	105		2.44	111		75-125	5		20
Antimony, Total	0.00098J	0.5	0.6594	**132**	Q	0.6382	**128**	Q	75-125	3		20
Arsenic, Total	0.00168	0.12	0.1306	107		0.1286	106		75-125	2		20
Barium, Total	0.06271	2	2.182	106		2.173	106		75-125	0		20
Beryllium, Total	ND	0.05	0.05055	101		0.05250	105		75-125	4		20
Cadmium, Total	ND	0.051	0.05754	113		0.05617	110		75-125	2		20
Calcium, Total	149.	10	154	**50**	Q	160	110		75-125	4		20
Chromium, Total	0.00065J	0.2	0.2011	100		0.2029	101		75-125	1		20
Cobalt, Total	0.01258	0.5	0.5162	101		0.5182	101		75-125	0		20
Copper, Total	0.00214	0.25	0.2467	98		0.2623	104		75-125	6		20
Iron, Total	1.73	1	2.87	114		2.96	123		75-125	3		20
Lead, Total	0.00090J	0.51	0.6560	**129**	Q	0.5707	112		75-125	14		20
Magnesium, Total	71.0	10	77.0	**60**	Q	80.1	91		75-125	4		20
Manganese, Total	2.978	0.5	3.239	**52**	Q	3.289	**62**	Q	75-125	2		20
Nickel, Total	0.04437	0.5	0.5478	101		0.5475	101		75-125	0		20
Potassium, Total	3.05	10	13.6	106		14.0	110		75-125	3		20
Selenium, Total	ND	0.12	0.126	105		0.141	118		75-125	11		20
Silver, Total	ND	0.05	0.05230	105		0.05168	103		75-125	1		20
Sodium, Total	10.1	10	20.0	99		20.4	103		75-125	2		20
Thallium, Total	ND	0.12	0.1486	124		0.1308	109		75-125	13		20
Vanadium, Total	ND	0.5	0.5205	104		0.5172	103		75-125	1		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262436-3 WG1262436-4 QC Sample: L1931311-02 Client ID: MS Sample												
Zinc, Total	0.01409	0.5	0.5370	104		0.6631	**130**	Q	75-125	**21**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262816-3 WG1262816-4 QC Sample: L1931311-02 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00252	**50**	Q	0.00249	**50**	Q	75-125	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

SAMPLE RESULTS

Lab ID: L1931312-01
Client ID: HVRA-AAG-PW01
Sample Location: AAG HANGAR

Date Collected: 07/16/19 13:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	07/18/19 11:45	07/18/19 15:13	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1261461-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	07/18/19 11:45	07/18/19 14:56	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931312

Report Date: 07/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1261461-2 WG1261461-3								
Cyanide, Total	107		103		85-115	4		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1261461-4 WG1261461-5 QC Sample: L1931271-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.203	102		0.194	97		80-120	5		20

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 07/31/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
A1	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931312-01A	Plastic 250ml HNO3 preserved	A	<2	<2	2.9	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1931312-01B	Plastic 250ml NaOH preserved	A	>12	>12	2.9	Y	Absent		TCN-9010(14)
L1931312-01C	Amber 120ml unpreserved	A	7	7	2.9	Y	Absent		NYTCL-8082-LVI(7)
L1931312-01D	Amber 120ml unpreserved	A	N/A	N/A	2.9	Y	Absent		NYTCL-8082-LVI(7)
L1931312-01E	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931312-01F	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931312-01G	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1931312-01H	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1931312-02A	Plastic 250ml Trizma preserved	A	NA		2.9	Y	Absent		HOLD-537(14)
L1931312-03A	Plastic 250ml Trizma preserved	A	NA		2.9	Y	Absent		HOLD-537(14)
L1931312-03B	Plastic 250ml Trizma preserved	A	NA		2.9	Y	Absent		HOLD-537(14)
L1931312-04A	2 Plastic Trizma/1 Plastic/1 H20+Trizma	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-04B	2 Plastic Trizma/1 Plastic/1 H20+Trizma	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-05A	2 Plastic/1 Plastic/1 H20 Plastic	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-06A	2 Plastic/1 Plastic/1 H20 Plastic	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1931312
Project Number:	18.8090	**Report Date:**	07/31/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab: 7/16/19

ALPHA Job #: L1931312

Client Information
Client: CT Male
Address: 12 Raymond Avenue
Poughkeepsie, NY 12603
Phone: 914-743-7400
Fax:
Email:

Project Information
Project Name: HVRA
Project Location: AAG Hangar
Project #: 18.8090
(Use Project name as Project #) ☐
Project Manager: ~~Tim M~~ DJM David Lent
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS DJM ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Send Results to d.lent@ctmale.com

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	1,4 Dioxane	TCL - SVOCs	TCL - PCBs	TAL Metals	TCN			Sample Specific Comments	Total Bottle
31312-01	HVRA - AAG - AW01	07/16/19	1320	Water	DJM	X	X	X	X	X	X				

Container Type: P A A A P P
Preservative: A A A C E

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	7/16/19 17:40		7/16/19 17:40
	7/16/19 19:20		7/16/19 1945
	7/16 2555		7/16/19 23:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 7/18/19

ALPHA Job #: L1931312

Client Information
Client: C.T. Male
Address: 12 Raymond Ave
Poughkeepsie NY
Phone: 845 592 1162
Fax:
Email: dolent@ctmale.com

Project Information
Project Name: HVRA
Project Location: AAG Hangar
Project #: 18.8090
(Use Project name as Project #)
Project Manager: David Lent
ALPHAQuote #:

Turn-Around Time
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

These samples have been previously analyzed by Alpha [ ]

Other project specific requirements/comments:

Send results to dolent@ctmale.com

Please specify Metals or TAL.

Deliverables
[ ] ASP-A [X] ASP-B
[ ] EQuIS (1 File) [X] EQuIS (4 File)
[ ] Other

Billing Information
[ ] Same as Client Info
PO #

Regulatory Requirement
[ ] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use
[ ] NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [ ] NY
[ ] Other:

ANALYSIS
TCL VOC 8260 DEC PFAS 537

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
931312 -4	HVRA-AAG-PW01	7/17/19	10:00	W	DL	
-5	~~FB~~ Field Blank	7/17/19	10:00	W	DL	
-6	FB Trip Blank	7/17/19	10:00	W	DL	

Container Type: P
Preservative: D

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	7/17/19 1706	AHL	7-17-19 1706
AHL	7-17-19 1950		7/18/19 2000
	7/18/19 0140		7/18/19 0140
	07/18/19 0525		7/18/19 5:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1932867
Client:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, NY 12603
ATTN:	David Lent
Phone:	(845) 454-4400
Project Name:	HUDSON VALLEY REGIONAL AIRPORT
Project Number:	18.8090
Report Date:	08/02/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1932867-01	OUTFALL-003-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 11:30	07/24/19
L1932867-02	OUTFALL-002-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 11:50	07/24/19
L1932867-03	OUTFALL-004-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 12:10	07/24/19
L1932867-04	OUTFALL-005-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 12:30	07/24/19
L1932867-05	OUTFALL-006-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 13:15	07/24/19
L1932867-06	OUTFALL-007-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 13:30	07/24/19
L1932867-07	FIRE POND-01-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 14:00	07/24/19
L1932867-08	FIRE POND-01-W	WATER	WAPPINGERS FALLS, NY	07/24/19 14:10	07/24/19
L1932867-09	FIRE POND-02-S	SOIL	WAPPINGERS FALLS, NY	07/24/19 14:25	07/24/19
L1932867-10	FIRE POND-02-W	WATER	WAPPINGERS FALLS, NY	07/24/19 14:35	07/24/19
L1932867-11	FIELD BLANK	WATER	WAPPINGERS FALLS, NY	07/24/19 14:45	07/24/19
L1932867-12	TRIP BLANK	WATER	WAPPINGERS FALLS, NY	07/24/19 14:50	07/24/19

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932867
Project Number:	18.8090	**Report Date:**	08/02/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932867
Project Number:	18.8090	**Report Date:**	08/02/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1932867-05: The sample identified as "OUTFALL-006-S" on the chain of custody was identified as "no id's on label" on the container label. At the client's request, the sample is reported as "OUTFALL-006-S".

Perfluorinated Alkyl Acids by Isotope Dilution

L1932867-06 and -09: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1266495-4 MS recoveries, performed on L1932867-08, are outside the acceptance criteria for 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts) (24%) and perfluorooctanesulfonic acid (pfos) (29%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Elizabeth Porta

Title: Technical Director/Representative Date: 08/02/19

ORGANICS

SEMIVOLATILES

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-01
Client ID: OUTFALL-003-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 11:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 03:32
Analyst: PS
Percent Solids: 71%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	10.4	2.65	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	78		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-01
Client ID: OUTFALL-003-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 11:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 06:59
Analyst: JW
Percent Solids: 71%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.033	J	ug/kg	1.25	0.028	1
Perfluoropentanoic Acid (PFPeA)	0.098	J	ug/kg	1.25	0.058	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.25	0.049	1
Perfluorohexanoic Acid (PFHxA)	0.083	J	ug/kg	1.25	0.066	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.25	0.057	1
Perfluorohexanesulfonic Acid (PFHxS)	1.86		ug/kg	1.25	0.076	1
Perfluorooctanoic Acid (PFOA)	0.085	J	ug/kg	1.25	0.053	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.25	0.225	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.25	0.171	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.25	0.094	1
Perfluorooctanesulfonic Acid (PFOS)	7.57		ug/kg	1.25	0.163	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.25	0.084	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.25	0.360	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.25	0.252	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.25	0.059	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.25	0.192	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.25	0.123	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.25	0.106	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.25	0.088	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.25	0.256	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.25	0.068	1
PFOA/PFOS, Total	7.66	J	ug/kg	1.25	0.053	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-01 Date Collected: 07/24/19 11:30

Client ID: OUTFALL-003-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	63		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	65		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-02
Client ID: OUTFALL-002-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 11:50
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 07:15
Analyst: JW
Percent Solids: 82%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.035	J	ug/kg	1.14	0.026	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.14	0.053	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.14	0.045	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.14	0.060	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.14	0.052	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.14	0.069	1
Perfluorooctanoic Acid (PFOA)	0.109	J	ug/kg	1.14	0.048	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.14	0.205	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.14	0.156	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.14	0.086	1
Perfluorooctanesulfonic Acid (PFOS)	1.09	J	ug/kg	1.14	0.149	1
Perfluorodecanoic Acid (PFDA)	0.103	J	ug/kg	1.14	0.077	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.14	0.328	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.14	0.230	1
Perfluoroundecanoic Acid (PFUnA)	0.153	J	ug/kg	1.14	0.054	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.14	0.175	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.14	0.112	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.14	0.097	1
Perfluorododecanoic Acid (PFDoA)	0.225	J	ug/kg	1.14	0.080	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.14	0.234	1
Perfluorotetradecanoic Acid (PFTA)	0.137	J	ug/kg	1.14	0.062	1
PFOA/PFOS, Total	1.20	J	ug/kg	1.14	0.048	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-02 Date Collected: 07/24/19 11:50

Client ID: OUTFALL-002-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	68		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	29		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-02 D
Client ID: OUTFALL-002-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 11:50
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 03:59
Analyst: PS
Percent Solids: 82%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	93.4	23.8	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	74		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-03
Client ID: OUTFALL-004-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 12:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 07:49
Analyst: JW
Percent Solids: 25%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.278	J	ug/kg	3.53	0.080	1
Perfluoropentanoic Acid (PFPeA)	0.201	J	ug/kg	3.53	0.162	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	3.53	0.138	1
Perfluorohexanoic Acid (PFHxA)	0.236	J	ug/kg	3.53	0.185	1
Perfluoroheptanoic Acid (PFHpA)	0.245	J	ug/kg	3.53	0.159	1
Perfluorohexanesulfonic Acid (PFHxS)	2.15	J	ug/kg	3.53	0.213	1
Perfluorooctanoic Acid (PFOA)	0.462	J	ug/kg	3.53	0.148	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	3.53	0.633	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	3.53	0.481	1
Perfluorononanoic Acid (PFNA)	0.455	J	ug/kg	3.53	0.264	1
Perfluorooctanesulfonic Acid (PFOS)	7.80		ug/kg	3.53	0.458	1
Perfluorodecanoic Acid (PFDA)	0.589	J	ug/kg	3.53	0.236	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	3.53	1.01	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	3.53	0.710	1
Perfluoroundecanoic Acid (PFUnA)	0.760	J	ug/kg	3.53	0.165	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	3.53	0.540	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	3.53	0.346	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	3.53	0.298	1
Perfluorododecanoic Acid (PFDoA)	0.557	J	ug/kg	3.53	0.247	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	3.53	0.721	1
Perfluorotetradecanoic Acid (PFTA)	0.335	J	ug/kg	3.53	0.190	1
PFOA/PFOS, Total	8.26	J	ug/kg	3.53	0.148	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-03 Date Collected: 07/24/19 12:10

Client ID: OUTFALL-004-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	79		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	77		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	63		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	79		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	55		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-03 D
Client ID: OUTFALL-004-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 12:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 04:26
Analyst: PS
Percent Solids: 25%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	127	32.3	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	75		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-04
Client ID: OUTFALL-005-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 12:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 08:05
Analyst: JW
Percent Solids: 68%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.653	J	ug/kg	1.34	0.030	1
Perfluoropentanoic Acid (PFPeA)	3.37		ug/kg	1.34	0.062	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.34	0.052	1
Perfluorohexanoic Acid (PFHxA)	1.52		ug/kg	1.34	0.070	1
Perfluoroheptanoic Acid (PFHpA)	1.09	J	ug/kg	1.34	0.060	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.34	0.081	1
Perfluorooctanoic Acid (PFOA)	0.637	J	ug/kg	1.34	0.056	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	3.51		ug/kg	1.34	0.240	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.34	0.183	1
Perfluorononanoic Acid (PFNA)	0.560	J	ug/kg	1.34	0.100	1
Perfluorooctanesulfonic Acid (PFOS)	1.84		ug/kg	1.34	0.174	1
Perfluorodecanoic Acid (PFDA)	0.253	J	ug/kg	1.34	0.090	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.86		ug/kg	1.34	0.384	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.34	0.270	1
Perfluoroundecanoic Acid (PFUnA)	0.405	J	ug/kg	1.34	0.063	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.34	0.205	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.34	0.131	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.34	0.113	1
Perfluorododecanoic Acid (PFDoA)	0.193	J	ug/kg	1.34	0.094	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.34	0.274	1
Perfluorotetradecanoic Acid (PFTA)	0.089	J	ug/kg	1.34	0.072	1
PFOA/PFOS, Total	2.48	J	ug/kg	1.34	0.056	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-04 Date Collected: 07/24/19 12:30

Client ID: OUTFALL-005-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	90		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	67		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-04 D
Client ID: OUTFALL-005-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 12:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 04:53
Analyst: PS
Percent Solids: 68%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	42.6	10.9	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	69		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-05
Client ID: OUTFALL-006-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 13:15
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 08:22
Analyst: JW
Percent Solids: 80%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.080	J	ug/kg	1.20	0.027	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.20	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.20	0.047	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.20	0.063	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.20	0.054	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.20	0.073	1
Perfluorooctanoic Acid (PFOA)	0.137	J	ug/kg	1.20	0.050	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.20	0.215	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.20	0.164	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.20	0.090	1
Perfluorooctanesulfonic Acid (PFOS)	0.360	J	ug/kg	1.20	0.156	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.20	0.080	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.20	0.344	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.20	0.242	1
Perfluoroundecanoic Acid (PFUnA)	0.056	J	ug/kg	1.20	0.056	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.20	0.184	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.20	0.118	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.20	0.101	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.20	0.084	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.20	0.245	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.20	0.065	1
PFOA/PFOS, Total	0.497	J	ug/kg	1.20	0.050	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-05 Date Collected: 07/24/19 13:15

Client ID: OUTFALL-006-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-05 D
Client ID: OUTFALL-006-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 13:15
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 05:20
Analyst: PS
Percent Solids: 80%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	33.7	8.59	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	70		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-06
Client ID: OUTFALL-007-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 13:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 08:38
Analyst: JW
Percent Solids: 88%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.06	0.024	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.06	0.049	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.06	0.042	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.06	0.056	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.06	0.048	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.06	0.064	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.06	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.06	0.191	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.06	0.145	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.06	0.080	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.06	0.138	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.06	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.06	0.305	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.06	0.214	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.06	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.06	0.163	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.06	0.104	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.06	0.090	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.06	0.075	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.06	0.218	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.06	0.058	1
PFOA/PFOS, Total	ND		ug/kg	1.06	0.045	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-06 Date Collected: 07/24/19 13:30

Client ID: OUTFALL-007-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	69		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	78		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**0**	Q	1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-06 D
Client ID: OUTFALL-007-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 13:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 05:47
Analyst: PS
Percent Solids: 88%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	32.2	8.20	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	73		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-07
Client ID: FIRE POND-01-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 08:55
Analyst: JW
Percent Solids: 73%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.245	J	ug/kg	1.29	0.029	1
Perfluoropentanoic Acid (PFPeA)	0.422	J	ug/kg	1.29	0.059	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.29	0.050	1
Perfluorohexanoic Acid (PFHxA)	0.342	J	ug/kg	1.29	0.068	1
Perfluoroheptanoic Acid (PFHpA)	0.160	J	ug/kg	1.29	0.058	1
Perfluorohexanesulfonic Acid (PFHxS)	2.27		ug/kg	1.29	0.078	1
Perfluorooctanoic Acid (PFOA)	0.213	J	ug/kg	1.29	0.054	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.29	0.231	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.29	0.176	1
Perfluorononanoic Acid (PFNA)	0.147	J	ug/kg	1.29	0.097	1
Perfluorooctanesulfonic Acid (PFOS)	11.6		ug/kg	1.29	0.167	1
Perfluorodecanoic Acid (PFDA)	0.122	J	ug/kg	1.29	0.086	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.29	0.370	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.29	0.260	1
Perfluoroundecanoic Acid (PFUnA)	0.243	J	ug/kg	1.29	0.060	1
Perfluorodecanesulfonic Acid (PFDS)	0.345	J	ug/kg	1.29	0.197	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.29	0.126	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.29	0.109	1
Perfluorododecanoic Acid (PFDoA)	0.128	J	ug/kg	1.29	0.090	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.29	0.263	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.29	0.070	1
PFOA/PFOS, Total	11.8	J	ug/kg	1.29	0.054	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-07 Date Collected: 07/24/19 14:00

Client ID: FIRE POND-01-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	92		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	69		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-07 D
Client ID: FIRE POND-01-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 06:13
Analyst: PS
Percent Solids: 73%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	41.2	10.5	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	72		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-08
Client ID: FIRE POND-01-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/27/19 02:26
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 07/26/19 18:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	163	36.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	42		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-08
Client ID: FIRE POND-01-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 03:24
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	36.2		ng/l	1.82	0.372	1
Perfluoropentanoic Acid (PFPeA)	107		ng/l	1.82	0.361	1
Perfluorobutanesulfonic Acid (PFBS)	6.27		ng/l	1.82	0.217	1
Perfluorohexanoic Acid (PFHxA)	70.4		ng/l	1.82	0.299	1
Perfluoroheptanoic Acid (PFHpA)	24.4		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	83.4		ng/l	1.82	0.343	1
Perfluorooctanoic Acid (PFOA)	26.1		ng/l	1.82	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	292		ng/l	1.82	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.70		ng/l	1.82	0.628	1
Perfluorononanoic Acid (PFNA)	4.46		ng/l	1.82	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	214		ng/l	1.82	0.460	1
Perfluorodecanoic Acid (PFDA)	0.945	J	ng/l	1.82	0.277	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.36		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.591	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.894	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.529	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.339	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.298	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.226	1
PFOA/PFOS, Total	240		ng/l	1.82	0.215	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-08 Date Collected: 07/24/19 14:10

Client ID: FIRE POND-01-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	79		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	150		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	50		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-09
Client ID: FIRE POND-02-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:25
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 09:11
Analyst: JW
Percent Solids: 82%

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.342	J	ug/kg	1.21	0.027	1
Perfluoropentanoic Acid (PFPeA)	0.737	J	ug/kg	1.21	0.056	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.21	0.047	1
Perfluorohexanoic Acid (PFHxA)	0.218	J	ug/kg	1.21	0.064	1
Perfluoroheptanoic Acid (PFHpA)	0.215	J	ug/kg	1.21	0.055	1
Perfluorohexanesulfonic Acid (PFHxS)	0.208	J	ug/kg	1.21	0.073	1
Perfluorooctanoic Acid (PFOA)	0.212	J	ug/kg	1.21	0.051	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.21	0.217	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.21	0.165	1
Perfluorononanoic Acid (PFNA)	0.206	J	ug/kg	1.21	0.091	1
Perfluorooctanesulfonic Acid (PFOS)	7.83		ug/kg	1.21	0.157	1
Perfluorodecanoic Acid (PFDA)	0.100	J	ug/kg	1.21	0.081	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.21	0.347	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.21	0.244	1
Perfluoroundecanoic Acid (PFUnA)	0.132	J	ug/kg	1.21	0.057	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.21	0.185	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.21	0.118	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.21	0.102	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.21	0.085	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.21	0.247	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.21	0.065	1
PFOA/PFOS, Total	8.04	J	ug/kg	1.21	0.051	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-09 Date Collected: 07/24/19 14:25

Client ID: FIRE POND-02-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	61		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	67		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**59**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**60**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	73		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	62		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	50		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	66		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	66		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**62**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**33**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**30**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	59		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**19**	Q	26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-09 D
Client ID: FIRE POND-02-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:25
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 06:39
Analyst: PS
Percent Solids: 82%

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	34.5	8.81	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	68		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-10
Client ID: FIRE POND-02-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:35
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 03:40
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	35.1		ng/l	1.79	0.366	1
Perfluoropentanoic Acid (PFPeA)	99.6		ng/l	1.79	0.355	1
Perfluorobutanesulfonic Acid (PFBS)	6.39		ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	65.2		ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	22.8		ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	78.0		ng/l	1.79	0.337	1
Perfluorooctanoic Acid (PFOA)	23.8		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	226		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.79		ng/l	1.79	0.616	1
Perfluorononanoic Acid (PFNA)	4.26		ng/l	1.79	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	195		ng/l	1.79	0.452	1
Perfluorodecanoic Acid (PFDA)	1.03	J	ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.28		ng/l	1.79	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.581	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.233	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.878	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.520	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.720	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.333	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.293	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	219		ng/l	1.79	0.211	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-10 Date Collected: 07/24/19 14:35

Client ID: FIRE POND-02-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	145		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	64		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	42		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-10 D
Client ID: FIRE POND-02-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:35
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/27/19 02:50
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 07/26/19 18:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	600	136.	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-11
Client ID: FIELD BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 04:13
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.08	0.425	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.08	0.412	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.08	0.248	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.08	0.342	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.08	0.234	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.08	0.392	1
Perfluorooctanoic Acid (PFOA)	1.24	J	ng/l	2.08	0.246	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.08	1.39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.08	0.717	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.08	0.325	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.08	0.525	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.08	0.317	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.08	1.26	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.08	0.675	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.08	0.271	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.08	1.02	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.08	0.604	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.08	0.838	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.08	0.388	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.08	0.341	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.08	0.258	1
PFOA/PFOS, Total	1.24	J	ng/l	2.08	0.246	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-11 Date Collected: 07/24/19 14:45

Client ID: FIELD BLANK Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	92		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	54		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	55		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	43		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	41		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-12
Client ID: TRIP BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:50
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 04:30
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.363	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.352	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.212	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.292	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.200	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.334	1
Perfluorooctanoic Acid (PFOA)	0.886	J	ng/l	1.78	0.210	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.612	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.278	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.448	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.270	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	1.08	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.576	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.231	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.872	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.516	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.715	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.331	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.291	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.221	1
PFOA/PFOS, Total	0.886	J	ng/l	1.78	0.210	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-12 Date Collected: 07/24/19 14:50

Client ID: TRIP BLANK Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	54		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/27/19 00:49
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 07/26/19 18:55

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 08,10 Batch: WG1265196-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	36		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 02:09
Analyst: PS

Extraction Method: EPA 3570
Extraction Date: 07/28/19 09:35

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-07,09 Batch: WG1265516-1					
1,4-Dioxane	ND		ug/kg	8.00	2.04

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	77		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 07/31/19 22:42
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07,09 Batch: WG1266199-1					
Perfluorobutanoic Acid (PFBA)	0.098	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	0.113	J	ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	0.048	J	ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 07/31/19 22:42
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07,09 Batch: WG1266199-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	57		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/01/19 05:03
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08,10-12 Batch: WG1266495-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	0.876	J	ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	0.876	J	ng/l	2.00	0.236

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/01/19 05:03
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08,10-12 Batch: WG1266495-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	87		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932867

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 08,10		Batch: WG1265196-2 WG1265196-3					
1,4-Dioxane	122		119		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	36		38		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-07,09		Batch: WG1265516-2		WG1265516-3			
1,4-Dioxane	108		108		40-140	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	80		81		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG1266199-2 WG1266199-3								
Perfluorobutanoic Acid (PFBA)	107		107		71-135	0		30
Perfluoropentanoic Acid (PFPeA)	107		107		69-132	0		30
Perfluorobutanesulfonic Acid (PFBS)	100		101		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	115		114		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	103		104		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	112		112		67-130	0		30
Perfluorooctanoic Acid (PFOA)	107		107		69-133	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	103		120		64-140	15		30
Perfluoroheptanesulfonic Acid (PFHpS)	106		107		70-132	1		30
Perfluorononanoic Acid (PFNA)	111		111		72-129	0		30
Perfluorooctanesulfonic Acid (PFOS)	91		93		68-136	2		30
Perfluorodecanoic Acid (PFDA)	114		114		69-133	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	104		98		65-137	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	108		115		63-144	6		30
Perfluoroundecanoic Acid (PFUnA)	100		98		64-136	2		30
Perfluorodecanesulfonic Acid (PFDS)	111		110		59-134	1		30
Perfluorooctanesulfonamide (FOSA)	98		133		67-137	30		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	101		103		61-139	2		30
Perfluorododecanoic Acid (PFDoA)	108		104		69-135	4		30
Perfluorotridecanoic Acid (PFTrDA)	102		102		66-139	0		30
Perfluorotetradecanoic Acid (PFTA)	120		123		69-133	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG1266199-2 WG1266199-3

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		77		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81		84		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		87		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		80		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		82		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		86		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		85		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	76		67		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		87		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		88		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		84		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		83		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		68		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		89		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		67		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		83		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		71		26-160

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 Batch: WG1266495-2 WG1266495-3								
Perfluorobutanoic Acid (PFBA)	92		92		67-148	0		30
Perfluoropentanoic Acid (PFPeA)	98		96		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	96		95		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	103		102		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	93		93		58-159	0		30
Perfluorohexanesulfonic Acid (PFHxS)	100		97		69-177	3		30
Perfluorooctanoic Acid (PFOA)	99		95		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	90		96		49-187	6		30
Perfluoroheptanesulfonic Acid (PFHpS)	99		102		61-179	3		30
Perfluorononanoic Acid (PFNA)	100		99		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	83		82		52-151	1		30
Perfluorodecanoic Acid (PFDA)	101		101		63-171	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	92		100		56-173	8		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	88		88		60-166	0		30
Perfluoroundecanoic Acid (PFUnA)	85		87		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	92		94		38-156	2		30
Perfluorooctanesulfonamide (FOSA)	88		92		46-170	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		86		45-170	0		30
Perfluorododecanoic Acid (PFDoA)	90		92		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	94		96		48-158	2		30
Perfluorotetradecanoic Acid (PFTA)	104		106		59-182	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 Batch: WG1266495-2 WG1266495-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		96		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		73		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		87		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	56		66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		81		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932867

Project Number: 18.8090 ***Report Date:*** 08/02/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1266199-4 QC Sample: L1932867-01 Client ID: OUTFALL-003-S												
Perfluorobutanoic Acid (PFBA)	0.033J	6.05	6.35	105		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	0.098J	6.05	6.61	109		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	6.05	5.98	99		-	-		72-128	-		30
Perfluorohexanoic Acid (PFHxA)	0.083J	6.05	7.14	118		-	-		70-132	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	6.05	6.43	106		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.86	6.05	8.64	112		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	0.085J	6.05	6.44	106		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.05	6.30	104		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	6.05	6.94	115		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	6.05	6.90	114		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	7.57	6.05	13.1	91		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	6.05	6.72	111		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.05	5.92	98		-	-		65-137	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	6.05	7.00	116		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	6.05	5.94	98		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	6.05	6.91	114		-	-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	ND	6.05	6.69	111		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	6.05	6.00	99		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	6.05	6.43	106		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	6.05	6.14	101		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	6.05	7.23	120		-	-		69-133	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932867

Project Number: 18.8090 ***Report Date:*** 08/02/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1266199-4 QC Sample: L1932867-01 Client ID: OUTFALL-003-S												

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86				25-186
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77				32-182
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59				42-136
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63				45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88				64-158
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85				65-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83				61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83				62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91				63-166
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81				56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	49				26-160
Perfluoro[13C4]Butanoic Acid (MPFBA)	86				60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91				65-182
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36				1-125
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89				65-151
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85				62-152
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86				61-154
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92				70-151

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932867

Project Number: 18.8090 ***Report Date:*** 08/02/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 QC Batch ID: WG1266495-4 QC Sample: L1932867-08 Client ID: FIRE POND-01-W												
Perfluorobutanoic Acid (PFBA)	36.2	37.6	69.1	88		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	107	37.6	146	104		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	6.27	37.6	42.9	97		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	70.4	37.6	110	105		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	24.4	37.6	60.4	96		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	83.4	37.6	126	113		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	26.1	37.6	62.2	96		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	292	37.6	301	**24**	Q	-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	2.70	37.6	39.4	98		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	4.46	37.6	42.2	100		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	214	37.6	225	**29**	Q	-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	0.945J	37.6	40.4	107		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.36	37.6	40.7	91		-	-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.6	34.1	91		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.6	32.3	86		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	37.6	30.8	82		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37.6	33.8	90		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37.6	32.1	85		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	37.6	32.6	87		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.6	35.2	94		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.6	39.0	104		-	-		59-182	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932867

Project Number: 18.8090 ***Report Date:*** 08/02/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 QC Batch ID: WG1266495-4 QC Sample: L1932867-08 Client ID: FIRE POND-01-W												

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	147				1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52				1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	71				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	67				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	79				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1266199-5 QC Sample: L1932867-02 Client ID: OUTFALL-002-S						
Perfluorobutanoic Acid (PFBA)	0.035J	0.045J	ug/kg	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ug/kg	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ug/kg	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ug/kg	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ug/kg	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ug/kg	NC		30
Perfluorooctanoic Acid (PFOA)	0.109J	0.077J	ug/kg	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ug/kg	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ug/kg	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ug/kg	NC		30
Perfluorooctanesulfonic Acid (PFOS)	1.09J	0.828J	ug/kg	NC		30
Perfluorodecanoic Acid (PFDA)	0.103J	0.085J	ug/kg	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ug/kg	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ug/kg	NC		30
Perfluoroundecanoic Acid (PFUnA)	0.153J	0.148J	ug/kg	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ug/kg	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ug/kg	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ug/kg	NC		30
Perfluorododecanoic Acid (PFDoA)	0.225J	0.204J	ug/kg	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ug/kg	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1266199-5 QC Sample: L1932867-02 Client ID: OUTFALL-002-S						
Perfluorotetradecanoic Acid (PFTA)	0.137J	0.136J	ug/kg	NC		30
PFOA/PFOS, Total	1.20J	0.905J	ug/kg	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		83		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		94		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		88		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		80		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		79		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		85		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		83		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	68		67		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		85		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		92		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		79		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		76		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		67		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		86		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	29		2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		55		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		79		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		64		26-160

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 QC Batch ID: WG1266495-5 QC Sample: L1932867-10 Client ID: FIRE POND-02-W						
Perfluorobutanoic Acid (PFBA)	35.1	33.8	ng/l	4		30
Perfluoropentanoic Acid (PFPeA)	99.6	94.1	ng/l	6		30
Perfluorobutanesulfonic Acid (PFBS)	6.39	5.91	ng/l	8		30
Perfluorohexanoic Acid (PFHxA)	65.2	61.7	ng/l	6		30
Perfluoroheptanoic Acid (PFHpA)	22.8	21.3	ng/l	7		30
Perfluorohexanesulfonic Acid (PFHxS)	78.0	74.5	ng/l	5		30
Perfluorooctanoic Acid (PFOA)	23.8	26.8	ng/l	12		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	226	211	ng/l	7		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.79	2.04	ng/l	13		30
Perfluorononanoic Acid (PFNA)	4.26	3.77	ng/l	12		30
Perfluorooctanesulfonic Acid (PFOS)	195	185	ng/l	5		30
Perfluorodecanoic Acid (PFDA)	1.03J	1.00J	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.28	4.97	ng/l	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 QC Batch ID: WG1266495-5 QC Sample: L1932867-10 Client ID: FIRE POND-02-W						
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
PFOA/PFOS, Total	219	212	ng/l	0		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		89		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		75		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		81		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	145		154		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		84		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		79		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		82		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		46		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	64		63		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	42		42		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		62		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		67		33-143

INORGANICS
&
MISCELLANEOUS

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Lab Number: L1932867
Project Number: 18.8090
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-01
Client ID: OUTFALL-003-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 11:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	71.1		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-02
Client ID: OUTFALL-002-S
Sample Location: WAPPINGERS FALLS, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/24/19 11:50
Date Received: 07/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	82.3		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-03
Client ID: OUTFALL-004-S
Sample Location: WAPPINGERS FALLS, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/24/19 12:10
Date Received: 07/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	24.5		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-04
Client ID: OUTFALL-005-S
Sample Location: WAPPINGERS FALLS, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/24/19 12:30
Date Received: 07/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	68.2		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-05
Client ID: OUTFALL-006-S
Sample Location: WAPPINGERS FALLS, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/24/19 13:15
Date Received: 07/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	80.1		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932867
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-06
Client ID: OUTFALL-007-S
Sample Location: WAPPINGERS FALLS, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/24/19 13:30
Date Received: 07/24/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.6		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Lab Number: L1932867
Project Number: 18.8090
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-07
Client ID: FIRE POND-01-S
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	72.9		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Lab Number: L1932867
Project Number: 18.8090
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-09
Client ID: FIRE POND-02-S
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 07/24/19 14:25
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	82.3		%	0.100	0.100	1	-	07/26/19 01:15	121,2540G	CC

Lab Duplicate Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1264732-1 QC Sample: L1932616-01 Client ID: DUP Sample						
Solids, Total	77.5	77.1	%	1		10

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932867-01A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-01B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-01C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-02A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-02B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-02C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-03A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-03B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-03C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-04A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-04B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-04C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-05A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-05B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-05C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-06A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-06B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-06C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-07A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-07B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-07C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-08A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932867-08A1	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932867
Report Date: 08/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932867-08B	Plastic 250ml Trizma preserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-08B1	Plastic 250ml Trizma preserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-09A	Glass 60mL/2oz unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1932867-09B	Plastic 8oz unpreserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1932867-09C	Plastic 2oz unpreserved for TS	A	NA		3.8	Y	Absent		A2-TS(7)
L1932867-10A	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932867-10A1	Amber 250ml unpreserved	A	NA		3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932867-10B	Plastic 250ml Trizma preserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-10B1	Plastic 250ml Trizma preserved	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-11A	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-12A	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932867
Project Number:	18.8090	**Report Date:**	08/02/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932867
Project Number:	18.8090	**Report Date:**	08/02/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932867
Project Number:	18.8090	**Report Date:**	08/02/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 7/25/19

ALPHA Job #: L1932567

Client Information
Client: C.T. Male Associates
Address: 12 Raymond Avenue
Poughkeepsie, NY 12603
Phone: 845-454-4400
Fax:
Email: d.lent@ctmale.com

Project Information
Project Name: Hudson Valley Regional Airport
Project Location: Wappingers Falls, NY
Project #: 18.5090
(Use Project name as Project #)
Project Manager: Dave Lent
ALPHAQuote #:

Turn-Around Time
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

Deliverables
[ ] ASP-A [X] ASP-B
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

Regulatory Requirement
[ ] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use
[ ] NYC Sewer Discharge

Billing Information
[ ] Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [ ] NY
[ ] Other:

These samples have been previously analyzed by Alpha [ ]

Other project specific requirements/comments:

Email results to d.lent@ctmale.com

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	1,4 dioxane	Total Solids	PFAS					Sample Specific Comments	Total Bottle
L1932567-01	Outfall-003-S	07/24	1130	Soil	DM	X	X	X							3
-02	Outfall-002-S	07/24	1150	Soil	DM	X	X	X							3
-03	Outfall-004-S	07/24	1210	Soil	DM	X	X	X							3
-04	Outfall-005-S	07/24	1230	Soil	DM	X	X	X							3
-05	Outfall-006-S	07/24	1315	Soil	DM	X	X	X							3
-06	Outfall-007-S	07/24	1330	Soil	DM	X	X	X							3
-07	Fire Pond-01-S	07/24	1400	Soil	DM	X	X	X							3
-08	Fire Pond-01-W	07/24	1410	Water	DM		X		X						4
-09	Fire Pond-02-S	07/24	1455	Soil	DM	X	X	X							3
-10	Fire Pond-02-W	07/24	1435	Water	DM		X		X						4

Container Type: P A P P
Preservative: A A A O

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	07/24/19		7/24/19
	7/24/19 1800		7/25/19 01:16
	7/24/19		7/24/19 1530
	7/25/19 17:9		7/25/19 11:19

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 7/25/19

ALPHA Job #: L1932867

Client Information

Client: C.T. Male Associates
Address: 12 Raymond Avenue
Poughkeepsie, NY 12603
Phone: 845-454-4420
Fax:
Email: J.lent@ctmale.com

Project Information

Project Name: Hudson Valley Regional Airport
Project Location: Wappingers Falls, NY
Project #: 18.8090
(Use Project name as Project #): ☐
Project Manager: Dave Lent
ALPHAQuote #:

Turn-Around Time

Standard: ☒ Due Date:
Rush (only if pre approved): ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Email d.lent@ctmale.com with results

Please specify Metals or TAL.

ANALYSIS

PFAS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	Total Bottle
-11	Field Blank	7/24	1445	W	NM	X	2
-12	Trip Blank	7/24	1450	W	NM	X	1

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P									
Preservative	O									

Relinquished By:	Date/Time	Received By:	Date/Time
	07/24/19 1611		7/24/19 1611
	7/24/19 1800		7/25/19 0610
	7/24/19		7/25/19 1537
	7/25/19 1709		7/25/19 17:09

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1932869
Client:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, NY 12603
ATTN:	David Lent
Phone:	(845) 454-4400
Project Name:	HUDSON VALLEY REGIONAL AIRPORT
Project Number:	18.8090
Report Date:	08/07/19

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508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1932869-01	OUTFALL-007-W	WATER	WAPPINGERS FALLS, NY	07/23/19 14:00	07/24/19
L1932869-02	OUTFALL-006-W	WATER	WAPPINGERS FALLS, NY	07/23/19 14:15	07/24/19
L1932869-03	OUTFALL-003-W	WATER	WAPPINGERS FALLS, NY	07/23/19 14:30	07/24/19
L1932869-04	FIELD BLANK	WATER	WAPPINGERS FALLS, NY	07/23/19 14:40	07/24/19
L1932869-05	OUTFALL-002-W	WATER	WAPPINGERS FALLS, NY	07/23/19 15:00	07/24/19
L1932869-06	OUTFALL-004-W	WATER	WAPPINGERS FALLS, NY	07/23/19 15:10	07/24/19
L1932869-07	OUTFALL-005-W	WATER	WAPPINGERS FALLS, NY	07/23/19 15:20	07/24/19
L1932869-08	OUTFALL-001-W	WATER	WAPPINGERS FALLS, NY	07/23/19 15:45	07/24/19
L1932869-09	TRIP BLANK	WATER	WAPPINGERS FALLS, NY	07/23/19 16:00	07/24/19

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

Case Narrative (continued)

Report Submission

August 07, 2019: This final report includes the results of all requested analyses.

August 01, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L1932869-09: The Trip Blank has a result for acetone present above the reporting limit. The sample vial was verified as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

Perfluorinated Alkyl Acids by Isotope Dilution

L1932869-06: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1268635-2/-3 LCS/LCSD RPDs, associated with L1932869-01 through -08, are above the acceptance criteria for perfluoroheptanesulfonic acid (pfhps) (39%), perfluorooctanesulfonic acid (pfos) (38%), and perfluorodecanesulfonic acid (pfds) (33%).

WG1268999-1: The continuing calibration standard had the response for Perfluorooctanesulfonamide (FOSA) outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1268999-5: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

WG1268999-5: The continuing calibration standard had the response for 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) above the acceptance criteria for the method. The associated samples were non-detect; therefore, no further action was taken.

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

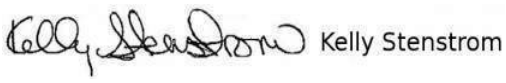
Case Narrative (continued)

Total Metals

The WG1264989-3 MS recovery, performed on L1932869-08, is outside the acceptance criteria for potassium (130%). A post digestion spike was performed and yielded an unacceptable recovery of 127%. The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

The WG1264989-3 MS recovery for sodium (167%), performed on L1932869-08, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 08/07/19

ORGANICS

VOLATILES

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45
Client ID: OUTFALL-001-W Date Received: 07/24/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/29/19 21:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.5		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	115		70-130

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-09
Client ID: TRIP BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 16:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/29/19 22:22
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.92	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-09 Date Collected: 07/23/19 16:00

Client ID: TRIP BLANK Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.7		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	113		70-130

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/29/19 19:25
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1266319-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/29/19 19:25
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1266319-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/29/19 19:25
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1266319-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	112		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1266319-3 WG1266319-4								
Methylene chloride	84		82		70-130	2		20
1,1-Dichloroethane	90		86		70-130	5		20
Chloroform	93		89		70-130	4		20
Carbon tetrachloride	120		110		63-132	9		20
1,2-Dichloropropane	84		82		70-130	2		20
Dibromochloromethane	98		96		63-130	2		20
1,1,2-Trichloroethane	79		78		70-130	1		20
Tetrachloroethene	100		97		70-130	3		20
Chlorobenzene	89		86		75-130	3		20
Trichlorofluoromethane	120		100		62-150	18		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	110		100		67-130	10		20
Bromodichloromethane	92		89		67-130	3		20
trans-1,3-Dichloropropene	72		70		70-130	3		20
cis-1,3-Dichloropropene	81		79		70-130	3		20
Bromoform	81		80		54-136	1		20
1,1,2,2-Tetrachloroethane	72		72		67-130	0		20
Benzene	86		83		70-130	4		20
Toluene	81		78		70-130	4		20
Ethylbenzene	85		80		70-130	6		20
Chloromethane	100		95		64-130	5		20
Bromomethane	64		63		39-139	2		20
Vinyl chloride	95		88		55-140	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1266319-3 WG1266319-4								
Chloroethane	90		82		55-138	9		20
1,1-Dichloroethene	98		93		61-145	5		20
trans-1,2-Dichloroethene	95		90		70-130	5		20
Trichloroethene	94		87		70-130	8		20
1,2-Dichlorobenzene	95		91		70-130	4		20
1,3-Dichlorobenzene	93		90		70-130	3		20
1,4-Dichlorobenzene	93		90		70-130	3		20
Methyl tert butyl ether	94		94		63-130	0		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	93		90		70-130	3		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	130		120		36-147	8		20
Acetone	96		93		58-148	3		20
Carbon disulfide	86		80		51-130	7		20
2-Butanone	87		88		63-138	1		20
4-Methyl-2-pentanone	78		77		59-130	1		20
2-Hexanone	76		76		57-130	0		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	90		90		70-130	0		20
1,2-Dibromo-3-chloropropane	81		81		41-144	0		20
Isopropylbenzene	90		85		70-130	6		20
1,2,3-Trichlorobenzene	96		94		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1266319-3 WG1266319-4								
1,2,4-Trichlorobenzene	90		89		70-130	1		20
Methyl Acetate	96		94		70-130	2		20
Cyclohexane	110		100		70-130	10		20
1,4-Dioxane	98		98		56-162	0		20
Freon-113	120		110		70-130	9		20
Methyl cyclohexane	100		93		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114		112		70-130
Toluene-d8	90		89		70-130
4-Bromofluorobenzene	86		86		70-130
Dibromofluoromethane	115		113		70-130

SEMIVOLATILES

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-01
Client ID: OUTFALL-007-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 14:40
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-01
Client ID: OUTFALL-007-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 09:48
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	9.13		ng/l	1.90	0.388	1
Perfluoropentanoic Acid (PFPeA)	5.05		ng/l	1.90	0.376	1
Perfluorobutanesulfonic Acid (PFBS)	1.09	J	ng/l	1.90	0.226	1
Perfluorohexanoic Acid (PFHxA)	4.67		ng/l	1.90	0.312	1
Perfluoroheptanoic Acid (PFHpA)	3.54		ng/l	1.90	0.214	1
Perfluorohexanesulfonic Acid (PFHxS)	2.90		ng/l	1.90	0.357	1
Perfluorooctanoic Acid (PFOA)	10.5		ng/l	1.90	0.224	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.90	1.27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.90	0.654	1
Perfluorononanoic Acid (PFNA)	1.11	J	ng/l	1.90	0.296	1
Perfluorooctanesulfonic Acid (PFOS)	4.23		ng/l	1.90	0.479	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.90	0.289	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.90	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.90	0.616	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.90	0.247	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.90	0.932	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.90	0.551	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.90	0.764	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.90	0.354	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.90	0.311	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.90	0.236	1
PFOA/PFOS, Total	14.7		ng/l	1.90	0.224	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-01 Date Collected: 07/23/19 14:00

Client ID: OUTFALL-007-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	79		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	59		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	72		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	71		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	68		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	61		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	57		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	53		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-02
Client ID: OUTFALL-006-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:15
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 15:17
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	36		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-02
Client ID: OUTFALL-006-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:15
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 10:05
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.64		ng/l	1.96	0.400	1
Perfluoropentanoic Acid (PFPeA)	5.22		ng/l	1.96	0.388	1
Perfluorobutanesulfonic Acid (PFBS)	1.10	J	ng/l	1.96	0.233	1
Perfluorohexanoic Acid (PFHxA)	3.78		ng/l	1.96	0.322	1
Perfluoroheptanoic Acid (PFHpA)	2.80		ng/l	1.96	0.221	1
Perfluorohexanesulfonic Acid (PFHxS)	3.15		ng/l	1.96	0.369	1
Perfluorooctanoic Acid (PFOA)	6.16		ng/l	1.96	0.231	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.96	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.96	0.674	1
Perfluorononanoic Acid (PFNA)	1.14	J	ng/l	1.96	0.306	1
Perfluorooctanesulfonic Acid (PFOS)	2.68		ng/l	1.96	0.494	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.96	0.298	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.96	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.96	0.635	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.96	0.255	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.96	0.961	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.96	0.569	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.96	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.96	0.365	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.96	0.321	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.96	0.243	1
PFOA/PFOS, Total	8.84		ng/l	1.96	0.231	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-02 Date Collected: 07/23/19 14:15

Client ID: OUTFALL-006-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	59		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	69		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	47		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	64		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	54		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	47		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-03
Client ID: OUTFALL-003-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 16:40
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	38		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-03
Client ID: OUTFALL-003-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:30
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 10:22
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.6		ng/l	1.98	0.405	1
Perfluoropentanoic Acid (PFPeA)	51.4		ng/l	1.98	0.393	1
Perfluorobutanesulfonic Acid (PFBS)	2.04		ng/l	1.98	0.236	1
Perfluorohexanoic Acid (PFHxA)	44.6		ng/l	1.98	0.325	1
Perfluoroheptanoic Acid (PFHpA)	6.29		ng/l	1.98	0.223	1
Perfluorohexanesulfonic Acid (PFHxS)	234		ng/l	1.98	0.373	1
Perfluorooctanoic Acid (PFOA)	8.30		ng/l	1.98	0.234	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	143		ng/l	1.98	1.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	4.15		ng/l	1.98	0.682	1
Perfluorononanoic Acid (PFNA)	0.659	J	ng/l	1.98	0.310	1
Perfluorooctanesulfonic Acid (PFOS)	339		ng/l	1.98	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.98	0.302	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.98	1.20	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.98	0.643	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.98	0.258	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.98	0.972	1
Perfluorooctanesulfonamide (FOSA)	0.647	J	ng/l	1.98	0.575	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.98	0.798	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.98	0.369	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.98	0.325	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.98	0.246	1
PFOA/PFOS, Total	347		ng/l	1.98	0.234	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-03 Date Collected: 07/23/19 14:30

Client ID: OUTFALL-003-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	60		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	79		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	61		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	68		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	38		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	55		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	40		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	49		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-04
Client ID: FIELD BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 14:40
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/06/19 18:50
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-04 Date Collected: 07/23/19 14:40

Client ID: FIELD BLANK Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	118		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	132		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	129		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	48		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	81		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-05
Client ID: OUTFALL-002-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 17:30
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-05
Client ID: OUTFALL-002-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 10:38
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.20		ng/l	1.98	0.403	1
Perfluoropentanoic Acid (PFPeA)	0.877	J	ng/l	1.98	0.391	1
Perfluorobutanesulfonic Acid (PFBS)	1.03	J	ng/l	1.98	0.235	1
Perfluorohexanoic Acid (PFHxA)	1.34	J	ng/l	1.98	0.324	1
Perfluoroheptanoic Acid (PFHpA)	0.893	J	ng/l	1.98	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	28.1		ng/l	1.98	0.372	1
Perfluorooctanoic Acid (PFOA)	2.39		ng/l	1.98	0.233	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.98	1.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.98	0.680	1
Perfluorononanoic Acid (PFNA)	0.427	J	ng/l	1.98	0.308	1
Perfluorooctanesulfonic Acid (PFOS)	13.4		ng/l	1.98	0.498	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.98	0.300	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.98	1.20	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.98	0.640	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.98	0.257	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.98	0.968	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.98	0.573	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.98	0.794	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.98	0.368	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.98	0.323	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.98	0.245	1
PFOA/PFOS, Total	15.8		ng/l	1.98	0.233	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-05 Date Collected: 07/23/19 15:00

Client ID: OUTFALL-002-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	56		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	61		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	59		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	39		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	54		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	38		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	47		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	44		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-06
Client ID: OUTFALL-004-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 18:10
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-06
Client ID: OUTFALL-004-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:10
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 10:55
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.92		ng/l	1.98	0.403	1
Perfluoropentanoic Acid (PFPeA)	1.71	J	ng/l	1.98	0.391	1
Perfluorobutanesulfonic Acid (PFBS)	2.54		ng/l	1.98	0.235	1
Perfluorohexanoic Acid (PFHxA)	1.79	J	ng/l	1.98	0.324	1
Perfluoroheptanoic Acid (PFHpA)	1.37	J	ng/l	1.98	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	14.7		ng/l	1.98	0.372	1
Perfluorooctanoic Acid (PFOA)	2.75		ng/l	1.98	0.233	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.98	1.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.98	0.680	1
Perfluorononanoic Acid (PFNA)	0.818	J	ng/l	1.98	0.308	1
Perfluorooctanesulfonic Acid (PFOS)	12.7		ng/l	1.98	0.498	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.98	0.300	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.98	1.20	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.98	0.640	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.98	0.257	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.98	0.968	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.98	0.573	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.98	0.794	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.98	0.368	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.98	0.323	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.98	0.245	1
PFOA/PFOS, Total	15.5		ng/l	1.98	0.233	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-06 Date Collected: 07/23/19 15:10
Client ID: OUTFALL-004-W Date Received: 07/24/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	229		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**199**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	53		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-07
Client ID: OUTFALL-005-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:20
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 18:50
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	38		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-07
Client ID: OUTFALL-005-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:20
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 11:44
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	104		ng/l	1.87	0.382	1
Perfluoropentanoic Acid (PFPeA)	470		ng/l	1.87	0.371	1
Perfluorobutanesulfonic Acid (PFBS)	4.33		ng/l	1.87	0.223	1
Perfluorohexanoic Acid (PFHxA)	246		ng/l	1.87	0.307	1
Perfluoroheptanoic Acid (PFHpA)	82.5		ng/l	1.87	0.211	1
Perfluorohexanesulfonic Acid (PFHxS)	11.0		ng/l	1.87	0.352	1
Perfluorooctanoic Acid (PFOA)	14.9		ng/l	1.87	0.221	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	114		ng/l	1.87	1.25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.87	0.644	1
Perfluorononanoic Acid (PFNA)	2.62		ng/l	1.87	0.292	1
Perfluorooctanesulfonic Acid (PFOS)	9.24		ng/l	1.87	0.472	1
Perfluorodecanoic Acid (PFDA)	0.412	J	ng/l	1.87	0.285	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	2.03		ng/l	1.87	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.87	0.607	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.87	0.243	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.87	0.918	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.87	0.543	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.87	0.753	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.87	0.348	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.87	0.306	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.87	0.232	1
PFOA/PFOS, Total	24.1		ng/l	1.87	0.221	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-07 Date Collected: 07/23/19 15:20

Client ID: OUTFALL-005-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	74		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	57		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	54		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	76		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	151		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	76		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	44		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/31/19 13:00
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 22:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	4.1		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	43		10-120
4-Terphenyl-d14	68		41-149

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 19:29
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 15:56
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 22:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.06	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.11		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.04	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.04	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.02	J	ug/l	0.10	0.01	1
Chrysene	0.04	J	ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	0.04	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	69		10-120
4-Terphenyl-d14	80		41-149

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/07/19 11:28
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	29.0		ng/l	2.02	0.413	1
Perfluoropentanoic Acid (PFPeA)	87.2		ng/l	2.02	0.401	1
Perfluorobutanesulfonic Acid (PFBS)	4.19		ng/l	2.02	0.241	1
Perfluorohexanoic Acid (PFHxA)	57.4		ng/l	2.02	0.332	1
Perfluoroheptanoic Acid (PFHpA)	22.6		ng/l	2.02	0.228	1
Perfluorohexanesulfonic Acid (PFHxS)	69.9		ng/l	2.02	0.380	1
Perfluorooctanoic Acid (PFOA)	21.4		ng/l	2.02	0.239	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	214		ng/l	2.02	1.35	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.64	J	ng/l	2.02	0.696	1
Perfluorononanoic Acid (PFNA)	5.65		ng/l	2.02	0.316	1
Perfluorooctanesulfonic Acid (PFOS)	140		ng/l	2.02	0.510	1
Perfluorodecanoic Acid (PFDA)	1.29	J	ng/l	2.02	0.308	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.93	J	ng/l	2.02	1.23	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.02	0.656	1
Perfluoroundecanoic Acid (PFUnA)	0.729	J	ng/l	2.02	0.263	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.02	0.992	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.02	0.587	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.02	0.814	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.02	0.376	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.02	0.331	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.02	0.251	1
PFOA/PFOS, Total	161		ng/l	2.02	0.239	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	56		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	75		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	121		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	73		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	57		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	44		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	54		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/30/19 10:37
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 07/29/19 17:05

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-03,05-08 Batch: WG1265862-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	41		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/01/19 00:24
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 18:35

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1266486-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	2.5	J	ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/01/19 00:24
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 18:35

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1266486-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	66		15-120
2,4,6-Tribromophenol	38		10-120
4-Terphenyl-d14	63		41-149

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 15:06
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 18:36

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 08 Batch: WG1266487-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/31/19 15:06
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 18:36

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 08 Batch: WG1266487-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	41		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	88		41-149

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/07/19 05:06
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1268635-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/07/19 05:06
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/05/19 11:56

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1268635-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	56		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	53		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	80		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-03,05-08		Batch: WG1265862-2		WG1265862-3			
1,4-Dioxane	118		118		40-140	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	36		41		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1266486-2 WG1266486-3								
Bis(2-chloroethyl)ether	70		77		40-140	10		30
3,3'-Dichlorobenzidine	64		67		40-140	5		30
2,4-Dinitrotoluene	77		88		48-143	13		30
2,6-Dinitrotoluene	76		86		40-140	12		30
4-Chlorophenyl phenyl ether	67		78		40-140	15		30
4-Bromophenyl phenyl ether	59		63		40-140	7		30
Bis(2-chloroisopropyl)ether	55		58		40-140	5		30
Bis(2-chloroethoxy)methane	74		86		40-140	15		30
Hexachlorocyclopentadiene	56		61		40-140	9		30
Isophorone	76		88		40-140	15		30
Nitrobenzene	71		82		40-140	14		30
NDPA/DPA	72		80		40-140	11		30
n-Nitrosodi-n-propylamine	80		91		29-132	13		30
Bis(2-ethylhexyl)phthalate	71		87		40-140	20		30
Butyl benzyl phthalate	83		97		40-140	16		30
Di-n-butylphthalate	73		86		40-140	16		30
Di-n-octylphthalate	82		97		40-140	17		30
Diethyl phthalate	80		92		40-140	14		30
Dimethyl phthalate	75		90		40-140	18		30
Biphenyl	65		75		40-140	14		30
4-Chloroaniline	60		69		40-140	14		30
2-Nitroaniline	73		86		52-143	16		30
3-Nitroaniline	64		72		25-145	12		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1266486-2 WG1266486-3								
4-Nitroaniline	70		83		51-143	17		30
Dibenzofuran	68		76		40-140	11		30
1,2,4,5-Tetrachlorobenzene	57		63		2-134	10		30
Acetophenone	70		78		39-129	11		30
2,4,6-Trichlorophenol	69		77		30-130	11		30
p-Chloro-m-cresol	77		92		23-97	18		30
2-Chlorophenol	73		83		27-123	13		30
2,4-Dichlorophenol	74		84		30-130	13		30
2,4-Dimethylphenol	71		79		30-130	11		30
2-Nitrophenol	74		84		30-130	13		30
4-Nitrophenol	76		**90**	Q	10-80	17		30
2,4-Dinitrophenol	74		81		20-130	9		30
4,6-Dinitro-o-cresol	85		98		20-164	14		30
Phenol	55		66		12-110	18		30
3-Methylphenol/4-Methylphenol	77		91		30-130	17		30
2,4,5-Trichlorophenol	67		80		30-130	18		30
Carbazole	74		87		55-144	16		30
Atrazine	94		105		40-140	11		30
Benzaldehyde	70		77		40-140	10		30
Caprolactam	43		50		10-130	15		30
2,3,4,6-Tetrachlorophenol	64		71		40-140	10		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1266486-2 WG1266486-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		72		21-120
Phenol-d6	57		67		10-120
Nitrobenzene-d5	83		91		23-120
2-Fluorobiphenyl	69		76		15-120
2,4,6-Tribromophenol	56		62		10-120
4-Terphenyl-d14	66		77		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 08 Batch: WG1266487-2 WG1266487-3								
Acenaphthene	68		78		40-140	14		40
2-Chloronaphthalene	70		84		40-140	18		40
Fluoranthene	79		78		40-140	1		40
Hexachlorobutadiene	57		73		40-140	25		40
Naphthalene	62		79		40-140	24		40
Benzo(a)anthracene	77		73		40-140	5		40
Benzo(a)pyrene	74		71		40-140	4		40
Benzo(b)fluoranthene	78		74		40-140	5		40
Benzo(k)fluoranthene	81		76		40-140	6		40
Chrysene	73		71		40-140	3		40
Acenaphthylene	77		89		40-140	14		40
Anthracene	77		78		40-140	1		40
Benzo(ghi)perylene	68		68		40-140	0		40
Fluorene	73		80		40-140	9		40
Phenanthrene	75		75		40-140	0		40
Dibenzo(a,h)anthracene	83		77		40-140	8		40
Indeno(1,2,3-cd)pyrene	80		75		40-140	6		40
Pyrene	79		77		40-140	3		40
2-Methylnaphthalene	69		83		40-140	18		40
Pentachlorophenol	49		48		40-140	2		40
Hexachlorobenzene	75		77		40-140	3		40
Hexachloroethane	58		80		40-140	32		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 08 Batch: WG1266487-2 WG1266487-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49		56		21-120
Phenol-d6	42		46		10-120
Nitrobenzene-d5	67		76		23-120
2-Fluorobiphenyl	69		72		15-120
2,4,6-Tribromophenol	95		82		10-120
4-Terphenyl-d14	89		75		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 Batch: WG1268635-2 WG1268635-3								
Perfluorobutanoic Acid (PFBA)	106		108		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	112		112		63-161	0		30
Perfluorobutanesulfonic Acid (PFBS)	107		108		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	116		119		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	106		116		58-159	9		30
Perfluorohexanesulfonic Acid (PFHxS)	101		104		69-177	3		30
Perfluorooctanoic Acid (PFOA)	115		102		63-159	12		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	104		106		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	108		160		61-179	**39**	Q	30
Perfluorononanoic Acid (PFNA)	116		113		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	86		126		52-151	**38**	Q	30
Perfluorodecanoic Acid (PFDA)	111		113		63-171	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	102		93		56-173	9		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	114		138		60-166	19		30
Perfluoroundecanoic Acid (PFUnA)	112		112		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	96		134		38-156	**33**	Q	30
Perfluorooctanesulfonamide (FOSA)	88		98		46-170	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		96		45-170	2		30
Perfluorododecanoic Acid (PFDoA)	89		86		67-153	3		30
Perfluorotridecanoic Acid (PFTrDA)	92		88		48-158	4		30
Perfluorotetradecanoic Acid (PFTA)	119		98		59-182	19		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 Batch: WG1268635-2 WG1268635-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		128		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		135		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		117		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		109		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		50		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		76		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57		53		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	71		59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		71		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932869

Project Number: 18.8090 ***Report Date:*** 08/07/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1268635-4 QC Sample: L1932869-06 Client ID: OUTFALL-004-W												
Perfluorobutanoic Acid (PFBA)	5.92	39.5	45.1	99		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	1.71J	39.5	40.7	103		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	2.54	39.5	40.4	96		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	1.79J	39.5	45.7	116		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	1.37J	39.5	42.3	107		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	14.7	39.5	62.3	120		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	2.75	39.5	42.8	101		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	39.5	37.9	96		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	39.5	43.4	110		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	0.818J	39.5	43.1	109		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	12.7	39.5	51.3	98		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	39.5	41.9	106		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	39.5	35.3	89		-	-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	39.5	33.2	84		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	39.5	35.0	89		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	39.5	35.0	89		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	39.5	33.0	84		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	39.5	35.8	91		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	39.5	36.7	93		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	39.5	29.8	75		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	39.5	39.1	99		-	-		59-182	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT ***Lab Number:*** L1932869

Project Number: 18.8090 ***Report Date:*** 08/07/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1268635-4 QC Sample: L1932869-06 Client ID: OUTFALL-004-W												

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	153				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	209				1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70				1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	75				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	63				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	49				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	93				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	81				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1268635-5 QC Sample: L1932869-08 Client ID: OUTFALL-001-W						
Perfluorobutanoic Acid (PFBA)	29.0	29.2	ng/l	1		30
Perfluoropentanoic Acid (PFPeA)	87.2	86.0	ng/l	1		30
Perfluorobutanesulfonic Acid (PFBS)	4.19	4.23	ng/l	1		30
Perfluorohexanoic Acid (PFHxA)	57.4	56.2	ng/l	2		30
Perfluoroheptanoic Acid (PFHpA)	22.6	22.3	ng/l	1		30
Perfluorohexanesulfonic Acid (PFHxS)	69.9	69.4	ng/l	1		30
Perfluorooctanoic Acid (PFOA)	21.4	21.6	ng/l	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	214	218	ng/l	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.64J	1.32J	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	5.65	5.57	ng/l	1		30
Perfluorooctanesulfonic Acid (PFOS)	140	140	ng/l	0		30
Perfluorodecanoic Acid (PFDA)	1.29J	1.32J	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.93J	1.59J	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	0.729J	0.558J	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1268635-5 QC Sample: L1932869-08 Client ID: OUTFALL-001-W						
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
PFOA/PFOS, Total	161	162	ng/l	0		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		94		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		103		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	56		65		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	75		93		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	121		160		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	73		91		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		78		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	57		85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49		59		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63		71		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		38		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	44		54		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	54		64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		59		33-143

PCBS

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 07/31/19 03:02
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 07/27/19 03:59
Cleanup Method: EPA 3665A
Cleanup Date: 07/27/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/28/19 15:21
Analyst: AWS

Extraction Method: EPA 3510C
Extraction Date: 07/27/19 02:26
Cleanup Method: EPA 3665A
Cleanup Date: 07/27/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 08 Batch: WG1265262-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	103		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	103		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 08 Batch: WG1265262-2 WG1265262-3									
Aroclor 1016	86		87		40-140	2		50	A
Aroclor 1260	87		90		40-140	3		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		86		30-150	A
Decachlorobiphenyl	92		101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		83		30-150	B
Decachlorobiphenyl	94		100		30-150	B

PESTICIDES

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 07/28/19 11:54
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 07/27/19 03:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 07/27/19 23:50
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 07/27/19 02:24

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 08 Batch: WG1265260-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A
Chlordane	ND		ug/l	0.143	0.033	A

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 07/27/19 23:50
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 07/27/19 02:24

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 08 Batch: WG1265260-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	86		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	87		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08 Batch: WG1265260-2 WG1265260-3									
Delta-BHC	73		69		30-150	5		20	A
Lindane	70		68		30-150	2		20	A
Alpha-BHC	73		73		30-150	1		20	A
Beta-BHC	65		64		30-150	1		20	A
Heptachlor	57		54		30-150	6		20	A
Aldrin	69		62		30-150	10		20	A
Heptachlor epoxide	72		70		30-150	2		20	A
Endrin	73		69		30-150	6		20	A
Endrin aldehyde	65		64		30-150	1		20	A
Endrin ketone	72		70		30-150	3		20	A
Dieldrin	75		73		30-150	3		20	A
4,4'-DDE	74		71		30-150	4		20	A
4,4'-DDD	69		67		30-150	4		20	A
4,4'-DDT	69		66		30-150	4		20	A
Endosulfan I	67		65		30-150	3		20	A
Endosulfan II	69		66		30-150	4		20	A
Endosulfan sulfate	71		68		30-150	5		20	A
Methoxychlor	61		59		30-150	3		20	A
cis-Chlordane	65		62		30-150	4		20	A
trans-Chlordane	68		64		30-150	6		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08 Batch: WG1265260-2 WG1265260-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		59		30-150	A
Decachlorobiphenyl	82		71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		56		30-150	B
Decachlorobiphenyl	79		68		30-150	B

METALS

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08 Date Collected: 07/23/19 15:45

Client ID: OUTFALL-001-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	0.032	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Antimony, Total	0.016	J	mg/l	0.050	0.007	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Arsenic, Total	0.003	J	mg/l	0.005	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Barium, Total	0.029		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Beryllium, Total	ND		mg/l	0.005	0.001	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Cadmium, Total	ND		mg/l	0.005	0.001	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Calcium, Total	44.1		mg/l	0.100	0.035	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Chromium, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Cobalt, Total	ND		mg/l	0.020	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Copper, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Iron, Total	0.588		mg/l	0.050	0.009	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Lead, Total	ND		mg/l	0.010	0.003	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Magnesium, Total	10.3		mg/l	0.100	0.015	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Manganese, Total	0.712		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/29/19 13:00	07/29/19 19:30	EPA 7470A	1,7470A	EA
Nickel, Total	ND		mg/l	0.025	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Potassium, Total	2.40	J	mg/l	2.50	0.237	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Selenium, Total	ND		mg/l	0.010	0.004	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Silver, Total	ND		mg/l	0.007	0.003	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Sodium, Total	81.3		mg/l	2.00	0.120	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Thallium, Total	ND		mg/l	0.020	0.003	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Vanadium, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB
Zinc, Total	0.002	J	mg/l	0.050	0.002	1	07/26/19 12:24	07/29/19 21:57	EPA 3005A	1,6010D	AB

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 08/07/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08 Batch: WG1264989-1										
Aluminum, Total	ND		mg/l	0.100	0.032	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Antimony, Total	ND		mg/l	0.050	0.007	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Arsenic, Total	ND		mg/l	0.005	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Barium, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Beryllium, Total	ND		mg/l	0.005	0.001	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Cadmium, Total	ND		mg/l	0.005	0.001	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Calcium, Total	ND		mg/l	0.100	0.035	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Chromium, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Cobalt, Total	ND		mg/l	0.020	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Copper, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Iron, Total	ND		mg/l	0.050	0.009	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Lead, Total	ND		mg/l	0.010	0.003	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Magnesium, Total	ND		mg/l	0.100	0.015	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Manganese, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Nickel, Total	ND		mg/l	0.025	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Potassium, Total	ND		mg/l	2.50	0.237	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Selenium, Total	ND		mg/l	0.010	0.004	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Silver, Total	ND		mg/l	0.007	0.003	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Sodium, Total	ND		mg/l	2.00	0.120	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Thallium, Total	ND		mg/l	0.020	0.003	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Vanadium, Total	ND		mg/l	0.010	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB
Zinc, Total	ND		mg/l	0.050	0.002	1	07/26/19 12:24	07/29/19 21:48	1,6010D	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08 Batch: WG1265802-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/29/19 13:00	07/29/19 19:02	1,7470A	EA

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1264989-2								
Aluminum, Total	102		-		80-120	-		
Antimony, Total	90		-		80-120	-		
Arsenic, Total	116		-		80-120	-		
Barium, Total	100		-		80-120	-		
Beryllium, Total	103		-		80-120	-		
Cadmium, Total	109		-		80-120	-		
Calcium, Total	100		-		80-120	-		
Chromium, Total	100		-		80-120	-		
Cobalt, Total	102		-		80-120	-		
Copper, Total	99		-		80-120	-		
Iron, Total	106		-		80-120	-		
Lead, Total	109		-		80-120	-		
Magnesium, Total	108		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	102		-		80-120	-		
Potassium, Total	103		-		80-120	-		
Selenium, Total	113		-		80-120	-		
Silver, Total	101		-		80-120	-		
Sodium, Total	101		-		80-120	-		
Thallium, Total	108		-		80-120	-		
Vanadium, Total	103		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 08/07/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1264989-2					
Zinc, Total	107	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1265802-2					
Mercury, Total	97	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1264989-3 QC Sample: L1932869-08 Client ID: OUTFALL-001-W												
Aluminum, Total	ND	2	2.08	104		-	-		75-125	-		20
Antimony, Total	0.016J	0.5	0.519	104		-	-		75-125	-		20
Arsenic, Total	0.003J	0.12	0.142	118		-	-		75-125	-		20
Barium, Total	0.029	2	2.00	98		-	-		75-125	-		20
Beryllium, Total	ND	0.05	0.050	100		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.055	107		-	-		75-125	-		20
Calcium, Total	44.1	10	55.5	114		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.199	100		-	-		75-125	-		20
Cobalt, Total	ND	0.5	0.492	98		-	-		75-125	-		20
Copper, Total	ND	0.25	0.257	103		-	-		75-125	-		20
Iron, Total	0.588	1	1.66	107		-	-		75-125	-		20
Lead, Total	ND	0.51	0.524	103		-	-		75-125	-		20
Magnesium, Total	10.3	10	20.3	100		-	-		75-125	-		20
Manganese, Total	0.712	0.5	1.21	100		-	-		75-125	-		20
Nickel, Total	ND	0.5	0.490	98		-	-		75-125	-		20
Potassium, Total	2.40J	10	13.0	**130**	Q	-	-		75-125	-		20
Selenium, Total	ND	0.12	0.138	115		-	-		75-125	-		20
Silver, Total	ND	0.05	0.053	105		-	-		75-125	-		20
Sodium, Total	81.3	10	98.0	**167**	Q	-	-		75-125	-		20
Thallium, Total	ND	0.12	0.119	99		-	-		75-125	-		20
Vanadium, Total	ND	0.5	0.515	103		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1264989-3 QC Sample: L1932869-08 Client ID: OUTFALL-001-W									
Zinc, Total	0.002J	0.5	0.531	106	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1265802-3 WG1265802-4 QC Sample: L1932554-02 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00470	94	0.00476	95	75-125	1	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1264989-4 QC Sample: L1932869-08 Client ID: OUTFALL-001-W						
Aluminum, Total	ND	ND	mg/l	NC		20
Antimony, Total	0.016J	0.008J	mg/l	NC		20
Arsenic, Total	0.003J	0.003J	mg/l	NC		20
Barium, Total	0.029	0.029	mg/l	0		20
Beryllium, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Calcium, Total	44.1	43.5	mg/l	1		20
Chromium, Total	ND	ND	mg/l	NC		20
Cobalt, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Iron, Total	0.588	0.585	mg/l	1		20
Lead, Total	ND	ND	mg/l	NC		20
Magnesium, Total	10.3	10.1	mg/l	2		20
Manganese, Total	0.712	0.708	mg/l	1		20
Nickel, Total	ND	ND	mg/l	NC		20
Potassium, Total	2.40J	2.41J	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Sodium, Total	81.3	81.0	mg/l	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1264989-4 QC Sample: L1932869-08 Client ID: OUTFALL-001-W					
Thallium, Total	ND	ND	mg/l	NC	20
Vanadium, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.002J	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

SAMPLE RESULTS

Lab ID: L1932869-08
Client ID: OUTFALL-001-W
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/23/19 15:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.003	J	mg/l	0.005	0.001	1	07/28/19 13:35	07/29/19 11:38	1,9010C/9012B	LH

Project Name: HUDSON VALLEY REGIONAL AIRPOF
Lab Number: L1932869
Project Number: 18.8090
Report Date: 08/07/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 08 Batch: WG1265560-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	07/28/19 13:35	07/29/19 11:19	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08 Batch: WG1265560-2 WG1265560-3								
Cyanide, Total	100		100		85-115	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08 QC Batch ID: WG1265560-4 WG1265560-5 QC Sample: L1933427-01 Client ID: MS Sample												
Cyanide, Total	0.002J	0.2	0.168	84		0.175	88		80-120	4		20

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1932869
Report Date: 08/07/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932869-01A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-01B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-01C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-01D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-02A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-02B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-02C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-02D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-03A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-03B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-03C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-03D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-04A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-05A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-05B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-05C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-05D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-06A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-06B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-06C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-06D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-07A	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-07B	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932869-07C	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-07D	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-08A	Vial HCl preserved	A	NA		5.4	Y	Absent		NYTCL-8260-R2(14)
L1932869-08B	Vial HCl preserved	A	NA		5.4	Y	Absent		NYTCL-8260-R2(14)
L1932869-08C	Vial HCl preserved	A	NA		5.4	Y	Absent		NYTCL-8260-R2(14)
L1932869-08D	Amber 120ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8082-LVI(7)
L1932869-08E	Amber 120ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8082-LVI(7)
L1932869-08F	Amber 120ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8081(7)
L1932869-08G	Amber 120ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8081(7)
L1932869-08H	Plastic 250ml NaOH preserved	A	>12	>12	5.4	Y	Absent		TCN-9010(14)
L1932869-08I	Plastic 250ml HNO3 preserved	A	<2	<2	5.4	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932869-08J	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-08K	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932869-08L	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-08M	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1932869-08N	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1932869-08O	Amber 250ml unpreserved	A	7	7	5.4	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1932869-09A	Vial HCl preserved	A	NA		5.4	Y	Absent		NYTCL-8260-R2(14)
L1932869-09B	Vial HCl preserved	A	NA		5.4	Y	Absent		NYTCL-8260-R2(14)
L1932869-09C	Plastic 250ml Trizma preserved	A	NA		5.4	Y	Absent		HOLD-537(14)

*Values in parentheses indicate holding time in days

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
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1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1932869
Project Number:	18.8090	**Report Date:**	08/07/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab: 7/25/19

ALPHA Job #: L1932869

Client Information

Client: CT Male Associates
Address: 12 Raymond Avenue
Poughkeepsie, NY 12603
Phone: 845-454-4400
Fax:
Email: d.lent@CTMale.com

Project Information

Project Name: Hudson Valley Regional Airport
Project Location: Wappingers Falls, NY
Project # 18.8040
(Use Project name as Project #) ☐
Project Manager: Dave Lent
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Send results to d.lent@CTMale.com

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	1,4 Dioxane	TCL VOC	TCL SVOC	TCL Pest.	TCL PCB	TAL Metals	TCN	Sample Specific Comments	Total Bottle
32469(01	Outfall-007-W	07/23	~~0900~~ 0900	W	DM	X	X								4
02	Outfall-006-W	07/23	1415	W	DM	X	X								4
03	Outfall-003-W	07/23	1430	W	DM	X	X								4
04	Field Blank	07/23	1440		DM	X									2
05	Outfall-002-W	07/23	1500	W	DM	X	X								4
06	Outfall-004-W	07/23	1510	W	DM	X	X								4
07	Outfall-005-W	07/23	1520	W	DM	X	X								4
08	Outfall-001-W	07/23	1545	W	DM	X	X	X	X	X	X	X	X		15
09	Trip Blank	07/23	1600	W	DM			X							2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	A	G	A	A	A	P	P
Preservative	O	A	B	A	A	A	C	E

Relinquished By:	Date/Time	Received By:	Date/Time
David Mayo	07/24/19	[illegible] KAL	7/24/19 1611
Bob Wagner	7/24/19 1800	[illegible]	7/25/19 0810

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1934423
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HUDSON VALLEY REGIONAL AIRPORT
Project Number:	18.8090
Report Date:	08/16/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1934423
Report Date: 08/16/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1934423-01	HVRA-A-215-190731	WATER	WAPPINGERS FALLS	07/31/19 11:40	08/01/19
L1934423-02	HVRA-A-21R-190731	WATER	WAPPINGERS FALLS	07/31/19 11:45	08/01/19
L1934423-03	HVRA-LTB01-190731	WATER	WAPPINGERS FALLS	07/31/19 00:00	08/01/19
L1934423-04	HVRA-FTB01-190731	WATER	WAPPINGERS FALLS	07/31/19 12:15	08/01/19
L1934423-05	HVRA-A-21G-190731	WATER	WAPPINGERS FALLS	07/31/19 14:35	08/01/19
L1934423-06	HVRA-ME-18-190801	WATER	WAPPINGERS FALLS	08/01/19 10:10	08/01/19
L1934423-07	HVRA-MW-6-190801	WATER	WAPPINGERS FALLS	08/01/19 11:00	08/01/19
L1934423-08	HVRA-MW-4-190801	WATER	WAPPINGERS FALLS	08/01/19 13:15	08/01/19
L1934423-09	HVRA-MW-3-190801	WATER	WAPPINGERS FALLS	08/01/19 14:10	08/01/19

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1934423
Project Number:	18.8090	**Report Date:**	08/16/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1934423
Project Number:	18.8090	**Report Date:**	08/16/19

Case Narrative (continued)

Report Submission

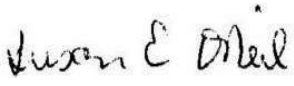
All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1271799-2: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

WG1271799-3: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Susan O' Neil

Title: Technical Director/Representative Date: 08/16/19

ORGANICS

SEMIVOLATILES

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-01
Client ID: HVRA-A-215-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 11:40
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 21:47
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	34		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-01
Client ID: HVRA-A-215-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 11:40
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 03:19
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	298		ng/l	50.0	10.2	1
Perfluoropentanoic Acid (PFPeA)	1350		ng/l	50.0	9.90	1
Perfluorobutanesulfonic Acid (PFBS)	56.1		ng/l	50.0	5.95	1
Perfluorohexanoic Acid (PFHxA)	777		ng/l	50.0	8.20	1
Perfluoroheptanoic Acid (PFHpA)	282		ng/l	50.0	5.63	1
Perfluorohexanesulfonic Acid (PFHxS)	814		ng/l	50.0	9.40	1
Perfluorooctanoic Acid (PFOA)	184		ng/l	50.0	5.90	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6870		ng/l	50.0	33.3	1
Perfluoroheptanesulfonic Acid (PFHpS)	23.5	J	ng/l	50.0	17.2	1
Perfluorononanoic Acid (PFNA)	34.5	J	ng/l	50.0	7.80	1
Perfluorooctanesulfonic Acid (PFOS)	2200		ng/l	50.0	12.6	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	50.0	7.60	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91.3		ng/l	50.0	30.3	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	50.0	16.2	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	50.0	6.50	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	50.0	24.5	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	50.0	14.5	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	50.0	20.1	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	50.0	9.30	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	50.0	8.18	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	50.0	6.20	1
PFOA/PFOS, Total	2380		ng/l	50.0	5.90	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-01 Date Collected: 07/31/19 11:40

Client ID: HVRA-A-215-190731 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	130		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	106		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-02
Client ID: HVRA-A-21R-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 11:45
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 22:14
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	30		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-02
Client ID: HVRA-A-21R-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 11:45
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 03:36
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	235		ng/l	50.0	10.2	1
Perfluoropentanoic Acid (PFPeA)	1190		ng/l	50.0	9.90	1
Perfluorobutanesulfonic Acid (PFBS)	24.2	J	ng/l	50.0	5.95	1
Perfluorohexanoic Acid (PFHxA)	870		ng/l	50.0	8.20	1
Perfluoroheptanoic Acid (PFHpA)	276		ng/l	50.0	5.63	1
Perfluorohexanesulfonic Acid (PFHxS)	1410		ng/l	50.0	9.40	1
Perfluorooctanoic Acid (PFOA)	371		ng/l	50.0	5.90	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4980		ng/l	50.0	33.3	1
Perfluoroheptanesulfonic Acid (PFHpS)	83.7		ng/l	50.0	17.2	1
Perfluorononanoic Acid (PFNA)	39.7	J	ng/l	50.0	7.80	1
Perfluorooctanesulfonic Acid (PFOS)	3010		ng/l	50.0	12.6	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	50.0	7.60	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	117		ng/l	50.0	30.3	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	50.0	16.2	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	50.0	6.50	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	50.0	24.5	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	50.0	14.5	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	50.0	20.1	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	50.0	9.30	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	50.0	8.18	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	50.0	6.20	1
PFOA/PFOS, Total	3380		ng/l	50.0	5.90	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-02 Date Collected: 07/31/19 11:45

Client ID: HVRA-A-21R-190731 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	104		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	95		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-03
Client ID: HVRA-LTB01-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 00:00
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 03:53
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.375	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.364	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	0.423	J	ng/l	1.84	0.301	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.632	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.463	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.596	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.901	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.533	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.739	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.342	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.217	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-03 Date Collected: 07/31/19 00:00

Client ID: HVRA-LTB01-190731 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	79		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	54		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	99		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-04
Client ID: HVRA-FTB01-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 12:15
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 04:10
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.379	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.368	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.221	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	0.305	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.209	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.349	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.219	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.639	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.290	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	0.468	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.602	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.242	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.911	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.539	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.747	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.346	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230	1
PFOA/PFOS, Total	ND		ng/l	1.86	0.219	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-04 Date Collected: 07/31/19 12:15
Client ID: HVRA-FTB01-190731 Date Received: 08/01/19
Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	125		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	123		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	136		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	94		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-05
Client ID: HVRA-A-21G-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 14:35
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 22:41
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	30		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-05
Client ID: HVRA-A-21G-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 14:35
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 04:27
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	387		ng/l	50.0	10.2	1
Perfluoropentanoic Acid (PFPeA)	1970		ng/l	50.0	9.90	1
Perfluorobutanesulfonic Acid (PFBS)	40.9	J	ng/l	50.0	5.95	1
Perfluorohexanoic Acid (PFHxA)	1360		ng/l	50.0	8.20	1
Perfluoroheptanoic Acid (PFHpA)	405		ng/l	50.0	5.63	1
Perfluorohexanesulfonic Acid (PFHxS)	1440		ng/l	50.0	9.40	1
Perfluorooctanoic Acid (PFOA)	500		ng/l	50.0	5.90	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	8150		ng/l	50.0	33.3	1
Perfluoroheptanesulfonic Acid (PFHpS)	102		ng/l	50.0	17.2	1
Perfluorononanoic Acid (PFNA)	61.9		ng/l	50.0	7.80	1
Perfluorooctanesulfonic Acid (PFOS)	3240		ng/l	50.0	12.6	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	50.0	7.60	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	152		ng/l	50.0	30.3	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	50.0	16.2	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	50.0	6.50	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	50.0	24.5	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	50.0	14.5	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	50.0	20.1	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	50.0	9.30	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	50.0	8.18	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	50.0	6.20	1
PFOA/PFOS, Total	3740		ng/l	50.0	5.90	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-05 Date Collected: 07/31/19 14:35

Client ID: HVRA-A-21G-190731 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	90		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	76		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	92		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-06
Client ID: HVRA-ME-18-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 10:10
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 23:07
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	31		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-06
Client ID: HVRA-ME-18-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 10:10
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 04:44
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	59.7		ng/l	10.0	2.04	1
Perfluoropentanoic Acid (PFPeA)	197		ng/l	10.0	1.98	1
Perfluorobutanesulfonic Acid (PFBS)	39.7		ng/l	10.0	1.19	1
Perfluorohexanoic Acid (PFHxA)	184		ng/l	10.0	1.64	1
Perfluoroheptanoic Acid (PFHpA)	84.9		ng/l	10.0	1.13	1
Perfluorohexanesulfonic Acid (PFHxS)	959		ng/l	10.0	1.88	1
Perfluorooctanoic Acid (PFOA)	77.5		ng/l	10.0	1.18	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	89.4		ng/l	10.0	6.66	1
Perfluoroheptanesulfonic Acid (PFHpS)	43.0		ng/l	10.0	3.44	1
Perfluorononanoic Acid (PFNA)	7.40	J	ng/l	10.0	1.56	1
Perfluorooctanesulfonic Acid (PFOS)	2030		ng/l	10.0	2.52	1
Perfluorodecanoic Acid (PFDA)	2.82	J	ng/l	10.0	1.52	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	8.76	J	ng/l	10.0	6.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	10.0	3.24	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	10.0	1.30	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	10.0	4.90	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	10.0	2.90	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	10.0	4.02	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	10.0	1.86	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	10.0	1.64	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	10.0	1.24	1
PFOA/PFOS, Total	2110		ng/l	10.0	1.18	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-06 Date Collected: 08/01/19 10:10

Client ID: HVRA-ME-18-190801 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	147		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	139		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	138		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	96		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-07
Client ID: HVRA-MW-6-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 11:00
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 23:33
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	31		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-07
Client ID: HVRA-MW-6-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 11:00
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 05:01
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	35.5		ng/l	10.0	2.04	1
Perfluoropentanoic Acid (PFPeA)	93.7		ng/l	10.0	1.98	1
Perfluorobutanesulfonic Acid (PFBS)	18.7		ng/l	10.0	1.19	1
Perfluorohexanoic Acid (PFHxA)	93.1		ng/l	10.0	1.64	1
Perfluoroheptanoic Acid (PFHpA)	45.9		ng/l	10.0	1.13	1
Perfluorohexanesulfonic Acid (PFHxS)	511		ng/l	10.0	1.88	1
Perfluorooctanoic Acid (PFOA)	47.7		ng/l	10.0	1.18	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	61.4		ng/l	10.0	6.66	1
Perfluoroheptanesulfonic Acid (PFHpS)	17.3		ng/l	10.0	3.44	1
Perfluorononanoic Acid (PFNA)	11.5		ng/l	10.0	1.56	1
Perfluorooctanesulfonic Acid (PFOS)	1320		ng/l	10.0	2.52	1
Perfluorodecanoic Acid (PFDA)	4.14	J	ng/l	10.0	1.52	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	63.9		ng/l	10.0	6.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	10.0	3.24	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	10.0	1.30	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	10.0	4.90	1
Perfluorooctanesulfonamide (FOSA)	8.62	J	ng/l	10.0	2.90	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	10.0	4.02	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	10.0	1.86	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	10.0	1.64	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	10.0	1.24	1
PFOA/PFOS, Total	1370		ng/l	10.0	1.18	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-07 Date Collected: 08/01/19 11:00
Client ID: HVRA-MW-6-190801 Date Received: 08/01/19
Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	72		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	108		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	71		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	72		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-08
Client ID: HVRA-MW-4-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 13:15
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 00:00
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	29		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-08
Client ID: HVRA-MW-4-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 13:15
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 05:18
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	20.2		ng/l	10.0	2.04	1
Perfluoropentanoic Acid (PFPeA)	58.2		ng/l	10.0	1.98	1
Perfluorobutanesulfonic Acid (PFBS)	20.8		ng/l	10.0	1.19	1
Perfluorohexanoic Acid (PFHxA)	98.0		ng/l	10.0	1.64	1
Perfluoroheptanoic Acid (PFHpA)	22.1		ng/l	10.0	1.13	1
Perfluorohexanesulfonic Acid (PFHxS)	318		ng/l	10.0	1.88	1
Perfluorooctanoic Acid (PFOA)	28.5		ng/l	10.0	1.18	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	147		ng/l	10.0	6.66	1
Perfluoroheptanesulfonic Acid (PFHpS)	21.7		ng/l	10.0	3.44	1
Perfluorononanoic Acid (PFNA)	3.60	J	ng/l	10.0	1.56	1
Perfluorooctanesulfonic Acid (PFOS)	1420		ng/l	10.0	2.52	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	10.0	1.52	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	10.0	6.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	10.0	3.24	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	10.0	1.30	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	10.0	4.90	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	10.0	2.90	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	10.0	4.02	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	10.0	1.86	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	10.0	1.64	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	10.0	1.24	1
PFOA/PFOS, Total	1450		ng/l	10.0	1.18	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-08 Date Collected: 08/01/19 13:15

Client ID: HVRA-MW-4-190801 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	121		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	111		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	98		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	75		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	78		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	101		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-09
Client ID: HVRA-MW-3-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 14:10
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 00:26
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	31		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-09
Client ID: HVRA-MW-3-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 14:10
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 05:35
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.67		ng/l	1.82	0.372	1
Perfluoropentanoic Acid (PFPeA)	1.37	J	ng/l	1.82	0.361	1
Perfluorobutanesulfonic Acid (PFBS)	0.912	J	ng/l	1.82	0.217	1
Perfluorohexanoic Acid (PFHxA)	2.19		ng/l	1.82	0.299	1
Perfluoroheptanoic Acid (PFHpA)	0.555	J	ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	9.75		ng/l	1.82	0.343	1
Perfluorooctanoic Acid (PFOA)	0.777	J	ng/l	1.82	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	12.3		ng/l	1.82	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.277	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.591	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.894	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.529	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.339	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.298	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.226	1
PFOA/PFOS, Total	13.1	J	ng/l	1.82	0.215	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-09 Date Collected: 08/01/19 14:10

Client ID: HVRA-MW-3-190801 Date Received: 08/01/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	132		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	105		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	115		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	119		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	99		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/06/19 15:28
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/05/19 15:15

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-02,05-09 Batch: WG1268717-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	23		15-110

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/14/19 22:30
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1271287-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.472	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/14/19 22:30
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1271287-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	80		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	84		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1934423

Report Date: 08/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-02,05-09		Batch: WG1268717-2		WG1268717-3			
1,4-Dioxane	124		126		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	22		24		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1934423
Report Date: 08/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1271287-2 WG1271287-3								
Perfluorobutanoic Acid (PFBA)	106		108		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	106		108		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	113		112		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	110		109		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	107		110		58-159	3		30
Perfluorohexanesulfonic Acid (PFHxS)	128		115		69-177	11		30
Perfluorooctanoic Acid (PFOA)	109		119		63-159	9		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	132		112		49-187	16		30
Perfluoroheptanesulfonic Acid (PFHpS)	148		137		61-179	8		30
Perfluorononanoic Acid (PFNA)	110		106		68-171	4		30
Perfluorooctanesulfonic Acid (PFOS)	142		136		52-151	4		30
Perfluorodecanoic Acid (PFDA)	94		110		63-171	16		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	111		110		56-173	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		115		60-166	8		30
Perfluoroundecanoic Acid (PFUnA)	112		112		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	134		130		38-156	3		30
Perfluorooctanesulfonamide (FOSA)	103		112		46-170	8		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	80		104		45-170	26		30
Perfluorododecanoic Acid (PFDoA)	97		96		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	111		124		48-158	11		30
Perfluorotetradecanoic Acid (PFTA)	99		104		59-182	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1934423
Report Date: 08/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1271287-2 WG1271287-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		92		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		96		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		76		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		105		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		79		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		89		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		68		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		76		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	29		37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	107		81		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1934423
Report Date: 08/16/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934423-01A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-01B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-01C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-01D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-02A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-02B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-02C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-02D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-03A	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-04A	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-05A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-05B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-05C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-05D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-06A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-06B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-06C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-06D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-07A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-07B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-07C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-07D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090

Lab Number: L1934423
Report Date: 08/16/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934423-08A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-08B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-08C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-08D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-09A	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-09B	Amber 250ml unpreserved	B	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934423-09C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934423-09D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1934423
Project Number:	18.8090	**Report Date:**	08/16/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HUDSON VALLEY REGIONAL AIRPORT	**Lab Number:**	L1934423
Project Number:	18.8090	**Report Date:**	08/16/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 8/2/19

ALPHA Job #: L1934423

Client Information

Client: CT Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: (518) 786-7400
Fax:
Email: K.moline@ctmale.com

Project Information

Project Name: Hudson Valley Regional Airport
Project Location: Wappingers Falls
Project #: 18.8090
(Use Project name as Project #)
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-537 (PFAS)	A2-1,4 Dioxane	Sample Specific Comments	Total # Bottles
L1934423-01	HVRA-A-21S-190731	7/31/19	1140	Groundwater	CB	✓	✓		4
-02	HVRA-A-21R-190731		1145		DPM	✓	✓		4
-03	HVRA-LTB01-190731		—	Water	—	✓			1
-04	HVRA-FTB01-190731		1215		DPM	✓			1
-05	HVRA-A-21G-190731	7/31/19	1435	Groundwater	DPM	✓	✓		4
-06	HVRA-ME-18-190801	8/1/19	1010		CB	✓	✓		4
-07	HVRA-MW-6-190801		1100		DPM	✓	✓		4
-08	HVRA-MW-4-190801		1315		CB	✓	✓		4
-09	HVRA-MW-3-190801		1410		DPM	✓	✓		4

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	A							
Preservative	A/O	A							

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/19 1500		8/1/19 1500
	8/1/19 1645		8/1/19 16:45
	8/1/19 18:30		8/1/19 2000
	8/2/19 00:40		8/2/19 00:40
	08/02/19 0550		8/2/19 05:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1934623
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	08/21/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1934623-01	HVRA-BFL-3S-190801	WATER	WAPPINGERS FALLS	08/01/19 16:35	08/02/19
L1934623-02	HVRA-BFL2S-190801	WATER	WAPPINGERS FALLS	08/01/19 16:10	08/02/19
L1934623-03	HVRA-DLMW20-190802	WATER	WAPPINGERS FALLS	08/02/19 11:35	08/02/19
L1934623-04	HVRA-DL-MW-15-190802	WATER	WAPPINGERS FALLS	08/02/19 11:50	08/02/19
L1934623-05	HVRA-DLMW29-190802	WATER	WAPPINGERS FALLS	08/02/19 14:15	08/02/19
L1934623-06	HVRA-FTB01-190802	WATER	WAPPINGERS FALLS	08/02/19 14:30	08/02/19
L1934623-07	HVRA-LTB01-190802	WATER	WAPPINGERS FALLS	08/02/19 00:00	08/02/19

Project Name:	HVRA	**Lab Number:**	L1934623
Project Number:	18.8090	**Report Date:**	08/21/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1934623
Project Number:	18.8090	**Report Date:**	08/21/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1934623-02: The collection date and time on the chain of custody was 01-AUG-19 16:10; however, the collection date/time on the container label was 01-AUG-19 16:20. At the client's request, the collection date/time is reported as 01-AUG-19 16:10.

L1934623-03: The collection date and time on the chain of custody was 01-AUG-19 11:35; however, the collection date/time on the container label was 01-AUG-19 11:45. At the client's request, the collection date/time is reported as 02-AUG-19 11:35.

Semivolatile Organics by SIM

The WG1269717-1 Method Blank, associated with L1934623-01, -03, -04 and -05, has a concentration above the reporting limit for 2-Methylnaphthalene. Since the samples were non-detect to the RL for this target analyte, no further actions were taken. The results of the original analysis are reported.

The WG1269717-1 Method Blank, associated with L1934623-02, has a concentration above the reporting limits for 2-Methylnaphthalene. The sample was re-extracted with the method required holding time exceeded and both the sample and method blank were non-detect for this target compound. The results of both extractions are reported, along with the re-extract QC. The original sample result is reported with B qualifier.

Perfluorinated Alkyl Acids by Isotope Dilution

L1934623-03: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

WG1272733-1: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Case Narrative (continued)

WG1272733-1 through -4: The continuing calibration standards had the response for HFPO-DA above the acceptance criteria for the method. The associated samples were non-detect; therefore, no further action was taken.

WG1272733-1 through -4: The continuing calibration standards had the response for M3HFPO-DA outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.

WG1273283-1: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 08/21/19

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/08/19 14:46
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01 Date Collected: 08/01/19 16:35

Client ID: HVRA-BFL-3S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	50		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	86		15-120
2,4,6-Tribromophenol	68		10-120
4-Terphenyl-d14	89		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 20:36
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	635.		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	28		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/19 21:10
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.06	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.02	JB	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01 Date Collected: 08/01/19 16:35

Client ID: HVRA-BFL-3S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	80		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 01:01
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	13.6		ng/l	1.99	0.406	1
Perfluoropentanoic Acid (PFPeA)	11.2		ng/l	1.99	0.394	1
Perfluorobutanesulfonic Acid (PFBS)	2.31		ng/l	1.99	0.237	1
Perfluorohexanoic Acid (PFHxA)	13.2		ng/l	1.99	0.327	1
Perfluoroheptanoic Acid (PFHpA)	8.99		ng/l	1.99	0.224	1
Perfluorohexanesulfonic Acid (PFHxS)	7.76		ng/l	1.99	0.374	1
Perfluorooctanoic Acid (PFOA)	35.8		ng/l	1.99	0.235	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.99	1.33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.99	0.685	1
Perfluorononanoic Acid (PFNA)	0.916	J	ng/l	1.99	0.311	1
Perfluorooctanesulfonic Acid (PFOS)	21.4		ng/l	1.99	0.502	1
Perfluorodecanoic Acid (PFDA)	0.307	J	ng/l	1.99	0.303	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.99	1.21	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.793	J	ng/l	1.99	0.645	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.99	0.259	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.99	0.976	1
Perfluorooctanesulfonamide (FOSA)	0.741	J	ng/l	1.99	0.578	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.62	J	ng/l	1.99	0.801	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.99	0.370	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.99	0.326	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.99	0.247	1
PFOA/PFOS, Total	57.2		ng/l	1.99	0.235	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01 Date Collected: 08/01/19 16:35

Client ID: HVRA-BFL-3S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	127		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	105		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	75		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/08/19 15:12
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 Date Collected: 08/01/19 16:10

Client ID: HVRA-BFL2S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	0.72	J	ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	78		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 21:08
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	635.		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	30		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/19 21:26
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.05	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.17	B	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 Date Collected: 08/01/19 16:10

Client ID: HVRA-BFL2S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	76		15-120
2,4,6-Tribromophenol	85		10-120
4-Terphenyl-d14	81		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 01:17
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	9.43		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	10.8		ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	7.11		ng/l	1.97	0.234	1
Perfluorohexanoic Acid (PFHxA)	58.2		ng/l	1.97	0.323	1
Perfluoroheptanoic Acid (PFHpA)	5.37		ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	663		ng/l	1.97	0.370	1
Perfluorooctanoic Acid (PFOA)	22.5		ng/l	1.97	0.232	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	16.8		ng/l	1.97	0.677	1
Perfluorononanoic Acid (PFNA)	0.547	J	ng/l	1.97	0.307	1
Perfluorooctanesulfonic Acid (PFOS)	932		ng/l	1.97	0.496	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.299	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.638	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.964	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.571	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.366	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.322	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1
PFOA/PFOS, Total	955		ng/l	1.97	0.232	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 Date Collected: 08/01/19 16:10

Client ID: HVRA-BFL2S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	119		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	130		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 RE
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/19 08:36
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/20/19 13:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.13		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.04	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 RE
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	51		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	85		15-120
2,4,6-Tribromophenol	106		10-120
4-Terphenyl-d14	96		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/08/19 15:37
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03 Date Collected: 08/02/19 11:35

Client ID: HVRA-DLMW20-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	75		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	78		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 21:38
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	15400		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	28		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/19 21:43
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.24		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.35		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	0.02	J	ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.04	JB	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03 Date Collected: 08/02/19 11:35

Client ID: HVRA-DLMW20-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	79		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 10:23
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	20.4		ng/l	2.05	0.418	1
Perfluoropentanoic Acid (PFPeA)	12.4		ng/l	2.05	0.406	1
Perfluorobutanesulfonic Acid (PFBS)	6.74		ng/l	2.05	0.244	1
Perfluorohexanoic Acid (PFHxA)	46.5		ng/l	2.05	0.336	1
Perfluoroheptanoic Acid (PFHpA)	19.8		ng/l	2.05	0.231	1
Perfluorohexanesulfonic Acid (PFHxS)	20.1		ng/l	2.05	0.385	1
Perfluorooctanoic Acid (PFOA)	76.6		ng/l	2.05	0.242	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.05	1.36	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.41		ng/l	2.05	0.705	1
Perfluorononanoic Acid (PFNA)	0.524	J	ng/l	2.05	0.320	1
Perfluorooctanesulfonic Acid (PFOS)	79.2		ng/l	2.05	0.516	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.05	0.311	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.05	1.24	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	13.5		ng/l	2.05	0.664	1
Perfluoroundecanoic Acid (PFUnA)	0.557	J	ng/l	2.05	0.266	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.05	1.00	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.05	0.594	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	7.32		ng/l	2.05	0.824	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.05	0.381	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.05	0.335	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.05	0.254	1
PFOA/PFOS, Total	156		ng/l	2.05	0.242	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03 Date Collected: 08/02/19 11:35

Client ID: HVRA-DLMW20-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	67		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**275**	Q	1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**209**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/08/19 16:03
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04 Date Collected: 08/02/19 11:50

Client ID: HVRA-DL-MW-15-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	61		10-120
4-Terphenyl-d14	78		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 22:09
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	1920		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	30		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/19 21:59
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.04	J	ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04 Date Collected: 08/02/19 11:50

Client ID: HVRA-DL-MW-15-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	79		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 10:40
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	10.1		ng/l	1.82	0.371	1
Perfluoropentanoic Acid (PFPeA)	4.84		ng/l	1.82	0.360	1
Perfluorobutanesulfonic Acid (PFBS)	2.33		ng/l	1.82	0.216	1
Perfluorohexanoic Acid (PFHxA)	10.8		ng/l	1.82	0.298	1
Perfluoroheptanoic Acid (PFHpA)	5.79		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	6.01		ng/l	1.82	0.342	1
Perfluorooctanoic Acid (PFOA)	31.1		ng/l	1.82	0.214	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	1.21	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.12	J	ng/l	1.82	0.625	1
Perfluorononanoic Acid (PFNA)	0.818	J	ng/l	1.82	0.284	1
Perfluorooctanesulfonic Acid (PFOS)	19.7		ng/l	1.82	0.458	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.276	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.589	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.236	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.891	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.527	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.847	J	ng/l	1.82	0.731	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.338	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.297	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.225	1
PFOA/PFOS, Total	50.8		ng/l	1.82	0.214	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04 Date Collected: 08/02/19 11:50

Client ID: HVRA-DL-MW-15-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	65		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	204		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	119		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	7		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/08/19 16:29
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05 Date Collected: 08/02/19 14:15

Client ID: HVRA-DLMW29-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		21-120
Phenol-d6	49		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	62		10-120
4-Terphenyl-d14	82		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/19 13:50
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/19 22:16
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05 Date Collected: 08/02/19 14:15

Client ID: HVRA-DLMW29-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	84		15-120
2,4,6-Tribromophenol	66		10-120
4-Terphenyl-d14	90		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 10:56
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.01		ng/l	1.86	0.379	1
Perfluoropentanoic Acid (PFPeA)	3.81		ng/l	1.86	0.368	1
Perfluorobutanesulfonic Acid (PFBS)	1.53	J	ng/l	1.86	0.221	1
Perfluorohexanoic Acid (PFHxA)	5.75		ng/l	1.86	0.305	1
Perfluoroheptanoic Acid (PFHpA)	2.49		ng/l	1.86	0.209	1
Perfluorohexanesulfonic Acid (PFHxS)	1.54	J	ng/l	1.86	0.349	1
Perfluorooctanoic Acid (PFOA)	8.71		ng/l	1.86	0.219	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.639	1
Perfluorononanoic Acid (PFNA)	0.409	J	ng/l	1.86	0.290	1
Perfluorooctanesulfonic Acid (PFOS)	8.86		ng/l	1.86	0.468	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.602	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.242	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.911	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.539	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.01	J	ng/l	1.86	0.747	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.346	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230	1
PFOA/PFOS, Total	17.6		ng/l	1.86	0.219	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05 Date Collected: 08/02/19 14:15

Client ID: HVRA-DLMW29-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	125		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-06
Client ID: HVRA-FTB01-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:30
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 11:13
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	0.376	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.218	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-06 Date Collected: 08/02/19 14:30

Client ID: HVRA-FTB01-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	68		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-07
Client ID: HVRA-LTB01-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 00:00
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 01:34
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.385	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.374	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.224	1
Perfluorohexanoic Acid (PFHxA)	0.389	J	ng/l	1.89	0.309	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.212	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.355	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.649	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.294	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.475	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.287	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.14	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.611	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.245	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.924	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.547	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.758	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.351	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.309	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.234	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-07 Date Collected: 08/02/19 00:00

Client ID: HVRA-LTB01-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	124		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	104		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	87		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	111		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	99		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	85		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/07/19 11:26
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/06/19 16:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-05 Batch: WG1269260-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	27		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/19 10:05
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1269707-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/19 10:05
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1269707-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	98		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/19 13:44
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05 Batch: WG1269717-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.03	J	ug/l	0.10	0.01
Phenanthrene	0.06	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	0.32		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/19 13:44
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05 Batch: WG1269717-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	102		10-120
4-Terphenyl-d14	101		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/15/19 13:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-02,07 Batch: WG1272147-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.376	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/15/19 13:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-02,07 Batch: WG1272147-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	82		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/16/19 12:19
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03-06 Batch: WG1272636-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/16/19 12:19
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03-06 Batch: WG1272636-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	65		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	81		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/20/19 16:16
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/20/19 07:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1274374-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/20/19 16:16
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/20/19 07:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1274374-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		21-120
Phenol-d6	62		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	96		15-120
2,4,6-Tribromophenol	92		10-120
4-Terphenyl-d14	99		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-05		Batch: WG1269260-2		WG1269260-3			
1,4-Dioxane	115		119		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	29		29		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1269707-2 WG1269707-3								
Bis(2-chloroethyl)ether	73		62		40-140	16		30
3,3'-Dichlorobenzidine	76		75		40-140	1		30
2,4-Dinitrotoluene	89		86		48-143	3		30
2,6-Dinitrotoluene	96		93		40-140	3		30
4-Chlorophenyl phenyl ether	87		83		40-140	5		30
4-Bromophenyl phenyl ether	91		88		40-140	3		30
Bis(2-chloroisopropyl)ether	84		74		40-140	13		30
Bis(2-chloroethoxy)methane	85		80		40-140	6		30
Hexachlorocyclopentadiene	72		64		40-140	12		30
Isophorone	84		80		40-140	5		30
Nitrobenzene	80		71		40-140	12		30
NDPA/DPA	93		92		40-140	1		30
n-Nitrosodi-n-propylamine	90		81		29-132	11		30
Bis(2-ethylhexyl)phthalate	97		97		40-140	0		30
Butyl benzyl phthalate	109		103		40-140	6		30
Di-n-butylphthalate	101		102		40-140	1		30
Di-n-octylphthalate	106		109		40-140	3		30
Diethyl phthalate	95		95		40-140	0		30
Dimethyl phthalate	102		99		40-140	3		30
Biphenyl	79		74		40-140	7		30
4-Chloroaniline	85		66		40-140	25		30
2-Nitroaniline	96		92		52-143	4		30
3-Nitroaniline	77		74		25-145	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1269707-2 WG1269707-3								
4-Nitroaniline	87		90		51-143	3		30
Dibenzofuran	80		78		40-140	3		30
1,2,4,5-Tetrachlorobenzene	75		67		2-134	11		30
Acetophenone	72		65		39-129	10		30
2,4,6-Trichlorophenol	94		89		30-130	5		30
p-Chloro-m-cresol	**98**	Q	92		23-97	6		30
2-Chlorophenol	75		66		27-123	13		30
2,4-Dichlorophenol	83		77		30-130	8		30
2,4-Dimethylphenol	71		72		30-130	1		30
2-Nitrophenol	85		75		30-130	13		30
4-Nitrophenol	**87**	Q	**82**	Q	10-80	6		30
2,4-Dinitrophenol	93		90		20-130	3		30
4,6-Dinitro-o-cresol	102		100		20-164	2		30
Phenol	58		53		12-110	9		30
3-Methylphenol/4-Methylphenol	82		75		30-130	9		30
2,4,5-Trichlorophenol	93		88		30-130	6		30
Carbazole	100		101		55-144	1		30
Atrazine	138		136		40-140	1		30
Benzaldehyde	72		60		40-140	18		30
Caprolactam	55		54		10-130	2		30
2,3,4,6-Tetrachlorophenol	87		86		40-140	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1269707-2 WG1269707-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		51		21-120
Phenol-d6	53		47		10-120
Nitrobenzene-d5	83		74		23-120
2-Fluorobiphenyl	87		79		15-120
2,4,6-Tribromophenol	82		79		10-120
4-Terphenyl-d14	105		103		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1269717-2 WG1269717-3								
Acenaphthene	116		91		40-140	24		40
2-Chloronaphthalene	115		87		40-140	28		40
Fluoranthene	115		110		40-140	4		40
Hexachlorobutadiene	98		65		40-140	40		40
Naphthalene	112		77		40-140	37		40
Benzo(a)anthracene	116		109		40-140	6		40
Benzo(a)pyrene	121		113		40-140	7		40
Benzo(b)fluoranthene	116		112		40-140	4		40
Benzo(k)fluoranthene	119		114		40-140	4		40
Chrysene	113		105		40-140	7		40
Acenaphthylene	101		90		40-140	12		40
Anthracene	120		107		40-140	11		40
Benzo(ghi)perylene	128		116		40-140	10		40
Fluorene	118		98		40-140	19		40
Phenanthrene	116		104		40-140	11		40
Dibenzo(a,h)anthracene	133		122		40-140	9		40
Indeno(1,2,3-cd)pyrene	131		119		40-140	10		40
Pyrene	114		109		40-140	4		40
2-Methylnaphthalene	118		86		40-140	31		40
Pentachlorophenol	133		129		40-140	3		40
Hexachlorobenzene	123		105		40-140	16		40
Hexachloroethane	101		67		40-140	40		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1269717-2 WG1269717-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	81		53		21-120
Phenol-d6	66		44		10-120
Nitrobenzene-d5	115		81		23-120
2-Fluorobiphenyl	105		80		15-120
2,4,6-Tribromophenol	**128**	Q	116		10-120
4-Terphenyl-d14	115		111		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-02,07 Batch: WG1272147-2 WG1272147-3								
Perfluorobutanoic Acid (PFBA)	98		101		67-148	3		30
Perfluoropentanoic Acid (PFPeA)	96		100		63-161	4		30
Perfluorobutanesulfonic Acid (PFBS)	84		85		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	101		102		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	98		101		58-159	4		30
Perfluorohexanesulfonic Acid (PFHxS)	87		87		69-177	1		30
Perfluorooctanoic Acid (PFOA)	100		102		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	108		113		49-187	5		30
Perfluoroheptanesulfonic Acid (PFHpS)	98		94		61-179	3		30
Perfluorononanoic Acid (PFNA)	97		98		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	97		101		52-151	3		30
Perfluorodecanoic Acid (PFDA)	100		102		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	89		102		56-173	14		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	93		103		60-166	9		30
Perfluoroundecanoic Acid (PFUnA)	97		102		60-153	6		30
Perfluorodecanesulfonic Acid (PFDS)	98		97		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	95		100		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	159		98		45-170	21		30
Perfluorododecanoic Acid (PFDoA)	102		104		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	106		106		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	104		107		59-182	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-02,07 Batch: WG1272147-2 WG1272147-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		68		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		100		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		88		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	90		70		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		83		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	39		37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		74		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		76		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 Batch: WG1272636-2 WG1272636-3								
Perfluorobutanoic Acid (PFBA)	100		99		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	98		97		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	93		90		65-157	3		30
Perfluorohexanoic Acid (PFHxA)	102		102		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	102		102		58-159	0		30
Perfluorohexanesulfonic Acid (PFHxS)	105		103		69-177	2		30
Perfluorooctanoic Acid (PFOA)	102		102		63-159	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	109		107		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	109		106		61-179	3		30
Perfluorononanoic Acid (PFNA)	97		100		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	109		106		52-151	3		30
Perfluorodecanoic Acid (PFDA)	102		101		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	83		100		56-173	19		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	110		100		60-166	10		30
Perfluoroundecanoic Acid (PFUnA)	100		98		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	103		103		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	99		102		46-170	3		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		103		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	101		106		67-153	5		30
Perfluorotridecanoic Acid (PFTrDA)	107		107		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	106		108		59-182	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934623

Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 Batch: WG1272636-2 WG1272636-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		85		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		90		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		92		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		75		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	71		65		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		78		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1274374-2 WG1274374-3								
Acenaphthene	95		88		40-140	8		40
2-Chloronaphthalene	92		87		40-140	6		40
Fluoranthene	101		94		40-140	7		40
Hexachlorobutadiene	89		84		40-140	6		40
Naphthalene	93		88		40-140	6		40
Benzo(a)anthracene	103		92		40-140	11		40
Benzo(a)pyrene	100		82		40-140	20		40
Benzo(b)fluoranthene	106		100		40-140	6		40
Benzo(k)fluoranthene	106		98		40-140	8		40
Chrysene	101		94		40-140	7		40
Acenaphthylene	92		88		40-140	4		40
Anthracene	101		92		40-140	9		40
Benzo(ghi)perylene	110		99		40-140	11		40
Fluorene	96		90		40-140	6		40
Phenanthrene	98		92		40-140	6		40
Dibenzo(a,h)anthracene	112		104		40-140	7		40
Indeno(1,2,3-cd)pyrene	107		100		40-140	7		40
Pyrene	102		91		40-140	11		40
2-Methylnaphthalene	93		87		40-140	7		40
Pentachlorophenol	89		79		40-140	12		40
Hexachlorobenzene	96		90		40-140	6		40
Hexachloroethane	86		81		40-140	6		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1274374-2 WG1274374-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	71		65		21-120
Phenol-d6	61		57		10-120
Nitrobenzene-d5	88		82		23-120
2-Fluorobiphenyl	86		82		15-120
2,4,6-Tribromophenol	79		77		10-120
4-Terphenyl-d14	93		88		41-149

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1272636-4 QC Sample: L1934623-05 Client ID: HVRA-DLMW29-190802												
Perfluorobutanoic Acid (PFBA)	7.01	37.2	43.1	97		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	3.81	37.2	38.6	94		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	1.53J	32.9	31.6	96		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	5.75	37.2	41.4	96		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	2.49	37.2	38.7	97		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.54J	33.9	37.2	110		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	8.71	37.2	45.2	98		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35.3	39.8	113		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.3	39.5	112		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	0.409J	37.2	37.0	100		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	8.86	34.4	48.8	116		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	37.2	38.2	103		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.7	37.6	105		-	-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.2	39.9	107		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.2	38.2	103		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.9	38.7	108		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37.2	34.6	93		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.01J	37.2	41.2	111		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	37.2	39.3	106		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.2	42.5	114		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.2	39.8	107		-	-		59-182	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1272636-4 QC Sample: L1934623-05 Client ID: HVRA-DLMW29-190802												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	123				1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71				1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	75				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	83				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	93				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	7				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99				31-159

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/10/19 17:26
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	0.042	J	ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	0.042	J	ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/10/19 17:39
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/10/19 17:53
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/11/19 13:20
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/11/19 13:33
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	74		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/10/19 16:32
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 16:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/07/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/08/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-05 Batch: WG1269725-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	86		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-05 Batch: WG1269725-2 WG1269725-3									
Aroclor 1016	77		76		40-140	1		50	A
Aroclor 1260	77		77		40-140	0		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		55		30-150	A
Decachlorobiphenyl	90		89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	53		52		30-150	B
Decachlorobiphenyl	88		83		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01
Client ID: HVRA-BFL-3S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 05:11
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-01 Date Collected: 08/01/19 16:35

Client ID: HVRA-BFL-3S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	44		30-150	A
Decachlorobiphenyl	36		30-150	A
2,4,5,6-Tetrachloro-m-xylene	40		30-150	B
Decachlorobiphenyl	39		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02
Client ID: HVRA-BFL2S-190801
Sample Location: WAPPINGERS FALLS

Date Collected: 08/01/19 16:10
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 05:23
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-02 Date Collected: 08/01/19 16:10

Client ID: HVRA-BFL2S-190801 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 05:36
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-03 Date Collected: 08/02/19 11:35

Client ID: HVRA-DLMW20-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04
Client ID: HVRA-DL-MW-15-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 11:50
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 05:48
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-04 Date Collected: 08/02/19 11:50

Client ID: HVRA-DL-MW-15-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05
Client ID: HVRA-DLMW29-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:15
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 06:39
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1934623

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934623-05 Date Collected: 08/02/19 14:15

Client ID: HVRA-DLMW29-190802 Date Received: 08/02/19

Sample Location: WAPPINGERS FALLS Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/16/19 04:58
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-05 Batch: WG1269788-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A
Chlordane	ND		ug/l	0.143	0.033	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/16/19 04:58
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 19:35

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-05 Batch: WG1269788-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	86		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-05 Batch: WG1269788-2 WG1269788-3									
Delta-BHC	78		80		30-150	2		20	A
Lindane	82		84		30-150	3		20	A
Alpha-BHC	82		83		30-150	2		20	A
Beta-BHC	82		84		30-150	2		20	A
Heptachlor	78		79		30-150	2		20	A
Aldrin	73		73		30-150	0		20	A
Heptachlor epoxide	84		86		30-150	3		20	A
Endrin	89		90		30-150	2		20	A
Endrin aldehyde	76		77		30-150	1		20	A
Endrin ketone	90		93		30-150	3		20	A
Dieldrin	86		88		30-150	2		20	A
4,4'-DDE	85		87		30-150	3		20	A
4,4'-DDD	92		94		30-150	2		20	A
4,4'-DDT	89		92		30-150	3		20	A
Endosulfan I	76		77		30-150	1		20	A
Endosulfan II	82		83		30-150	1		20	A
Endosulfan sulfate	78		80		30-150	3		20	A
Methoxychlor	85		96		30-150	12		20	A
cis-Chlordane	82		83		30-150	1		20	A
trans-Chlordane	79		81		30-150	2		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-05 Batch: WG1269788-2 WG1269788-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		71		30-150	A
Decachlorobiphenyl	79		84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		67		30-150	B
Decachlorobiphenyl	90		94		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934623-01A	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8082-LVI(7)
L1934623-01B	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8082-LVI(7)
L1934623-01C	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8081(7)
L1934623-01D	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8081(7)
L1934623-01E	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-01F	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-01G	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-01H	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-01I	Plastic 250ml Trizma preserved	C	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-01J	Plastic 250ml Trizma preserved	C	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-02A	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8082-LVI(7)
L1934623-02B	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8082-LVI(7)
L1934623-02C	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8081(7)
L1934623-02D	Amber 120ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8081(7)
L1934623-02E	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-02F	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-02G	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-02H	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-02I	Plastic 250ml Trizma preserved	C	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-02J	Plastic 250ml Trizma preserved	C	NA		3.3	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934623-03A	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-03B	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-03C	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-03D	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-03E	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-03F	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-03G	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-03H	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-03I	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-03J	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-04A	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-04B	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-04C	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-04D	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-04E	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-04F	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-04G	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-04H	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-04I	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-04J	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-05A	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-05B	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8082-LVI(7)
L1934623-05C	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-05D	Amber 120ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8081(7)
L1934623-05E	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-05F	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1934623-05G	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1934623-05H	Amber 250ml unpreserved	B	7	7	3.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 08/21/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934623-05I	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-05J	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-06I	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934623-07I	Plastic 250ml Trizma preserved	D	NA		5.0	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1934623
Project Number:	18.8090	**Report Date:**	08/21/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1934623
Project Number:	18.8090	**Report Date:**	08/21/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when using acetone as a solvent.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1934623
Project Number:	18.8090	**Report Date:**	08/21/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
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Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 8/2/19

ALPHA Job #: L1934623

Client Information

Client: CT Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: (518) 786-7400
Fax:
Email: K.Moline@ctmale.com

Project Information

Project Name: HVRA
Project Location: Wappingers Falls
Project #: 18,8090
(Use Project name as Project #) ☐
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

BFL = Bulefill Landfill FTB = Field Trip Blank ★ On bottle labeled 190204 not 190502
DL = Dutchess Landfill LTB = Lab Trip Blank

Please specify Metals or TAL.

ANALYSIS

A2-537 (PFAS)
NYTCL-8270-LVI (SIM)
NYTCL-8081
NYTCL-8082-LVI
A2-1,4Dioxane

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-537 (PFAS)	NYTCL-8270-LVI (SIM)	NYTCL-8081	NYTCL-8082-LVI	A2-1,4Dioxane	Sample Specific Comments	Total Bottle
34623-01	HVRA-BFL-~~35~~-190501	8/1/19	1635	Ground Water	CB	✓	✓	✓	✓	✓	~~BFL~~ (CB)	10
02★	HVRA-BFL2S-190501	↓	1610	↓	DM	✓	✓	✓	✓	✓		10
03	HVRA-DLMW20-190502	8/2/19	1135		DM	✓	✓	✓	✓	✓		10
04	HVRA-DL-MW-15-190502		1150		CB	✓	✓	✓	✓	✓		10
05	HVRA-DLMW29-190502		1415	↓	DM	✓	✓	✓	✓	✓		10
06	HVRA-FTB01-190502		1430	water	DM	✓	(B)					1
07	HVRA-LTB01-190502	↓	—	↓	—	✓						1

Container Type: P A A A A
Preservative: N/O A A A A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Cliff Bank	8/2/19 1500	Cyndy Day AAL	8.2.19 1600
Cyndy Day	8.2.19 1900	P.S. AAL	8/2/19 19:30
P.S.	8/2/1923:00		8/3/19 23:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1934860
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	08/21/19

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1934860-01	HVRA-MW100-6.0	SOIL	WAPPINGER'S FALLS, NY	08/05/19 13:00	08/05/19
L1934860-02	HVRA-FTB01-191805	WATER	WAPPINGER'S FALLS, NY	08/05/19 13:40	08/05/19
L1934860-03	HVRA-LTB01-190805	WATER	WAPPINGER'S FALLS, NY	08/05/19 00:00	08/05/19
L1934860-04	HVRA-RB01-190805	WATER	WAPPINGER'S FALLS, NY	08/05/19 14:25	08/05/19
L1934860-05	HVRA-MW101-8.0	SOIL	WAPPINGER'S FALLS, NY	08/05/19 15:00	08/05/19

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

Case Narrative (continued)

Report Submission

August 21, 2019: This final report includes the results of all requested analyses.

August 14, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L1934860-05: The sample identified as "HVRA-MW101-8.5" on the chain of custody was identified as "HVRA-MW101-8.0" on the container label. At the client's request, the sample is reported as "HVRA-MW101-8.0".

Perfluorinated Alkyl Acids by Isotope Dilution

L1934860-01 and -05: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

WG1271296-1: The continuing calibration standard had the response for 8:2FTS and PFDoS outside the acceptance criteria for the method. These values represent less than 10% of all compounds; therefore, the calibration was accepted.

WG1271296-3: The continuing calibration standard had the response for NEtFOSAA outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1273283-1: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

WG1273283-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

Case Narrative (continued)

The WG1270274-4/-5 MS/MSD recoveries, performed on L1934860-01, are outside the acceptance criteria for perfluorooctanesulfonamide (fosa) (51%/51%).
WG1270274-4 and WG1270274-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

Total Metals
L1934860-01 and -05: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1270290-3/-4 MS/MSD recoveries, performed on L1934860-01, are outside the acceptance criteria for cadmium (MS at 73%), chromium (55%/65%) and copper (0%/0%). A post digestion spike was performed and was within acceptance criteria.
The WG1270290-3/-4 MS/MSD recoveries, performed on L1934860-01, are outside the acceptance criteria for lead (64%/190%) and zinc (43%/153%). A post digestion spike was performed and yielded unacceptable recoveries for lead (78%) and zinc (79%). The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.
The WG1270290-3/-4 MS/MSD recoveries for aluminum (42%/1110%), calcium (1030%/351%), iron (0%/ 0%), magnesium (622%/283%) and manganese (0%/1520%), performed on L1934860-01, do not apply because the sample concentrations are greater than four times the spike amounts added.
The WG1270290-3/-4 MS/MSD RPDs for calcium (60%), lead (43%), magnesium (31%), manganese (77%) and zinc (26%), performed on L1934860-01, are above the acceptance criteria.
The WG1270413-3 MS recovery, performed on L1934860-01, is outside the acceptance criteria for mercury (74%). A post digestion spike was performed and was within acceptance criteria.

Cyanide, Total
The WG1269984-2/-3 LCS/LCSD recoveries (58%/62%), associated with L1934860-01 and -05, are outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 08/21/19

ORGANICS

VOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY
Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/19 16:13
Analyst: MV
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.9	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.97	0.14	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	0.97	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.97	0.12	1
Dibromochloromethane	ND		ug/kg	0.97	0.14	1
1,1,2-Trichloroethane	ND		ug/kg	0.97	0.26	1
Tetrachloroethene	ND		ug/kg	0.49	0.19	1
Chlorobenzene	ND		ug/kg	0.49	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.9	0.68	1
1,2-Dichloroethane	ND		ug/kg	0.97	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.49	0.16	1
Bromodichloromethane	ND		ug/kg	0.49	0.11	1
trans-1,3-Dichloropropene	ND		ug/kg	0.97	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.49	0.15	1
Bromoform	ND		ug/kg	3.9	0.24	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.49	0.16	1
Benzene	ND		ug/kg	0.49	0.16	1
Toluene	ND		ug/kg	0.97	0.53	1
Ethylbenzene	ND		ug/kg	0.97	0.14	1
Chloromethane	ND		ug/kg	3.9	0.91	1
Bromomethane	ND		ug/kg	1.9	0.57	1
Vinyl chloride	ND		ug/kg	0.97	0.33	1
Chloroethane	ND		ug/kg	1.9	0.44	1
1,1-Dichloroethene	ND		ug/kg	0.97	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.13	1
Trichloroethene	ND		ug/kg	0.49	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01 Date Collected: 08/05/19 13:00

Client ID: HVRA-MW100-6.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.17	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.20	1
p/m-Xylene	ND		ug/kg	1.9	0.54	1
o-Xylene	ND		ug/kg	0.97	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.97	0.17	1
Styrene	ND		ug/kg	0.97	0.19	1
Dichlorodifluoromethane	ND		ug/kg	9.7	0.89	1
Acetone	8.2	J	ug/kg	9.7	4.7	1
Carbon disulfide	ND		ug/kg	9.7	4.4	1
2-Butanone	ND		ug/kg	9.7	2.2	1
4-Methyl-2-pentanone	ND		ug/kg	9.7	1.2	1
2-Hexanone	ND		ug/kg	9.7	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.20	1
1,2-Dibromoethane	ND		ug/kg	0.97	0.27	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.9	0.97	1
Isopropylbenzene	ND		ug/kg	0.97	0.11	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.31	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
Methyl Acetate	ND		ug/kg	3.9	0.92	1
Cyclohexane	ND		ug/kg	9.7	0.53	1
1,4-Dioxane	ND		ug/kg	78	34.	1
Freon-113	ND		ug/kg	3.9	0.68	1
Methyl cyclohexane	ND		ug/kg	3.9	0.59	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/19 08:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1271219-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/19 08:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1271219-5					
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
1,4-Dioxane	ND		ug/kg	80	35.
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/19 08:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1271219-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1271219-3 WG1271219-4								
Methylene chloride	114		112		70-130	2		30
1,1-Dichloroethane	108		107		70-130	1		30
Chloroform	110		110		70-130	0		30
Carbon tetrachloride	100		100		70-130	0		30
1,2-Dichloropropane	110		110		70-130	0		30
Dibromochloromethane	83		84		70-130	1		30
1,1,2-Trichloroethane	90		90		70-130	0		30
Tetrachloroethene	86		84		70-130	2		30
Chlorobenzene	90		90		70-130	0		30
Trichlorofluoromethane	102		100		70-139	2		30
1,2-Dichloroethane	103		104		70-130	1		30
1,1,1-Trichloroethane	108		106		70-130	2		30
Bromodichloromethane	108		109		70-130	1		30
trans-1,3-Dichloropropene	86		85		70-130	1		30
cis-1,3-Dichloropropene	109		110		70-130	1		30
Bromoform	73		74		70-130	1		30
1,1,2,2-Tetrachloroethane	83		83		70-130	0		30
Benzene	110		110		70-130	0		30
Toluene	88		86		70-130	2		30
Ethylbenzene	92		91		70-130	1		30
Chloromethane	83		82		52-130	1		30
Bromomethane	118		114		57-147	3		30
Vinyl chloride	92		91		67-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1271219-3 WG1271219-4								
Chloroethane	105		104		50-151	1		30
1,1-Dichloroethene	108		105		65-135	3		30
trans-1,2-Dichloroethene	108		109		70-130	1		30
Trichloroethene	110		109		70-130	1		30
1,2-Dichlorobenzene	80		80		70-130	0		30
1,3-Dichlorobenzene	82		80		70-130	2		30
1,4-Dichlorobenzene	81		80		70-130	1		30
Methyl tert butyl ether	107		111		66-130	4		30
p/m-Xylene	90		89		70-130	1		30
o-Xylene	91		90		70-130	1		30
cis-1,2-Dichloroethene	108		109		70-130	1		30
Styrene	91		91		70-130	0		30
Dichlorodifluoromethane	69		69		30-146	0		30
Acetone	71		66		54-140	7		30
Carbon disulfide	91		91		59-130	0		30
2-Butanone	97		101		70-130	4		30
4-Methyl-2-pentanone	84		86		70-130	2		30
2-Hexanone	82		85		70-130	4		30
Bromochloromethane	104		106		70-130	2		30
1,2-Dibromoethane	85		86		70-130	1		30
1,2-Dibromo-3-chloropropane	70		73		68-130	4		30
Isopropylbenzene	86		84		70-130	2		30
1,2,3-Trichlorobenzene	80		82		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1271219-3 WG1271219-4								
1,2,4-Trichlorobenzene	83		82		70-130	1		30
Methyl Acetate	93		94		51-146	1		30
Cyclohexane	101		100		59-142	1		30
1,4-Dioxane	98		100		65-136	2		30
Freon-113	102		103		50-139	1		30
Methyl cyclohexane	106		104		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		95		70-130
Toluene-d8	91		90		70-130
4-Bromofluorobenzene	103		103		70-130
Dibromofluoromethane	101		101		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Methylene chloride	ND	87.9	79	90		100	106		70-130	23		30
1,1-Dichloroethane	ND	87.9	86	98		110	115		70-130	23		30
Chloroform	ND	87.9	82	93		100	110		70-130	24		30
Carbon tetrachloride	ND	87.9	80	91		100	107		70-130	23		30
1,2-Dichloropropane	ND	87.9	79	89		100	107		70-130	25		30
Dibromochloromethane	ND	87.9	51	**58**	Q	69	74		70-130	**31**	Q	30
1,1,2-Trichloroethane	ND	87.9	56	**63**	Q	75	80		70-130	30		30
Tetrachloroethene	ND	87.9	42	**47**	Q	58	**62**	Q	70-130	**33**	Q	30
Chlorobenzene	ND	87.9	38	**44**	Q	54	**57**	Q	70-130	**34**	Q	30
Trichlorofluoromethane	ND	87.9	90	102		110	117		70-139	20		30
1,2-Dichloroethane	ND	87.9	71	81		91	97		70-130	25		30
1,1,1-Trichloroethane	ND	87.9	86	98		110	115		70-130	22		30
Bromodichloromethane	ND	87.9	75	85		97	103		70-130	26		30
trans-1,3-Dichloropropene	ND	87.9	45	**51**	Q	61	**65**	Q	70-130	**31**	Q	30
cis-1,3-Dichloropropene	ND	87.9	66	75		86	91		70-130	27		30
Bromoform	ND	87.9	40	**46**	Q	60	**63**	Q	70-130	**40**	Q	30
1,1,2,2-Tetrachloroethane	ND	87.9	44	**50**	Q	65	**69**	Q	70-130	**38**	Q	30
Benzene	ND	87.9	79	90		100	106		70-130	23		30
Toluene	ND	87.9	49	**56**	Q	66	70		70-130	30		30
Ethylbenzene	ND	87.9	40	**45**	Q	57	**60**	Q	70-130	**35**	Q	30
Chloromethane	ND	87.9	70	80		91	96		52-130	25		30
Bromomethane	ND	87.9	94	107		120	128		57-147	25		30
Vinyl chloride	ND	87.9	85	96		100	108		67-130	19		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Chloroethane	ND	87.9	89	101		110	117		50-151	21		30
1,1-Dichloroethene	ND	87.9	89	102		110	118		65-135	22		30
trans-1,2-Dichloroethene	ND	87.9	79	90		99	105		70-130	22		30
Trichloroethene	ND	87.9	70	79		89	95		70-130	24		30
1,2-Dichlorobenzene	ND	87.9	20	**23**	Q	35	**37**	Q	70-130	**55**	Q	30
1,3-Dichlorobenzene	ND	87.9	19	**22**	Q	33	**35**	Q	70-130	**55**	Q	30
1,4-Dichlorobenzene	ND	87.9	18	**20**	Q	31	**33**	Q	70-130	**55**	Q	30
Methyl tert butyl ether	ND	87.9	81	92		110	112		66-130	26		30
p/m-Xylene	ND	176	71	**41**	Q	100	**55**	Q	70-130	**37**	Q	30
o-Xylene	ND	176	76	**43**	Q	110	**58**	Q	70-130	**36**	Q	30
cis-1,2-Dichloroethene	ND	87.9	77	88		97	103		70-130	23		30
Styrene	ND	176	67	**38**	Q	97	**51**	Q	70-130	**37**	Q	30
Dichlorodifluoromethane	ND	87.9	63	72		79	84		30-146	22		30
Acetone	8.2J	87.9	67	76		99	105		54-140	**38**	Q	30
Carbon disulfide	ND	87.9	77	88		97	103		59-130	22		30
2-Butanone	ND	87.9	65	74		81	86		70-130	22		30
4-Methyl-2-pentanone	ND	87.9	55	**62**	Q	74	79		70-130	30		30
2-Hexanone	ND	87.9	51	**58**	Q	68	72		70-130	29		30
Bromochloromethane	ND	87.9	72	82		92	98		70-130	24		30
1,2-Dibromoethane	ND	87.9	48	**54**	Q	64	**68**	Q	70-130	30		30
1,2-Dibromo-3-chloropropane	ND	87.9	34	**39**	Q	51	**54**	Q	68-130	**39**	Q	30
Isopropylbenzene	ND	87.9	32	**36**	Q	52	**55**	Q	70-130	**48**	Q	30
1,2,3-Trichlorobenzene	ND	87.9	11	**12**	Q	22	**23**	Q	70-130	**69**	Q	30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
1,2,4-Trichlorobenzene	ND	87.9	11	**12**	Q	22	**23**	Q	70-130	**67**	Q	30
Methyl Acetate	ND	87.9	100	118		140	**150**	Q	51-146	30		30
Cyclohexane	ND	87.9	82	93		100	110		59-142	24		30
1,4-Dioxane	ND	4400	4100	94		4900	103		65-136	16		30
Freon-113	ND	87.9	90	102		110	117		50-139	20		30
Methyl cyclohexane	ND	87.9	75	85		100	107		70-130	30		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		93		70-130
4-Bromofluorobenzene	103		109		70-130
Dibromofluoromethane	104		103		70-130
Toluene-d8	90		93		70-130

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/12/19 17:47
Analyst: IM
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 09:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	17.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	35.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	130		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	61.	1
Butyl benzyl phthalate	ND		ug/kg	180	44.	1
Di-n-butylphthalate	ND		ug/kg	180	33.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	69	J	ug/kg	100	20.	1
Benzo(a)pyrene	53	J	ug/kg	140	43.	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01 Date Collected: 08/05/19 13:00

Client ID: HVRA-MW100-6.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	97	J	ug/kg	100	30.	1
Benzo(k)fluoranthene	28	J	ug/kg	100	28.	1
Chrysene	76	J	ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	56	J	ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	46	J	ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	55	J	ug/kg	140	24.	1
Pyrene	120		ug/kg	100	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	33.	1
4-Nitroaniline	ND		ug/kg	180	73.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	58.	1
2-Nitrophenol	ND		ug/kg	380	66.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	840	82.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	84.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	28.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Carbazole	ND		ug/kg	180	17.	1
Atrazine	ND		ug/kg	140	62.	1
Benzaldehyde	ND		ug/kg	230	48.	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01 Date Collected: 08/05/19 13:00

Client ID: HVRA-MW100-6.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	54.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	36.	1
1,4-Dioxane	ND		ug/kg	26	8.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		25-120
Phenol-d6	82		10-120
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	85		10-136
4-Terphenyl-d14	71		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/14/19 10:43
Analyst: JW
Percent Solids: 94%

Extraction Method: EPA 537(M)
Extraction Date: 08/09/19 00:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.138	J	ug/kg	0.956	0.022	1
Perfluoropentanoic Acid (PFPeA)	0.416	J	ug/kg	0.956	0.044	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.956	0.037	1
Perfluorohexanoic Acid (PFHxA)	0.442	J	ug/kg	0.956	0.050	1
Perfluoroheptanoic Acid (PFHpA)	0.275	J	ug/kg	0.956	0.043	1
Perfluorohexanesulfonic Acid (PFHxS)	1.64		ug/kg	0.956	0.058	1
Perfluorooctanoic Acid (PFOA)	0.287	J	ug/kg	0.956	0.040	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	0.956	0.172	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.143	J	ug/kg	0.956	0.130	1
Perfluorononanoic Acid (PFNA)	0.182	J	ug/kg	0.956	0.072	1
Perfluorooctanesulfonic Acid (PFOS)	36.8		ug/kg	0.956	0.124	1
Perfluorodecanoic Acid (PFDA)	0.164	J	ug/kg	0.956	0.064	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.956	0.274	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.956	0.193	1
Perfluoroundecanoic Acid (PFUnA)	0.088	J	ug/kg	0.956	0.045	1
Perfluorodecanesulfonic Acid (PFDS)	0.190	J	ug/kg	0.956	0.146	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.956	0.094	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.956	0.081	1
Perfluorododecanoic Acid (PFDoA)	0.124	J	ug/kg	0.956	0.067	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.956	0.196	1
Perfluorotetradecanoic Acid (PFTA)	0.074	J	ug/kg	0.956	0.052	1
PFOA/PFOS, Total	37.1	J	ug/kg	0.956	0.040	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01 Date Collected: 08/05/19 13:00

Client ID: HVRA-MW100-6.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	72		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**43**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-02
Client ID: HVRA-FTB01-191805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:40
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:24
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.99	0.406	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.99	0.394	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.99	0.237	1
Perfluorohexanoic Acid (PFHxA)	0.370	J	ng/l	1.99	0.327	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.99	0.224	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.99	0.374	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.99	0.235	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.99	1.33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.99	0.685	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.99	0.311	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.99	0.502	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.99	0.303	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.99	1.21	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.99	0.645	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.99	0.259	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.99	0.976	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.99	0.578	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.99	0.801	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.99	0.370	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.99	0.326	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.99	0.247	1
PFOA/PFOS, Total	ND		ng/l	1.99	0.235	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-02 Date Collected: 08/05/19 13:40

Client ID: HVRA-FTB01-191805 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-03
Client ID: HVRA-LTB01-190805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 00:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:41
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	0.321	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	0.439	J	ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.218	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-03 Date Collected: 08/05/19 00:00

Client ID: HVRA-LTB01-190805 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	3		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	82		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-04
Client ID: HVRA-RB01-190805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 14:25
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:57
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.959	J	ng/l	2.26	0.462	1
Perfluoropentanoic Acid (PFPeA)	0.665	J	ng/l	2.26	0.448	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.26	0.269	1
Perfluorohexanoic Acid (PFHxA)	1.66	J	ng/l	2.26	0.371	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.26	0.255	1
Perfluorohexanesulfonic Acid (PFHxS)	1.22	J	ng/l	2.26	0.425	1
Perfluorooctanoic Acid (PFOA)	0.792	J	ng/l	2.26	0.267	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.26	1.51	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.26	0.778	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.26	0.353	1
Perfluorooctanesulfonic Acid (PFOS)	3.72		ng/l	2.26	0.570	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.26	0.344	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.39	J	ng/l	2.26	1.37	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.26	0.733	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.26	0.294	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.26	1.11	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.26	0.656	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.26	0.910	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.26	0.421	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.26	0.370	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.26	0.280	1
PFOA/PFOS, Total	4.51	J	ng/l	2.26	0.267	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-04 Date Collected: 08/05/19 14:25

Client ID: HVRA-RB01-190805 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	117		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	90		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	98		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	76		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/12/19 17:22
Analyst: IM
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 09:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,4-Dioxane	ND		ug/kg	26	7.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	77		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/14/19 10:59
Analyst: JW
Percent Solids: 95%

Extraction Method: EPA 537(M)
Extraction Date: 08/09/19 00:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	0.977	0.022	1
Perfluoropentanoic Acid (PFPeA)	0.047	J	ug/kg	0.977	0.045	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.977	0.038	1
Perfluorohexanoic Acid (PFHxA)	0.070	J	ug/kg	0.977	0.051	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	0.977	0.044	1
Perfluorohexanesulfonic Acid (PFHxS)	0.10	J	ug/kg	0.977	0.059	1
Perfluorooctanoic Acid (PFOA)	0.057	J	ug/kg	0.977	0.041	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	0.977	0.175	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	0.977	0.133	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	0.977	0.073	1
Perfluorooctanesulfonic Acid (PFOS)	1.12		ug/kg	0.977	0.127	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	0.977	0.065	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.977	0.280	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.977	0.197	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	0.977	0.046	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	0.977	0.149	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.977	0.096	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.977	0.083	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	0.977	0.068	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.977	0.200	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	0.977	0.053	1
PFOA/PFOS, Total	1.18	J	ug/kg	0.977	0.041	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05 Date Collected: 08/05/19 15:00

Client ID: HVRA-MW101-8.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	61		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	80		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	66		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	78		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	55		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	69		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	65		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**27**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**62**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**25**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**50**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**16**	Q	26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/13/19 16:05
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 08/09/19 00:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,05 Batch: WG1270274-1					
Perfluorobutanoic Acid (PFBA)	0.097	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/13/19 16:05
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 08/09/19 00:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,05 Batch: WG1270274-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	67		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/12/19 14:09
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 08/11/19 09:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,05 Batch: WG1271080-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/12/19 14:09
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 08/11/19 09:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,05 Batch: WG1271080-1					
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/12/19 14:09
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 08/11/19 09:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,05 Batch: WG1271080-1					
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	44.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	73		30-120
2,4,6-Tribromophenol	72		10-136
4-Terphenyl-d14	71		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/16/19 12:19
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-04 Batch: WG1272636-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/16/19 12:19
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-04 Batch: WG1272636-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	65		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	81		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,05 Batch: WG1270274-2 WG1270274-3								
Perfluorobutanoic Acid (PFBA)	101		102		71-135	1		30
Perfluoropentanoic Acid (PFPeA)	94		94		69-132	0		30
Perfluorobutanesulfonic Acid (PFBS)	79		82		72-128	4		30
Perfluorohexanoic Acid (PFHxA)	100		101		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	100		99		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	91		90		67-130	1		30
Perfluorooctanoic Acid (PFOA)	97		100		69-133	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		98		64-140	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	91		105		70-132	14		30
Perfluorononanoic Acid (PFNA)	95		96		72-129	1		30
Perfluorooctanesulfonic Acid (PFOS)	88		98		68-136	11		30
Perfluorodecanoic Acid (PFDA)	98		102		69-133	4		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91		90		65-137	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	101		94		63-144	7		30
Perfluoroundecanoic Acid (PFUnA)	99		99		64-136	0		30
Perfluorodecanesulfonic Acid (PFDS)	96		109		59-134	13		30
Perfluorooctanesulfonamide (FOSA)	101		81		67-137	22		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	84		90		61-139	7		30
Perfluorododecanoic Acid (PFDoA)	102		102		69-135	0		30
Perfluorotridecanoic Acid (PFTrDA)	96		98		66-139	2		30
Perfluorotetradecanoic Acid (PFTA)	105		106		69-133	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,05 Batch: WG1270274-2 WG1270274-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		90		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	120		104		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		100		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	102		89		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		92		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		105		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	111		96		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		89		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		98		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	119		95		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109		97		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		95		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	92		86		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104		94		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		7		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		84		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		87		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	81		72		26-160

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
Acenaphthene	90		53		31-137	**52**	Q	50
Hexachlorobenzene	94		55		40-140	**52**	Q	50
Bis(2-chloroethyl)ether	78		49		40-140	46		50
2-Chloronaphthalene	97		58		40-140	50		50
3,3'-Dichlorobenzidine	59		**39**	Q	40-140	41		50
2,4-Dinitrotoluene	115		68		40-132	**51**	Q	50
2,6-Dinitrotoluene	117		69		40-140	**52**	Q	50
Fluoranthene	98		57		40-140	**53**	Q	50
4-Chlorophenyl phenyl ether	96		56		40-140	**53**	Q	50
4-Bromophenyl phenyl ether	94		55		40-140	**52**	Q	50
Bis(2-chloroisopropyl)ether	68		44		40-140	43		50
Bis(2-chloroethoxy)methane	82		52		40-117	45		50
Hexachlorobutadiene	90		58		40-140	43		50
Hexachlorocyclopentadiene	74		42		40-140	**55**	Q	50
Hexachloroethane	81		56		40-140	36		50
Isophorone	86		53		40-140	47		50
Naphthalene	87		53		40-140	49		50
Nitrobenzene	92		56		40-140	49		50
NDPA/DPA	97		58		36-157	50		50
n-Nitrosodi-n-propylamine	89		52		32-121	**52**	Q	50
Bis(2-ethylhexyl)phthalate	107		66		40-140	47		50
Butyl benzyl phthalate	109		66		40-140	49		50
Di-n-butylphthalate	102		61		40-140	50		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
Di-n-octylphthalate	108		65		40-140	50		50
Diethyl phthalate	102		60		40-140	**52**	Q	50
Dimethyl phthalate	103		61		40-140	**51**	Q	50
Benzo(a)anthracene	99		58		40-140	**52**	Q	50
Benzo(a)pyrene	94		56		40-140	**51**	Q	50
Benzo(b)fluoranthene	100		58		40-140	**53**	Q	50
Benzo(k)fluoranthene	96		60		40-140	46		50
Chrysene	93		56		40-140	50		50
Acenaphthylene	101		60		40-140	**51**	Q	50
Anthracene	96		55		40-140	**54**	Q	50
Benzo(ghi)perylene	100		60		40-140	50		50
Fluorene	94		56		40-140	**51**	Q	50
Phenanthrene	90		53		40-140	**52**	Q	50
Dibenzo(a,h)anthracene	94		57		40-140	49		50
Indeno(1,2,3-cd)pyrene	96		58		40-140	49		50
Pyrene	98		57		35-142	**53**	Q	50
Biphenyl	99		58		37-127	**52**	Q	50
4-Chloroaniline	63		43		40-140	38		50
2-Nitroaniline	124		73		47-134	**52**	Q	50
3-Nitroaniline	82		56		26-129	38		50
4-Nitroaniline	101		60		41-125	**51**	Q	50
Dibenzofuran	96		58		40-140	49		50
2-Methylnaphthalene	90		54		40-140	50		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
1,2,4,5-Tetrachlorobenzene	94		55		40-117	**52**	Q	50
Acetophenone	87		55		14-144	45		50
2,4,6-Trichlorophenol	102		61		30-130	50		50
p-Chloro-m-cresol	**108**	Q	63		26-103	**53**	Q	50
2-Chlorophenol	87		56		25-102	43		50
2,4-Dichlorophenol	97		60		30-130	47		50
2,4-Dimethylphenol	102		62		30-130	49		50
2-Nitrophenol	114		74		30-130	43		50
4-Nitrophenol	**120**	Q	70		11-114	**53**	Q	50
2,4-Dinitrophenol	105		56		4-130	**61**	Q	50
4,6-Dinitro-o-cresol	125		73		10-130	**53**	Q	50
Pentachlorophenol	91		50		17-109	**58**	Q	50
Phenol	86		53		26-90	47		50
2-Methylphenol	88		56		30-130.	44		50
3-Methylphenol/4-Methylphenol	97		59		30-130	49		50
2,4,5-Trichlorophenol	111		63		30-130	**55**	Q	50
Carbazole	96		56		54-128	**53**	Q	50
Atrazine	102		62		40-140	49		50
Benzaldehyde	86		56		40-140	42		50
Caprolactam	97		58		15-130	50		50
2,3,4,6-Tetrachlorophenol	101		57		40-140	**56**	Q	50
1,4-Dioxane	56		**39**	Q	40-140	36		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	82		52		25-120
Phenol-d6	86		52		10-120
Nitrobenzene-d5	90		57		23-120
2-Fluorobiphenyl	92		54		30-120
2,4,6-Tribromophenol	96		53		10-136
4-Terphenyl-d14	88		52		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-04 Batch: WG1272636-2 WG1272636-3								
Perfluorobutanoic Acid (PFBA)	100		99		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	98		97		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	93		90		65-157	3		30
Perfluorohexanoic Acid (PFHxA)	102		102		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	102		102		58-159	0		30
Perfluorohexanesulfonic Acid (PFHxS)	105		103		69-177	2		30
Perfluorooctanoic Acid (PFOA)	102		102		63-159	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	109		107		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	109		106		61-179	3		30
Perfluorononanoic Acid (PFNA)	97		100		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	109		106		52-151	3		30
Perfluorodecanoic Acid (PFDA)	102		101		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	83		100		56-173	19		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	110		100		60-166	10		30
Perfluoroundecanoic Acid (PFUnA)	100		98		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	103		103		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	99		102		46-170	3		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		103		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	101		106		67-153	5		30
Perfluorotridecanoic Acid (PFTrDA)	107		107		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	106		108		59-182	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-04 Batch: WG1272636-2 WG1272636-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		85		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		90		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		92		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		75		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		18		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	71		65		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		78		33-143

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270274-4 WG1270274-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Perfluorobutanoic Acid (PFBA)	0.138J	5.1	5.22	102		5.38	105		71-135	3		30
Perfluoropentanoic Acid (PFPeA)	0.416J	5.1	5.23	103		5.32	104		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.52	4.27	95		4.32	95		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	0.442J	5.1	5.62	110		5.59	109		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	0.275J	5.1	5.43	106		5.54	108		71-131	2		30
Perfluorohexanesulfonic Acid (PFHxS)	1.64	4.65	6.84	112		6.93	113		67-130	1		30
Perfluorooctanoic Acid (PFOA)	0.287J	5.1	5.40	106		5.65	110		69-133	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	4.85	5.15	106		5.67	116		64-140	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.143J	4.85	5.83	120		5.50	113		70-132	6		30
Perfluorononanoic Acid (PFNA)	0.182J	5.1	5.09	100		5.34	104		72-129	5		30
Perfluorooctanesulfonic Acid (PFOS)	36.8	4.72	41.6	102		42.5	120		68-136	2		30
Perfluorodecanoic Acid (PFDA)	0.164J	5.1	5.44	107		5.49	107		69-133	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.9	4.80	98		5.16	105		65-137	7		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	5.1	5.78	113		5.93	116		63-144	3		30
Perfluoroundecanoic Acid (PFUnA)	0.088J	5.1	5.18	102		5.34	104		64-136	3		30
Perfluorodecanesulfonic Acid (PFDS)	0.190J	4.93	5.74	116		5.45	110		59-134	5		30
Perfluorooctanesulfonamide (FOSA)	ND	5.1	2.58	**51**	Q	2.61	**51**	Q	67-137	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	5.1	4.96	97		5.23	102		61-139	5		30
Perfluorododecanoic Acid (PFDoA)	0.124J	5.1	5.50	108		5.62	110		69-135	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	5.1	5.27	103		5.67	111		66-139	7		30
Perfluorotetradecanoic Acid (PFTA)	0.074J	5.1	5.30	104		5.56	108		69-133	5		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270274-4 WG1270274-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		96		25-186
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		89		32-182
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		48		42-136
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**44**	Q	**37**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		82		64-158
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		83		65-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	67		76		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		78		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		101		63-166
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		75		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		71		26-160
Perfluoro[13C4]Butanoic Acid (MPFBA)	62		74		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	75		86		65-182
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		**0**	Q	1-125
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		98		65-151
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		80		62-152
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		84		61-154
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		105		70-151

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Acenaphthene	ND	1420	1200	85		1100	78		31-137	9		50
Hexachlorobenzene	ND	1420	1200	85		1000	71		40-140	18		50
Bis(2-chloroethyl)ether	ND	1420	1200	85		1000	71		40-140	18		50
2-Chloronaphthalene	ND	1420	1300	92		1200	85		40-140	8		50
3,3'-Dichlorobenzidine	ND	1420	550	**39**	Q	530	**37**	Q	40-140	4		50
2,4-Dinitrotoluene	ND	1420	1500	110		1300	92		40-132	14		50
2,6-Dinitrotoluene	ND	1420	1500	110		1300	92		40-140	14		50
Fluoranthene	130	1420	1200	76		1200	75		40-140	0		50
4-Chlorophenyl phenyl ether	ND	1420	1200	85		1100	78		40-140	9		50
4-Bromophenyl phenyl ether	ND	1420	1200	85		1100	78		40-140	9		50
Bis(2-chloroisopropyl)ether	ND	1420	1000	71		990	70		40-140	1		50
Bis(2-chloroethoxy)methane	ND	1420	1200	85		1100	78		40-117	9		50
Hexachlorobutadiene	ND	1420	1200	85		1100	78		40-140	9		50
Hexachlorocyclopentadiene	ND	1420	610	43		330J	**23**	Q	40-140	**60**	Q	50
Hexachloroethane	ND	1420	1200	85		1000	71		40-140	18		50
Isophorone	ND	1420	1200	85		1200	85		40-140	0		50
Naphthalene	ND	1420	1200	85		1100	78		40-140	9		50
Nitrobenzene	ND	1420	1300	92		1300	92		40-140	0		50
NDPA/DPA	ND	1420	1300	92		1200	85		36-157	8		50
n-Nitrosodi-n-propylamine	ND	1420	1200	85		1200	85		32-121	0		50
Bis(2-ethylhexyl)phthalate	ND	1420	1400	99		1300	92		40-140	7		50
Butyl benzyl phthalate	ND	1420	1300	92		1200	85		40-140	8		50
Di-n-butylphthalate	ND	1420	1200	85		1200	85		40-140	0		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Di-n-octylphthalate	ND	1420	1400	99		1300	92		40-140	7		50
Diethyl phthalate	ND	1420	1300	92		1200	85		40-140	8		50
Dimethyl phthalate	ND	1420	1300	92		1200	85		40-140	8		50
Benzo(a)anthracene	69J	1420	1300	92		1200	85		40-140	8		50
Benzo(a)pyrene	53J	1420	1100	78		1000	71		40-140	10		50
Benzo(b)fluoranthene	97J	1420	1200	85		1100	78		40-140	9		50
Benzo(k)fluoranthene	28J	1420	1100	78		1000	71		40-140	10		50
Chrysene	76J	1420	1200	85		1100	78		40-140	9		50
Acenaphthylene	ND	1420	1400	99		1200	85		40-140	15		50
Anthracene	ND	1420	1200	85		1100	78		40-140	9		50
Benzo(ghi)perylene	56J	1420	1200	85		1100	78		40-140	9		50
Fluorene	ND	1420	1200	85		1200	85		40-140	0		50
Phenanthrene	46J	1420	1200	85		1100	78		40-140	9		50
Dibenzo(a,h)anthracene	ND	1420	1100	78		1000	71		40-140	10		50
Indeno(1,2,3-cd)pyrene	55J	1420	1200	85		1000	71		40-140	18		50
Pyrene	120	1420	1200	76		1100	69		35-142	9		50
Biphenyl	ND	1420	1300	92		1200	85		37-127	8		50
4-Chloroaniline	ND	1420	1000	71		740	52		40-140	30		50
2-Nitroaniline	ND	1420	1700	120		1600	110		47-134	6		50
3-Nitroaniline	ND	1420	1200	85		1200	85		26-129	0		50
4-Nitroaniline	ND	1420	1300	92		1200	85		41-125	8		50
Dibenzofuran	ND	1420	1300	92		1200	85		40-140	8		50
2-Methylnaphthalene	ND	1420	1200	85		1200	85		40-140	0		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
1,2,4,5-Tetrachlorobenzene	ND	1420	1300	92		1200	85		40-117	8		50
Acetophenone	ND	1420	1200	85		1200	85		14-144	0		50
2,4,6-Trichlorophenol	ND	1420	1500	110		1400	99		30-130	7		50
p-Chloro-m-cresol	ND	1420	1500	**110**	Q	1300	92		26-103	14		50
2-Chlorophenol	ND	1420	1300	92		1200	85		25-102	8		50
2,4-Dichlorophenol	ND	1420	1400	99		1300	92		30-130	7		50
2,4-Dimethylphenol	ND	1420	1300	92		1300	92		30-130	0		50
2-Nitrophenol	ND	1420	1600	110		1400	99		30-130	13		50
4-Nitrophenol	ND	1420	1500	110		1400	99		11-114	7		50
2,4-Dinitrophenol	ND	1420	330J	23		ND	**0**	Q	4-130	NC		50
4,6-Dinitro-o-cresol	ND	1420	470	33		160J	11		10-130	**98**	Q	50
Pentachlorophenol	ND	1420	1400	99		1200	85		17-109	15		50
Phenol	ND	1420	1100	78		1100	78		26-90	0		50
2-Methylphenol	ND	1420	1200	85		1200	85		30-130.	0		50
3-Methylphenol/4-Methylphenol	ND	1420	1300	92		1200	85		30-130	8		50
2,4,5-Trichlorophenol	ND	1420	1600	110		1400	99		30-130	13		50
Carbazole	ND	1420	1200	85		1100	78		54-128	9		50
Atrazine	ND	1420	1400	99		1200	85		40-140	15		50
Benzaldehyde	ND	1420	1300	92		1200	85		40-140	8		50
Caprolactam	ND	1420	1200	85		1200	85		15-130	0		50
2,3,4,6-Tetrachlorophenol	ND	1420	1400	99		1300	92		40-140	7		50
1,4-Dioxane	ND	1420	700	49		660	47		40-140	6		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	88		79		10-136
2-Fluorobiphenyl	85		76		30-120
2-Fluorophenol	84		77		25-120
4-Terphenyl-d14	69		61		18-120
Nitrobenzene-d5	95		89		23-120
Phenol-d6	85		79		10-120

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/14/19 08:18
Analyst: KB
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 15:37
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.9	3.10	1	A
Aroclor 1221	ND		ug/kg	34.9	3.49	1	A
Aroclor 1232	ND		ug/kg	34.9	7.39	1	A
Aroclor 1242	ND		ug/kg	34.9	4.70	1	A
Aroclor 1248	ND		ug/kg	34.9	5.23	1	A
Aroclor 1254	ND		ug/kg	34.9	3.82	1	A
Aroclor 1260	ND		ug/kg	34.9	6.44	1	A
Aroclor 1262	ND		ug/kg	34.9	4.43	1	A
Aroclor 1268	ND		ug/kg	34.9	3.61	1	A
PCBs, Total	ND		ug/kg	34.9	3.10	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	100		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/14/19 01:38
Analyst: KB
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 15:37
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.2	2.94	1	A
Aroclor 1221	ND		ug/kg	33.2	3.32	1	A
Aroclor 1232	ND		ug/kg	33.2	7.03	1	A
Aroclor 1242	ND		ug/kg	33.2	4.47	1	A
Aroclor 1248	ND		ug/kg	33.2	4.98	1	A
Aroclor 1254	ND		ug/kg	33.2	3.63	1	A
Aroclor 1260	ND		ug/kg	33.2	6.13	1	A
Aroclor 1262	ND		ug/kg	33.2	4.21	1	A
Aroclor 1268	ND		ug/kg	33.2	3.44	1	A
PCBs, Total	ND		ug/kg	33.2	2.94	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	92		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/13/19 14:40
Analyst: HT

Extraction Method: EPA 3546
Extraction Date: 08/11/19 15:37
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/12/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,05 Batch: WG1271150-1						
Aroclor 1016	ND		ug/kg	31.4	2.79	A
Aroclor 1221	ND		ug/kg	31.4	3.15	A
Aroclor 1232	ND		ug/kg	31.4	6.67	A
Aroclor 1242	ND		ug/kg	31.4	4.24	A
Aroclor 1248	ND		ug/kg	31.4	4.72	A
Aroclor 1254	ND		ug/kg	31.4	3.44	A
Aroclor 1260	ND		ug/kg	31.4	5.81	A
Aroclor 1262	ND		ug/kg	31.4	3.99	A
Aroclor 1268	ND		ug/kg	31.4	3.26	A
PCBs, Total	ND		ug/kg	31.4	2.79	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	72		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,05 Batch: WG1271150-2 WG1271150-3									
Aroclor 1016	80		70		40-140	13		50	A
Aroclor 1260	88		76		40-140	15		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		70		30-150	A
Decachlorobiphenyl	89		79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		65		30-150	B
Decachlorobiphenyl	80		72		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271150-4 WG1271150-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0													
Aroclor 1016	ND	218	127	58		135	62		40-140	6		50	A
Aroclor 1260	ND	218	126	58		150	69		40-140	17		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		65		30-150	A
Decachlorobiphenyl	70		76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		71		30-150	B
Decachlorobiphenyl	89		96		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/14/19 17:04
Analyst: SL
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 22:38
Cleanup Method: EPA 3620B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.61	0.316	1	A
Lindane	ND		ug/kg	0.672	0.300	1	A
Alpha-BHC	ND		ug/kg	0.672	0.191	1	A
Beta-BHC	ND		ug/kg	1.61	0.611	1	A
Heptachlor	ND		ug/kg	0.806	0.361	1	A
Aldrin	ND		ug/kg	1.61	0.568	1	A
Heptachlor epoxide	ND		ug/kg	3.02	0.907	1	A
Endrin	ND		ug/kg	0.672	0.275	1	A
Endrin aldehyde	ND		ug/kg	2.01	0.705	1	A
Endrin ketone	ND		ug/kg	1.61	0.415	1	A
Dieldrin	ND		ug/kg	1.01	0.504	1	A
4,4'-DDE	1.13	J	ug/kg	1.61	0.373	1	B
4,4'-DDD	ND		ug/kg	1.61	0.575	1	B
4,4'-DDT	2.85	JP	ug/kg	3.02	1.30	1	B
Endosulfan I	ND		ug/kg	1.61	0.381	1	A
Endosulfan II	ND		ug/kg	1.61	0.539	1	A
Endosulfan sulfate	ND		ug/kg	0.672	0.320	1	A
Methoxychlor	ND		ug/kg	3.02	0.940	1	A
Toxaphene	ND		ug/kg	30.2	8.46	1	A
cis-Chlordane	ND		ug/kg	2.01	0.561	1	A
trans-Chlordane	ND		ug/kg	2.01	0.532	1	A
Chlordane	ND		ug/kg	13.1	5.34	1	A

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01 Date Collected: 08/05/19 13:00

Client ID: HVRA-MW100-6.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	108		30-150	B
Decachlorobiphenyl	102		30-150	B
2,4,5,6-Tetrachloro-m-xylene	107		30-150	A
Decachlorobiphenyl	80		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/14/19 16:51
Analyst: SL
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/11/19 22:38
Cleanup Method: EPA 3620B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.66	0.325	1	A
Lindane	ND		ug/kg	0.691	0.309	1	A
Alpha-BHC	ND		ug/kg	0.691	0.196	1	A
Beta-BHC	ND		ug/kg	1.66	0.629	1	A
Heptachlor	ND		ug/kg	0.830	0.372	1	A
Aldrin	ND		ug/kg	1.66	0.584	1	A
Heptachlor epoxide	ND		ug/kg	3.11	0.933	1	A
Endrin	ND		ug/kg	0.691	0.283	1	A
Endrin aldehyde	ND		ug/kg	2.07	0.726	1	A
Endrin ketone	ND		ug/kg	1.66	0.427	1	A
Dieldrin	ND		ug/kg	1.04	0.518	1	A
4,4'-DDE	ND		ug/kg	1.66	0.384	1	A
4,4'-DDD	ND		ug/kg	1.66	0.592	1	A
4,4'-DDT	ND		ug/kg	3.11	1.33	1	A
Endosulfan I	ND		ug/kg	1.66	0.392	1	A
Endosulfan II	ND		ug/kg	1.66	0.554	1	A
Endosulfan sulfate	ND		ug/kg	0.691	0.329	1	A
Methoxychlor	ND		ug/kg	3.11	0.968	1	A
Toxaphene	ND		ug/kg	31.1	8.71	1	A
cis-Chlordane	ND		ug/kg	2.07	0.578	1	A
trans-Chlordane	ND		ug/kg	2.07	0.547	1	A
Chlordane	ND		ug/kg	13.5	5.50	1	A

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05 Date Collected: 08/05/19 15:00

Client ID: HVRA-MW101-8.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	67		30-150	B
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	62		30-150	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/14/19 16:14
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/11/19 22:38
Cleanup Method: EPA 3620B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,05 Batch: WG1271177-1						
Delta-BHC	ND		ug/kg	1.52	0.298	A
Lindane	ND		ug/kg	0.634	0.284	A
Alpha-BHC	ND		ug/kg	0.634	0.180	A
Beta-BHC	ND		ug/kg	1.52	0.577	A
Heptachlor	ND		ug/kg	0.761	0.341	A
Aldrin	ND		ug/kg	1.52	0.536	A
Heptachlor epoxide	ND		ug/kg	2.86	0.856	A
Endrin	ND		ug/kg	0.634	0.260	A
Endrin aldehyde	ND		ug/kg	1.90	0.666	A
Endrin ketone	ND		ug/kg	1.52	0.392	A
Dieldrin	ND		ug/kg	0.952	0.476	A
4,4'-DDE	ND		ug/kg	1.52	0.352	A
4,4'-DDD	ND		ug/kg	1.52	0.543	A
4,4'-DDT	ND		ug/kg	2.86	1.22	A
Endosulfan I	ND		ug/kg	1.52	0.360	A
Endosulfan II	ND		ug/kg	1.52	0.509	A
Endosulfan sulfate	ND		ug/kg	0.634	0.302	A
Methoxychlor	ND		ug/kg	2.86	0.888	A
Toxaphene	ND		ug/kg	28.6	7.99	A
cis-Chlordane	ND		ug/kg	1.90	0.530	A
trans-Chlordane	ND		ug/kg	1.90	0.502	A
Chlordane	ND		ug/kg	12.4	5.04	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/14/19 16:14
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/11/19 22:38
Cleanup Method: EPA 3620B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,05 Batch: WG1271177-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	106		30-150	B
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	87		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,05 Batch: WG1271177-2 WG1271177-3									
Delta-BHC	138		112		30-150	21		30	A
Lindane	133		111		30-150	18		30	A
Alpha-BHC	142		117		30-150	19		30	A
Beta-BHC	125		107		30-150	16		30	A
Heptachlor	138		116		30-150	17		30	A
Aldrin	127		105		30-150	19		30	A
Heptachlor epoxide	133		111		30-150	18		30	A
Endrin	139		118		30-150	16		30	A
Endrin aldehyde	125		102		30-150	20		30	A
Endrin ketone	142		120		30-150	17		30	A
Dieldrin	142		119		30-150	18		30	A
4,4'-DDE	126		108		30-150	15		30	A
4,4'-DDD	140		118		30-150	17		30	A
4,4'-DDT	142		120		30-150	17		30	A
Endosulfan I	114		99		30-150	14		30	A
Endosulfan II	130		111		30-150	16		30	A
Endosulfan sulfate	150		129		30-150	15		30	A
Methoxychlor	130		111		30-150	16		30	A
cis-Chlordane	100		84		30-150	17		30	A
trans-Chlordane	117		100		30-150	16		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,05 Batch: WG1271177-2 WG1271177-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	134		124		30-150	B
Decachlorobiphenyl	123		122		30-150	B
2,4,5,6-Tetrachloro-m-xylene	138		127		30-150	A
Decachlorobiphenyl	114		118		30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271177-4 WG1271177-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0													
Delta-BHC	ND	35.3	32.8	93		32.8	97		30-150	0		50	A
Lindane	ND	35.3	33.1	94		32.3	96		30-150	2		50	A
Alpha-BHC	ND	35.3	33.7	95		34.1	101		30-150	1		50	A
Beta-BHC	ND	35.3	32.5	92		32.8	97		30-150	1		50	A
Heptachlor	ND	35.3	29.2	83		28.2	83		30-150	3		50	A
Aldrin	ND	35.3	27.5	78		27.0	80		30-150	2		50	A
Heptachlor epoxide	ND	35.3	27.3	77		26.9	80		30-150	1		50	A
Endrin	ND	35.3	26.5	75		26.3	78		30-150	1		50	A
Endrin aldehyde	ND	35.3	18.0	51		21.2	63		30-150	16		50	A
Endrin ketone	ND	35.3	23.3	66		24.1	71		30-150	3		50	A
Dieldrin	ND	35.3	26.9	76		27.0	80		30-150	0		50	A
4,4'-DDE	1.13J	35.3	28.3	80		28.0	83		30-150	1		50	B
4,4'-DDD	ND	35.3	27.7	78		26.6	79		30-150	4		50	B
4,4'-DDT	2.85JP	35.3	31.0	88		30.5	90		30-150	2		50	B
Endosulfan I	ND	35.3	23.0	65		23.6	70		30-150	3		50	A
Endosulfan II	ND	35.3	24.2	69		23.9	71		30-150	1		50	A
Endosulfan sulfate	ND	35.3	20.0	57		20.6	61		30-150	3		50	A
Methoxychlor	ND	35.3	21.4	61		22.3	66		30-150	4		50	A
cis-Chlordane	ND	35.3	23.7	67		24.4	72		30-150	3		50	A
trans-Chlordane	ND	35.3	29.3	83		29.5	87		30-150	1		50	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271177-4 WG1271177-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		99		30-150	B
Decachlorobiphenyl	88		102		30-150	B
2,4,5,6-Tetrachloro-m-xylene	92		100		30-150	A
Decachlorobiphenyl	68		71		30-150	A

METALS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY
Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	9240		mg/kg	8.06	2.18	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Antimony, Total	1.18	J	mg/kg	4.03	0.306	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Arsenic, Total	3.38		mg/kg	0.806	0.168	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Barium, Total	39.3		mg/kg	0.806	0.140	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Beryllium, Total	0.346	J	mg/kg	0.403	0.027	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Cadmium, Total	1.73		mg/kg	0.806	0.079	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Calcium, Total	3720		mg/kg	8.06	2.82	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Chromium, Total	17.8		mg/kg	0.806	0.077	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Cobalt, Total	8.24		mg/kg	1.61	0.134	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Copper, Total	66.8		mg/kg	0.806	0.208	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Iron, Total	51300		mg/kg	40.3	7.28	20	08/08/19 20:25	08/09/19 17:46	EPA 3050B	1,6010D	LC
Lead, Total	70.0		mg/kg	4.03	0.216	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Magnesium, Total	5480		mg/kg	8.06	1.24	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Manganese, Total	721		mg/kg	0.806	0.128	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Mercury, Total	0.178		mg/kg	0.067	0.044	1	08/09/19 05:00	08/12/19 12:53	EPA 7471B	1,7471B	GD
Nickel, Total	19.2		mg/kg	2.01	0.195	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Potassium, Total	225		mg/kg	201	11.6	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Selenium, Total	0.806	J	mg/kg	1.61	0.208	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.806	0.228	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Sodium, Total	76.7	J	mg/kg	161	2.54	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Thallium, Total	0.572	J	mg/kg	1.61	0.254	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Vanadium, Total	12.8		mg/kg	0.806	0.164	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC
Zinc, Total	138		mg/kg	4.03	0.236	2	08/08/19 20:25	08/09/19 14:48	EPA 3050B	1,6010D	LC

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY
Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	12500		mg/kg	8.32	2.25	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Antimony, Total	ND		mg/kg	4.16	0.316	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Arsenic, Total	1.46		mg/kg	0.832	0.173	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Barium, Total	33.7		mg/kg	0.832	0.145	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Beryllium, Total	0.416		mg/kg	0.416	0.028	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Cadmium, Total	0.791	J	mg/kg	0.832	0.082	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Calcium, Total	7480		mg/kg	8.32	2.91	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Chromium, Total	16.1		mg/kg	0.832	0.080	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Cobalt, Total	8.44		mg/kg	1.66	0.138	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Copper, Total	15.2		mg/kg	0.832	0.215	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Iron, Total	24100		mg/kg	4.16	0.752	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Lead, Total	11.9		mg/kg	4.16	0.223	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Magnesium, Total	9340		mg/kg	8.32	1.28	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Manganese, Total	479		mg/kg	0.832	0.132	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.066	0.043	1	08/09/19 05:00	08/12/19 13:59	EPA 7471B	1,7471B	GD
Nickel, Total	18.3		mg/kg	2.08	0.201	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Potassium, Total	362		mg/kg	208	12.0	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Selenium, Total	0.716	J	mg/kg	1.66	0.215	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.832	0.236	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Sodium, Total	30.8	J	mg/kg	166	2.62	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.66	0.262	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Vanadium, Total	13.9		mg/kg	0.832	0.169	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC
Zinc, Total	55.3		mg/kg	4.16	0.244	2	08/08/19 20:25	08/09/19 16:59	EPA 3050B	1,6010D	LC

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,05 Batch: WG1270290-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Arsenic, Total	0.148	J	mg/kg	0.400	0.083	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Iron, Total	ND		mg/kg	2.00	0.361	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Sodium, Total	1.42	J	mg/kg	80.0	1.26	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,05 Batch: WG1270413-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/09/19 05:00	08/12/19 12:49	1,7471B	GD

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 Batch: WG1270290-2 SRM Lot Number: D105-540								
Aluminum, Total	58		-		51-149	-		
Antimony, Total	134		-		19-249	-		
Arsenic, Total	93		-		70-130	-		
Barium, Total	83		-		75-125	-		
Beryllium, Total	86		-		75-125	-		
Cadmium, Total	89		-		75-125	-		
Calcium, Total	81		-		73-127	-		
Chromium, Total	84		-		70-130	-		
Cobalt, Total	91		-		75-125	-		
Copper, Total	86		-		75-125	-		
Iron, Total	78		-		38-162	-		
Lead, Total	87		-		71-128	-		
Magnesium, Total	76		-		63-137	-		
Manganese, Total	82		-		76-124	-		
Nickel, Total	91		-		70-131	-		
Potassium, Total	69		-		60-140	-		
Selenium, Total	92		-		63-137	-		
Silver, Total	85		-		69-131	-		
Sodium, Total	89		-		37-162	-		
Thallium, Total	87		-		68-132	-		
Vanadium, Total	87		-		65-135	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 Batch: WG1270290-2 SRM Lot Number: D105-540					
Zinc, Total	88	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 01,05 Batch: WG1270413-2 SRM Lot Number: D105-540					
Mercury, Total	99	-	60-141	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270290-3 WG1270290-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Aluminum, Total	9240	168	9310	**42**	Q	11100	**1110**	Q	75-125	18		20
Antimony, Total	1.18J	41.9	39.2	93		38.2	91		75-125	3		20
Arsenic, Total	3.38	10.1	12.7	92		12.3	89		75-125	3		20
Barium, Total	39.3	168	195	93		213	104		75-125	9		20
Beryllium, Total	0.346J	4.19	4.15	99		4.14	99		75-125	0		20
Cadmium, Total	1.73	4.28	4.85	**73**	Q	5.24	82		75-125	8		20
Calcium, Total	3720	839	12400	**1030**	Q	6660	**351**	Q	75-125	**60**	Q	20
Chromium, Total	17.8	16.8	27.0	**55**	Q	28.7	**65**	Q	75-125	6		20
Cobalt, Total	8.24	41.9	42.9	83		44.7	87		75-125	4		20
Copper, Total	66.8	21	42.1	**0**	Q	49.5	**0**	Q	75-125	16		20
Iron, Total	51300	83.9	24300	**0**	Q	36500	**0**	Q	75-125	**40**	Q	20
Lead, Total	70.0	42.8	97.2	**64**	Q	151	**190**	Q	75-125	**43**	Q	20
Magnesium, Total	5480	839	10700	**622**	Q	7850	**283**	Q	75-125	**31**	Q	20
Manganese, Total	721	41.9	607	**0**	Q	1360	**1520**	Q	75-125	**77**	Q	20
Nickel, Total	19.2	41.9	53.0	80		57.3	91		75-125	8		20
Potassium, Total	225	839	1010	94		1010	94		75-125	0		20
Selenium, Total	0.806J	10.1	10.0	99		10.1	100		75-125	1		20
Silver, Total	ND	25.2	24.7	98		24.2	96		75-125	2		20
Sodium, Total	76.7J	839	871	104		848	101		75-125	3		20
Thallium, Total	0.572J	10.1	8.30	82		8.55	85		75-125	3		20
Vanadium, Total	12.8	41.9	52.4	94		54.4	99		75-125	4		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270290-3 WG1270290-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Zinc, Total	138	41.9	156	**43**	Q	202	**153**	Q	75-125	**26**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270413-3 WG1270413-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Mercury, Total	0.178	0.134	0.277	**74**	Q	0.337	119		80-120	20		20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.0		%	0.100	NA	1	-	08/07/19 14:01	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	08/08/19 13:40	08/09/19 14:01	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05
Client ID: HVRA-MW101-8.0
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 15:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.8		%	0.100	NA	1	-	08/07/19 14:01	121,2540G	RI
Cyanide, Total	ND		mg/kg	0.96	0.20	1	08/08/19 13:40	08/09/19 14:06	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,05 Batch: WG1269984-1										
Cyanide, Total	ND		mg/kg	0.88	0.18	1	08/08/19 13:40	08/09/19 13:54	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,05 Batch: WG1269984-2 WG1269984-3								
Cyanide, Total	**58**	Q	**62**	Q	80-120	15		35

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1269984-4 WG1269984-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Cyanide, Total	ND	10	10	97		9.9	100		75-125	1		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1269661-1 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0						
Solids, Total	94.0	92.7	%	1		20

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934860-01A	Vial MeOH preserved	A	NA		3.1	Y	Absent		NYTCL-8260HLW-R2(14)
L1934860-01A1	Vial MeOH preserved	A	NA		3.1	Y	Absent		NYTCL-8260HLW-R2(14)
L1934860-01A2	Vial MeOH preserved	A	NA		3.1	Y	Absent		NYTCL-8260HLW-R2(14)
L1934860-01B	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01B1	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01B2	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01C	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01C1	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01C2	Vial water preserved	A	NA		3.1	Y	Absent	06-AUG-19 08:08	NYTCL-8260HLW-R2(14)
L1934860-01D	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1934860-01D1	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1934860-01D2	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1934860-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1934860-01E1	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1934860-01E2	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1934860-01F	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1934860-01F1	Glass 250ml/8oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1934860-01F2	Glass 250ml/8oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1934860-01G	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1934860-01H	Plastic 8oz unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(28)
L1934860-01H1	Plastic 8oz unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(28)
L1934860-01H2	Plastic 8oz unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(28)
L1934860-02A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934860-03A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934860-04A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1934860-05A	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L1934860-05B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1934860-05C	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1934860-05D	Plastic 8oz unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(28)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when using acetone as a solvent.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1934860
Project Number:	18.8090	**Report Date:**	08/21/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 08/06/19

ALPHA Job #: L1934860

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappinger's Falls, NY
Project #: 18,8090
(Use Project name as Project #) ☐
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
*Confirm analyses w/ D.Lent - d.lent@ctmale.com *

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL PCBs	TCL SVOCs	TCL Pest.	TAL Metals	PFAS, moisture	1,4-Dioxane	CN	Sample Specific Comments	Total Bottle
34860-01	HVRA-MW100-6.0	8/5/19	1300	Soil	CB	✓	✓	✓	✓	✓	✓	✓	✓	MS/MSD HERE	22
-02	HVRA-FTB01-190805	↓	1340	Water	CB						✓	✓			1
-03	HVRA-LTB01-190805		—	Water	CB						✓	✓			1
-04	HVRA-RB01-190805		14:25	Water	CB						✓	✓			1
-05	HVRA-MW101-8.5		15:00	Soil	CB		✓		✓	✓	✓	✓	✓		4

Container Type	G	A	A	A	A	P	A	A
Preservative	F	A	A	A	A	A	A	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	16:40 8/5/19	GTAC (AAL)	8/5/19@16:40
GTAC /	8/5/19@18:40		8/5/19 1930
	8/6/19 00:15		8/6/19 00:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1935085
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	08/20/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1935085-01	HVRA-FTB01-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 10:00	08/06/19
L1935085-02	HVRA-LTB01-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 00:00	08/06/19
L1935085-03	HVRA-RB01-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 08:35	08/06/19
L1935085-04	HVRA-MW102-4.5	SOIL	WAPPINGERS FALLS, NY	08/06/19 09:45	08/06/19
L1935085-05	HVRA-FD01-190806	SOIL	WAPPINGERS FALLS, NY	08/06/19 00:00	08/06/19
L1935085-06	HVRA-MW103-10.0	SOIL	WAPPINGERS FALLS, NY	08/06/19 11:45	08/06/19
L1935085-07	HVRA-RB02-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 11:30	08/06/19
L1935085-08	HVRA-RB03-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 12:50	08/06/19
L1935085-09	HVRA-MW104-9.5	SOIL	WAPPINGERS FALLS, NY	08/06/19 13:25	08/06/19
L1935085-10	HVRA-EB01-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 13:20	08/06/19
L1935085-11	HVRA-RB04-190806	WATER	WAPPINGERS FALLS, NY	08/06/19 14:45	08/06/19
L1935085-12	HVRA-MW105-4.0	SOIL	WAPPINGERS FALLS, NY	08/06/19 15:50	08/06/19
L1935085-13	TRIP BLANK	WATER	WAPPINGERS FALLS, NY	08/06/19 00:00	08/06/19

Project Name:	HVRA	**Lab Number:**	L1935085
Project Number:	18.8090	**Report Date:**	08/20/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1935085
Project Number:	18.8090	**Report Date:**	08/20/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1935085-13: A sample identified as "TRIP BLANK" was received, but not listed on the Chain of Custody and was not analyzed.

Volatile Organics

L1935085-02: The Trip Blank has a result for acetone present above the reporting limit. The sample was verified as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

Perfluorinated Alkyl Acids by Isotope Dilution

L1935085-04, -05, -09, and -12: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1270181-2/-3 LCS/LCSD RPD, associated with L1935085-04, -05, -06, -09, and -12, is above the acceptance criteria for perfluorooctanesulfonamide (fosa) (34%).

WG1271296-1: The continuing calibration standard had the response for 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

Total Metals

L1935085-04, -05, and -06: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Cyanide, Total

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Case Narrative (continued)

The WG1269546-2/-3 LCS/LCSD recoveries (73%/72%), associated with L1935085-04, -05, and -06, are outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/20/19

ORGANICS

VOLATILES

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-02 Date Collected: 08/06/19 00:00

Client ID: HVRA-LTB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260C

Analytical Date: 08/14/19 08:25

Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-02 Date Collected: 08/06/19 00:00

Client ID: HVRA-LTB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.0		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	111		70-130

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45
Client ID: HVRA-MW102-4.5 Date Received: 08/06/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/15/19 21:51
Analyst: AD
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.7	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.95	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.95	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.95	0.12	1
Dibromochloromethane	ND		ug/kg	0.95	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.95	0.25	1
Tetrachloroethene	ND		ug/kg	0.47	0.18	1
Chlorobenzene	ND		ug/kg	0.47	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.8	0.66	1
1,2-Dichloroethane	ND		ug/kg	0.95	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.47	0.16	1
Bromodichloromethane	ND		ug/kg	0.47	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.95	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.47	0.15	1
Bromoform	ND		ug/kg	3.8	0.23	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.47	0.16	1
Benzene	ND		ug/kg	0.47	0.16	1
Toluene	ND		ug/kg	0.95	0.51	1
Ethylbenzene	ND		ug/kg	0.95	0.13	1
Chloromethane	ND		ug/kg	3.8	0.88	1
Bromomethane	ND		ug/kg	1.9	0.55	1
Vinyl chloride	ND		ug/kg	0.95	0.32	1
Chloroethane	ND		ug/kg	1.9	0.43	1
1,1-Dichloroethene	ND		ug/kg	0.95	0.22	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.47	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.53	1
o-Xylene	ND		ug/kg	0.95	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	0.16	1
Styrene	ND		ug/kg	0.95	0.18	1
Dichlorodifluoromethane	ND		ug/kg	9.5	0.87	1
Acetone	13		ug/kg	9.5	4.6	1
Carbon disulfide	ND		ug/kg	9.5	4.3	1
2-Butanone	ND		ug/kg	9.5	2.1	1
4-Methyl-2-pentanone	ND		ug/kg	9.5	1.2	1
2-Hexanone	ND		ug/kg	9.5	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.19	1
1,2-Dibromoethane	ND		ug/kg	0.95	0.26	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	0.95	1
Isopropylbenzene	ND		ug/kg	0.95	0.10	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.30	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
Methyl Acetate	ND		ug/kg	3.8	0.90	1
Cyclohexane	ND		ug/kg	9.5	0.52	1
1,4-Dioxane	ND		ug/kg	76	33.	1
Freon-113	ND		ug/kg	3.8	0.66	1
Methyl cyclohexane	ND		ug/kg	3.8	0.57	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	99		70-130

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260C

Analytical Date: 08/15/19 22:31

Analyst: AD

Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.0	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
1,2-Dichloropropane	ND		ug/kg	1.0	0.12	1
Dibromochloromethane	ND		ug/kg	1.0	0.14	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27	1
Tetrachloroethene	ND		ug/kg	0.50	0.20	1
Chlorobenzene	ND		ug/kg	0.50	0.13	1
Trichlorofluoromethane	ND		ug/kg	4.0	0.70	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17	1
Bromodichloromethane	ND		ug/kg	0.50	0.11	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27	1
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16	1
Bromoform	ND		ug/kg	4.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17	1
Benzene	ND		ug/kg	0.50	0.17	1
Toluene	ND		ug/kg	1.0	0.55	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Chloromethane	ND		ug/kg	4.0	0.94	1
Bromomethane	ND		ug/kg	2.0	0.58	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
Chloroethane	ND		ug/kg	2.0	0.46	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.50	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.56	1
o-Xylene	ND		ug/kg	1.0	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Styrene	ND		ug/kg	1.0	0.20	1
Dichlorodifluoromethane	ND		ug/kg	10	0.92	1
Acetone	54		ug/kg	10	4.8	1
Carbon disulfide	ND		ug/kg	10	4.6	1
2-Butanone	ND		ug/kg	10	2.2	1
4-Methyl-2-pentanone	ND		ug/kg	10	1.3	1
2-Hexanone	ND		ug/kg	10	1.2	1
Bromochloromethane	ND		ug/kg	2.0	0.21	1
1,2-Dibromoethane	ND		ug/kg	1.0	0.28	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0	1
Isopropylbenzene	ND		ug/kg	1.0	0.11	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27	1
Methyl Acetate	38		ug/kg	4.0	0.96	1
Cyclohexane	ND		ug/kg	10	0.55	1
1,4-Dioxane	ND		ug/kg	80	35.	1
Freon-113	ND		ug/kg	4.0	0.70	1
Methyl cyclohexane	ND		ug/kg	4.0	0.61	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	99		70-130

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/15/19 23:10
Analyst: AD
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.96	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.96	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.96	0.12	1
Dibromochloromethane	ND		ug/kg	0.96	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.96	0.26	1
Tetrachloroethene	ND		ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.8	0.67	1
1,2-Dichloroethane	ND		ug/kg	0.96	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Bromodichloromethane	ND		ug/kg	0.48	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.96	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.48	0.15	1
Bromoform	ND		ug/kg	3.8	0.24	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.48	0.16	1
Benzene	ND		ug/kg	0.48	0.16	1
Toluene	ND		ug/kg	0.96	0.52	1
Ethylbenzene	ND		ug/kg	0.96	0.14	1
Chloromethane	ND		ug/kg	3.8	0.89	1
Bromomethane	ND		ug/kg	1.9	0.56	1
Vinyl chloride	ND		ug/kg	0.96	0.32	1
Chloroethane	ND		ug/kg	1.9	0.43	1
1,1-Dichloroethene	ND		ug/kg	0.96	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.54	1
o-Xylene	ND		ug/kg	0.96	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.96	0.17	1
Styrene	ND		ug/kg	0.96	0.19	1
Dichlorodifluoromethane	ND		ug/kg	9.6	0.88	1
Acetone	ND		ug/kg	9.6	4.6	1
Carbon disulfide	ND		ug/kg	9.6	4.4	1
2-Butanone	ND		ug/kg	9.6	2.1	1
4-Methyl-2-pentanone	ND		ug/kg	9.6	1.2	1
2-Hexanone	ND		ug/kg	9.6	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.20	1
1,2-Dibromoethane	ND		ug/kg	0.96	0.27	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.9	0.96	1
Isopropylbenzene	ND		ug/kg	0.96	0.10	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.31	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
Methyl Acetate	ND		ug/kg	3.8	0.91	1
Cyclohexane	ND		ug/kg	9.6	0.52	1
1,4-Dioxane	ND		ug/kg	77	34.	1
Freon-113	ND		ug/kg	3.8	0.66	1
Methyl cyclohexane	ND		ug/kg	3.8	0.58	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	99		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 08:50
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.6	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	111		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 06:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,10 Batch: WG1272181-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 06:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,10 Batch: WG1272181-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 06:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,10 Batch: WG1272181-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	106		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 18:33
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04-06 Batch: WG1273158-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 18:33
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04-06 Batch: WG1273158-5					
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
1,4-Dioxane	ND		ug/kg	80	35.
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 18:33
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04-06 Batch: WG1273158-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,10 Batch: WG1272181-3 WG1272181-4								
Methylene chloride	98		98		70-130	0		20
1,1-Dichloroethane	97		98		70-130	1		20
Chloroform	95		94		70-130	1		20
Carbon tetrachloride	94		99		63-132	5		20
1,2-Dichloropropane	96		96		70-130	0		20
Dibromochloromethane	92		90		63-130	2		20
1,1,2-Trichloroethane	97		90		70-130	7		20
Tetrachloroethene	93		98		70-130	5		20
Chlorobenzene	94		93		75-130	1		20
Trichlorofluoromethane	87		96		62-150	10		20
1,2-Dichloroethane	83		83		70-130	0		20
1,1,1-Trichloroethane	89		93		67-130	4		20
Bromodichloromethane	88		89		67-130	1		20
trans-1,3-Dichloropropene	89		88		70-130	1		20
cis-1,3-Dichloropropene	95		94		70-130	1		20
Bromoform	82		81		54-136	1		20
1,1,2,2-Tetrachloroethane	91		87		67-130	4		20
Benzene	96		98		70-130	2		20
Toluene	94		93		70-130	1		20
Ethylbenzene	90		90		70-130	0		20
Chloromethane	93		98		64-130	5		20
Bromomethane	71		71		39-139	0		20
Vinyl chloride	86		94		55-140	9		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,10 Batch: WG1272181-3 WG1272181-4								
Chloroethane	70		74		55-138	6		20
1,1-Dichloroethene	98		100		61-145	2		20
trans-1,2-Dichloroethene	98		100		70-130	2		20
Trichloroethene	94		98		70-130	4		20
1,2-Dichlorobenzene	88		88		70-130	0		20
1,3-Dichlorobenzene	90		89		70-130	1		20
1,4-Dichlorobenzene	88		88		70-130	0		20
Methyl tert butyl ether	83		80		63-130	4		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	96		96		70-130	0		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	93		100		36-147	7		20
Acetone	110		98		58-148	12		20
Carbon disulfide	99		100		51-130	1		20
2-Butanone	100		98		63-138	2		20
4-Methyl-2-pentanone	84		80		59-130	5		20
2-Hexanone	88		76		57-130	15		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	94		90		70-130	4		20
1,2-Dibromo-3-chloropropane	82		78		41-144	5		20
Isopropylbenzene	81		84		70-130	4		20
1,2,3-Trichlorobenzene	84		82		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,10 Batch: WG1272181-3 WG1272181-4								
1,2,4-Trichlorobenzene	83		82		70-130	1		20
Methyl Acetate	120		110		70-130	9		20
Cyclohexane	100		120		70-130	18		20
1,4-Dioxane	100		80		56-162	**22**	Q	20
Freon-113	100		120		70-130	18		20
Methyl cyclohexane	92		100		70-130	8		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		90		70-130
Toluene-d8	107		106		70-130
4-Bromofluorobenzene	88		91		70-130
Dibromofluoromethane	106		108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06 Batch: WG1273158-3 WG1273158-4								
Methylene chloride	90		92		70-130	2		30
1,1-Dichloroethane	91		94		70-130	3		30
Chloroform	92		94		70-130	2		30
Carbon tetrachloride	82		84		70-130	2		30
1,2-Dichloropropane	92		94		70-130	2		30
Dibromochloromethane	81		84		70-130	4		30
1,1,2-Trichloroethane	92		92		70-130	0		30
Tetrachloroethene	86		87		70-130	1		30
Chlorobenzene	91		94		70-130	3		30
Trichlorofluoromethane	84		86		70-139	2		30
1,2-Dichloroethane	86		88		70-130	2		30
1,1,1-Trichloroethane	88		90		70-130	2		30
Bromodichloromethane	89		92		70-130	3		30
trans-1,3-Dichloropropene	84		86		70-130	2		30
cis-1,3-Dichloropropene	87		90		70-130	3		30
Bromoform	78		78		70-130	0		30
1,1,2,2-Tetrachloroethane	93		91		70-130	2		30
Benzene	93		94		70-130	1		30
Toluene	91		91		70-130	0		30
Ethylbenzene	94		96		70-130	2		30
Chloromethane	74		75		52-130	1		30
Bromomethane	100		99		57-147	1		30
Vinyl chloride	80		81		67-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06 Batch: WG1273158-3 WG1273158-4								
Chloroethane	92		93		50-151	1		30
1,1-Dichloroethene	88		91		65-135	3		30
trans-1,2-Dichloroethene	91		93		70-130	2		30
Trichloroethene	90		92		70-130	2		30
1,2-Dichlorobenzene	88		89		70-130	1		30
1,3-Dichlorobenzene	89		91		70-130	2		30
1,4-Dichlorobenzene	89		90		70-130	1		30
Methyl tert butyl ether	87		88		66-130	1		30
p/m-Xylene	92		94		70-130	2		30
o-Xylene	92		95		70-130	3		30
cis-1,2-Dichloroethene	90		92		70-130	2		30
Styrene	93		95		70-130	2		30
Dichlorodifluoromethane	60		61		30-146	2		30
Acetone	66		**51**	Q	54-140	26		30
Carbon disulfide	77		80		59-130	4		30
2-Butanone	86		80		70-130	7		30
4-Methyl-2-pentanone	89		83		70-130	7		30
2-Hexanone	89		83		70-130	7		30
Bromochloromethane	86		86		70-130	0		30
1,2-Dibromoethane	84		85		70-130	1		30
1,2-Dibromo-3-chloropropane	73		72		68-130	1		30
Isopropylbenzene	96		97		70-130	1		30
1,2,3-Trichlorobenzene	83		85		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06 Batch: WG1273158-3 WG1273158-4								
1,2,4-Trichlorobenzene	85		87		70-130	2		30
Methyl Acetate	79		78		51-146	1		30
Cyclohexane	84		86		59-142	2		30
1,4-Dioxane	81		76		65-136	6		30
Freon-113	84		86		50-139	2		30
Methyl cyclohexane	85		89		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	105		104		70-130
4-Bromofluorobenzene	108		107		70-130
Dibromofluoromethane	95		97		70-130

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-01
Client ID: HVRA-FTB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 10:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 12:34
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.02	0.413	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.02	0.401	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.02	0.241	1
Perfluorohexanoic Acid (PFHxA)	0.364	J	ng/l	2.02	0.332	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.02	0.228	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.02	0.380	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.02	0.239	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.02	1.35	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.02	0.696	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.02	0.316	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.02	0.510	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.02	0.308	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.02	1.23	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.02	0.656	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.02	0.263	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.02	0.992	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.02	0.587	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.02	0.814	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.02	0.376	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.02	0.331	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.02	0.251	1
PFOA/PFOS, Total	ND		ng/l	2.02	0.239	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-01 Date Collected: 08/06/19 10:00

Client ID: HVRA-FTB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	57		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	107		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-02
Client ID: HVRA-LTB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 12:51
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.96	0.400	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.96	0.388	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.96	0.233	1
Perfluorohexanoic Acid (PFHxA)	0.396	J	ng/l	1.96	0.322	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.96	0.221	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.96	0.369	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.96	0.231	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.96	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.96	0.674	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.96	0.306	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.96	0.494	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.96	0.298	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.96	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.96	0.635	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.96	0.255	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.96	0.961	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.96	0.569	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.96	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.96	0.365	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.96	0.321	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.96	0.243	1
PFOA/PFOS, Total	ND		ng/l	1.96	0.231	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-02 Date Collected: 08/06/19 00:00

Client ID: HVRA-LTB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	60		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	94		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	135		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-03
Client ID: HVRA-RB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 08:35
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	0.234	1
Perfluorohexanoic Acid (PFHxA)	0.583	J	ng/l	1.97	0.323	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	0.370	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	0.232	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.97	0.677	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	0.307	1
Perfluorooctanesulfonic Acid (PFOS)	0.524	J	ng/l	1.97	0.496	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.299	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.638	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.964	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.571	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.366	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.322	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1
PFOA/PFOS, Total	0.524	J	ng/l	1.97	0.232	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-03 Date Collected: 08/06/19 08:35

Client ID: HVRA-RB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	119		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	108		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	22		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	145		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	111		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04
Client ID: HVRA-MW102-4.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 09:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/17/19 16:02
Analyst: RC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 04:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	25.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	49.	1
2,4-Dinitrotoluene	ND		ug/kg	180	37.	1
2,6-Dinitrotoluene	ND		ug/kg	180	32.	1
Fluoranthene	ND		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	18.	1
Hexachlorobutadiene	ND		ug/kg	180	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	530	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	160	24.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	64.	1
Butyl benzyl phthalate	ND		ug/kg	180	46.	1
Di-n-butylphthalate	ND		ug/kg	180	35.	1
Di-n-octylphthalate	ND		ug/kg	180	62.	1
Diethyl phthalate	ND		ug/kg	180	17.	1
Dimethyl phthalate	ND		ug/kg	180	39.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	45.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	110	31.	1
Benzo(k)fluoranthene	ND		ug/kg	110	29.	1
Chrysene	ND		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	28.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	420	43.	1
4-Chloroaniline	ND		ug/kg	180	33.	1
2-Nitroaniline	ND		ug/kg	180	35.	1
3-Nitroaniline	ND		ug/kg	180	35.	1
4-Nitroaniline	ND		ug/kg	180	76.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	35.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	22.	1
2,4-Dichlorophenol	ND		ug/kg	160	30.	1
2,4-Dimethylphenol	ND		ug/kg	180	61.	1
2-Nitrophenol	ND		ug/kg	400	69.	1
4-Nitrophenol	ND		ug/kg	260	75.	1
2,4-Dinitrophenol	ND		ug/kg	880	86.	1
4,6-Dinitro-o-cresol	ND		ug/kg	480	88.	1
Pentachlorophenol	ND		ug/kg	150	40.	1
Phenol	ND		ug/kg	180	28.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	29.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	35.	1
Carbazole	ND		ug/kg	180	18.	1
Atrazine	ND		ug/kg	150	64.	1
Benzaldehyde	ND		ug/kg	240	50.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	56.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	37.	1
1,4-Dioxane	ND		ug/kg	28	8.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	75		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	65		30-120
2,4,6-Tribromophenol	65		10-136
4-Terphenyl-d14	65		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04
Client ID: HVRA-MW102-4.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 09:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/13/19 14:43
Analyst: JW
Percent Solids: 89%

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 15:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.00	0.023	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.137	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.288	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.205	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054	1
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	64		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	69		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	69		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	65		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	57		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**36**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	61		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**33**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**54**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	34		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/17/19 02:53
Analyst: RC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 04:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	25.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	49.	1
2,4-Dinitrotoluene	ND		ug/kg	180	37.	1
2,6-Dinitrotoluene	ND		ug/kg	180	32.	1
Fluoranthene	ND		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	18.	1
Hexachlorobutadiene	ND		ug/kg	180	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	530	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	160	24.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	64.	1
Butyl benzyl phthalate	ND		ug/kg	180	46.	1
Di-n-butylphthalate	ND		ug/kg	180	35.	1
Di-n-octylphthalate	ND		ug/kg	180	63.	1
Diethyl phthalate	ND		ug/kg	180	17.	1
Dimethyl phthalate	ND		ug/kg	180	39.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	45.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	110	31.	1
Benzo(k)fluoranthene	ND		ug/kg	110	29.	1
Chrysene	ND		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	28.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	420	43.	1
4-Chloroaniline	ND		ug/kg	180	34.	1
2-Nitroaniline	ND		ug/kg	180	36.	1
3-Nitroaniline	ND		ug/kg	180	35.	1
4-Nitroaniline	ND		ug/kg	180	76.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	35.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	22.	1
2,4-Dichlorophenol	ND		ug/kg	160	30.	1
2,4-Dimethylphenol	ND		ug/kg	180	61.	1
2-Nitrophenol	ND		ug/kg	400	69.	1
4-Nitrophenol	ND		ug/kg	260	75.	1
2,4-Dinitrophenol	ND		ug/kg	880	86.	1
4,6-Dinitro-o-cresol	ND		ug/kg	480	88.	1
Pentachlorophenol	ND		ug/kg	150	40.	1
Phenol	ND		ug/kg	180	28.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	29.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	35.	1
Carbazole	ND		ug/kg	180	18.	1
Atrazine	ND		ug/kg	150	64.	1
Benzaldehyde	ND		ug/kg	240	50.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	56.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	37.	1
1,4-Dioxane	ND		ug/kg	28	8.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		25-120
Phenol-d6	82		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	73		10-136
4-Terphenyl-d14	59		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/13/19 14:59
Analyst: JW
Percent Solids: 89%

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 15:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.09	0.025	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.09	0.050	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.09	0.043	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.09	0.057	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.09	0.049	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.09	0.066	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.09	0.046	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.09	0.196	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.09	0.149	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.09	0.082	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.09	0.142	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.09	0.073	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.09	0.313	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.09	0.220	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.09	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.09	0.167	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.09	0.107	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.09	0.092	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.09	0.076	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.09	0.223	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.09	0.059	1
PFOA/PFOS, Total	ND		ug/kg	1.09	0.046	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	61		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**42**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 02:02
Analyst: IM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/19/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	ND		ug/kg	110	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	510	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	61.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	ND		ug/kg	110	20.	1
Benzo(a)pyrene	ND		ug/kg	140	43.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	110	30.	1
Benzo(k)fluoranthene	ND		ug/kg	110	28.	1
Chrysene	ND		ug/kg	110	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	110	35.	1
Benzo(ghi)perylene	ND		ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	25.	1
Pyrene	ND		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	74.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	59.	1
2-Nitrophenol	ND		ug/kg	380	67.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	850	83.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	85.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Carbazole	ND		ug/kg	180	17.	1
Atrazine	ND		ug/kg	140	62.	1
Benzaldehyde	ND		ug/kg	230	48.	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	54.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	36.	1
1,4-Dioxane	ND		ug/kg	27	8.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		25-120
Phenol-d6	66		10-120
Nitrobenzene-d5	47		23-120
2-Fluorobiphenyl	56		30-120
2,4,6-Tribromophenol	81		10-136
4-Terphenyl-d14	68		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/13/19 15:16
Analyst: JW
Percent Solids: 91%

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 15:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	0.989	0.022	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	0.989	0.046	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.989	0.039	1
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	0.989	0.052	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	0.989	0.045	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	0.989	0.060	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	0.989	0.041	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	8.28		ug/kg	0.989	0.178	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	0.989	0.135	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	0.989	0.074	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	0.989	0.128	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	0.989	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.989	0.284	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.989	0.199	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	0.989	0.046	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	0.989	0.151	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.989	0.097	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.989	0.084	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	0.989	0.069	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.989	0.202	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	0.989	0.053	1
PFOA/PFOS, Total	ND		ug/kg	0.989	0.041	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	78		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-07
Client ID: HVRA-RB02-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:30
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:42
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	0.404	J	ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	0.960	J	ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	0.960	J	ng/l	1.80	0.213	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-07 Date Collected: 08/06/19 11:30

Client ID: HVRA-RB02-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	126		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	135		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	102		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	130		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	121		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	121		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-08
Client ID: HVRA-RB03-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 12:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:59
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.379	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.368	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.221	1
Perfluorohexanoic Acid (PFHxA)	0.416	J	ng/l	1.86	0.305	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.209	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.349	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.219	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.639	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.290	1
Perfluorooctanesulfonic Acid (PFOS)	2.23		ng/l	1.86	0.468	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.602	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.242	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.911	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.539	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.747	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.346	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230	1
PFOA/PFOS, Total	2.23		ng/l	1.86	0.219	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-08 Date Collected: 08/06/19 12:50

Client ID: HVRA-RB03-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	116		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	76		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	94		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-09
Client ID: HVRA-MW104-9.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:25
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/18/19 18:37
Analyst: RC
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,4-Dioxane	ND		ug/kg	26	8.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		25-120
Phenol-d6	95		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	87		10-136
4-Terphenyl-d14	78		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-09
Client ID: HVRA-MW104-9.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:25
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/13/19 15:32
Analyst: JW
Percent Solids: 95%

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 15:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.02	0.023	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.02	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.02	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.138	J	ug/kg	1.02	0.054	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.02	0.046	1
Perfluorohexanesulfonic Acid (PFHxS)	3.65		ug/kg	1.02	0.062	1
Perfluorooctanoic Acid (PFOA)	0.142	J	ug/kg	1.02	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.36		ug/kg	1.02	0.184	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.02	0.140	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.02	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	43.8		ug/kg	1.02	0.133	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.02	0.069	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.02	0.294	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.02	0.206	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.02	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.02	0.157	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.02	0.100	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.02	0.087	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.02	0.072	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.02	0.210	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.02	0.055	1
PFOA/PFOS, Total	43.9	J	ug/kg	1.02	0.043	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-09 Date Collected: 08/06/19 13:25

Client ID: HVRA-MW104-9.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	64		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	73		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**60**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	62		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	74		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	64		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	54		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	65		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	65		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**63**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	61		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**27**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	41		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**29**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**52**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	32		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/14/19 14:25
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.7	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	54		10-120
4-Terphenyl-d14	76		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/09/19 15:18
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/08/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/12/19 13:29
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.06	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	77		10-120
4-Terphenyl-d14	72		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:08
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.375	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	0.409	J	ng/l	1.89	0.311	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.652	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.477	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.928	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.549	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.761	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.235	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	78		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	67		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	22		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	134		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	110		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-11
Client ID: HVRA-RB04-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 14:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 14:16
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.93	0.394	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.93	0.382	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.93	0.230	1
Perfluorohexanoic Acid (PFHxA)	0.448	J	ng/l	1.93	0.317	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.93	0.217	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.93	0.363	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.93	0.228	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.93	1.28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.93	0.664	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.93	0.301	1
Perfluorooctanesulfonic Acid (PFOS)	3.22		ng/l	1.93	0.486	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.93	0.293	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.93	1.17	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.93	0.625	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.93	0.251	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.93	0.946	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.93	0.560	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.93	0.776	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.93	0.359	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.93	0.316	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.93	0.239	1
PFOA/PFOS, Total	3.22		ng/l	1.93	0.228	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-11 Date Collected: 08/06/19 14:45

Client ID: HVRA-RB04-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	104		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	97		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-12
Client ID: HVRA-MW105-4.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 15:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/18/19 19:02
Analyst: RC
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,4-Dioxane	ND		ug/kg	26	8.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	84		10-120
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	69		10-136
4-Terphenyl-d14	62		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-12
Client ID: HVRA-MW105-4.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 15:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/13/19 15:49
Analyst: JW
Percent Solids: 94%

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 15:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.082	J	ug/kg	1.02	0.023	1
Perfluoropentanoic Acid (PFPeA)	0.219	J	ug/kg	1.02	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	0.075	J	ug/kg	1.02	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.342	J	ug/kg	1.02	0.054	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.02	0.046	1
Perfluorohexanesulfonic Acid (PFHxS)	4.77		ug/kg	1.02	0.062	1
Perfluorooctanoic Acid (PFOA)	0.164	J	ug/kg	1.02	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.03		ug/kg	1.02	0.184	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.02	0.140	1
Perfluorononanoic Acid (PFNA)	0.128	J	ug/kg	1.02	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	56.9		ug/kg	1.02	0.133	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.02	0.069	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.02	0.294	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.02	0.206	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.02	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.02	0.157	1
Perfluorooctanesulfonamide (FOSA)	0.142	J	ug/kg	1.02	0.100	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.02	0.087	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.02	0.072	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.02	0.209	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.02	0.055	1
PFOA/PFOS, Total	57.1	J	ug/kg	1.02	0.043	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-12 Date Collected: 08/06/19 15:50

Client ID: HVRA-MW105-4.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	63		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**60**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**59**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	80		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	63		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	63		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	66		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**62**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**26**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**51**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	28		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/11/19 15:02
Analyst: PB

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 13:52

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04-06,09,12 Batch: WG1270181-1					
Perfluorobutanoic Acid (PFBA)	0.077	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/11/19 15:02
Analyst: PB

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 13:52

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04-06,09,12 Batch: WG1270181-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	95		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	5		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	74		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/09/19 09:23
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 08/08/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 10 Batch: WG1270249-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	36		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/13/19 13:47
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 10 Batch: WG1271094-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/13/19 13:47
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 10 Batch: WG1271094-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	39		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	76		15-120
2,4,6-Tribromophenol	49		10-120
4-Terphenyl-d14	79		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/12/19 12:07
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1271095-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.02	J	ug/l	0.10	0.01
Phenanthrene	0.05	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/12/19 12:07
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1271095-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	40		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	75		10-120
4-Terphenyl-d14	72		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 11:09
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03,07-08,10-11 Batch: WG1272715-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.380	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	0.276	J	ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	0.276	J	ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 11:09
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03,07-08,10-11 Batch: WG1272715-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	32		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	113		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/17/19 00:22
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/16/19 04:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-05 Batch: WG1273108-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/17/19 00:22
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/16/19 04:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-05 Batch: WG1273108-1					
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/17/19 00:22
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/16/19 04:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-05 Batch: WG1273108-1					
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	44.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	86		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	81		10-136
4-Terphenyl-d14	83		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/18/19 11:03
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09,12 Batch: WG1273531-1					
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	98		25-120
Phenol-d6	105		10-120
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	99		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/19 00:16
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/19/19 05:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG1273919-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	22.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	26.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/19 00:16
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/19/19 05:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG1273919-1					
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	25.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	27.
2,4-Dimethylphenol	ND		ug/kg	160	55.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	68.
2,4-Dinitrophenol	ND		ug/kg	800	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	80.
Pentachlorophenol	ND		ug/kg	130	36.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/19 00:16
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/19/19 05:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG1273919-1					
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	45.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	55		30-120
2,4,6-Tribromophenol	78		10-136
4-Terphenyl-d14	63		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04-06,09,12 Batch: WG1270181-2 WG1270181-3								
Perfluorobutanoic Acid (PFBA)	91		88		71-135	3		30
Perfluoropentanoic Acid (PFPeA)	90		88		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	82		83		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	89		88		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	94		89		71-131	5		30
Perfluorohexanesulfonic Acid (PFHxS)	81		77		67-130	5		30
Perfluorooctanoic Acid (PFOA)	91		89		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	102		92		64-140	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	86		87		70-132	1		30
Perfluorononanoic Acid (PFNA)	87		91		72-129	4		30
Perfluorooctanesulfonic Acid (PFOS)	84		83		68-136	1		30
Perfluorodecanoic Acid (PFDA)	91		90		69-133	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	85		84		65-137	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	98		89		63-144	10		30
Perfluoroundecanoic Acid (PFUnA)	91		85		64-136	7		30
Perfluorodecanesulfonic Acid (PFDS)	86		91		59-134	6		30
Perfluorooctanesulfonamide (FOSA)	88		124		67-137	**34**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	88		81		61-139	8		30
Perfluorododecanoic Acid (PFDoA)	94		91		69-135	3		30
Perfluorotridecanoic Acid (PFTrDA)	94		92		66-139	2		30
Perfluorotetradecanoic Acid (PFTA)	96		94		69-133	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04-06,09,12 Batch: WG1270181-2 WG1270181-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		72		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		85		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		106		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		83		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		90		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		109		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		95		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		81		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		97		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		104		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		93		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		91		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		85		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		94		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		77		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		85		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50		55		26-160

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 10 Batch: WG1270249-2 WG1270249-3								
1,4-Dioxane	123		122		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	29		36		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 10 Batch: WG1271094-2 WG1271094-3								
Bis(2-chloroethyl)ether	70		74		40-140	6		30
3,3'-Dichlorobenzidine	54		51		40-140	6		30
2,4-Dinitrotoluene	63		70		48-143	11		30
2,6-Dinitrotoluene	72		82		40-140	13		30
4-Chlorophenyl phenyl ether	63		70		40-140	11		30
4-Bromophenyl phenyl ether	67		71		40-140	6		30
Bis(2-chloroisopropyl)ether	82		92		40-140	11		30
Bis(2-chloroethoxy)methane	74		81		40-140	9		30
Hexachlorocyclopentadiene	64		72		40-140	12		30
Isophorone	79		87		40-140	10		30
Nitrobenzene	69		77		40-140	11		30
NDPA/DPA	66		67		40-140	2		30
n-Nitrosodi-n-propylamine	81		90		29-132	11		30
Bis(2-ethylhexyl)phthalate	84		99		40-140	16		30
Butyl benzyl phthalate	91		99		40-140	8		30
Di-n-butylphthalate	80		93		40-140	15		30
Di-n-octylphthalate	96		110		40-140	14		30
Diethyl phthalate	72		78		40-140	8		30
Dimethyl phthalate	77		88		40-140	13		30
Biphenyl	65		72		40-140	10		30
4-Chloroaniline	56		80		40-140	**35**	Q	30
2-Nitroaniline	74		86		52-143	15		30
3-Nitroaniline	52		58		25-145	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 10 Batch: WG1271094-2 WG1271094-3								
4-Nitroaniline	60		65		51-143	8		30
Dibenzofuran	61		66		40-140	8		30
1,2,4,5-Tetrachlorobenzene	61		70		2-134	14		30
Acetophenone	63		69		39-129	9		30
2,4,6-Trichlorophenol	68		78		30-130	14		30
p-Chloro-m-cresol	79		86		23-97	8		30
2-Chlorophenol	68		75		27-123	10		30
2,4-Dichlorophenol	71		78		30-130	9		30
2,4-Dimethylphenol	56		47		30-130	17		30
2-Nitrophenol	74		82		30-130	10		30
4-Nitrophenol	59		64		10-80	8		30
2,4-Dinitrophenol	50		60		20-130	18		30
4,6-Dinitro-o-cresol	70		76		20-164	8		30
Phenol	51		58		12-110	13		30
3-Methylphenol/4-Methylphenol	64		68		30-130	6		30
2,4,5-Trichlorophenol	78		88		30-130	12		30
Carbazole	74		83		55-144	11		30
Atrazine	100		109		40-140	9		30
Benzaldehyde	68		72		40-140	6		30
Caprolactam	49		56		10-130	13		30
2,3,4,6-Tetrachlorophenol	63		73		40-140	15		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 10 Batch: WG1271094-2 WG1271094-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	54		60		21-120
Phenol-d6	47		52		10-120
Nitrobenzene-d5	71		81		23-120
2-Fluorobiphenyl	67		79		15-120
2,4,6-Tribromophenol	57		61		10-120
4-Terphenyl-d14	73		83		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1271095-2 WG1271095-3								
Acenaphthene	90		66		40-140	31		40
2-Chloronaphthalene	92		70		40-140	27		40
Fluoranthene	90		65		40-140	32		40
Hexachlorobutadiene	82		63		40-140	26		40
Naphthalene	85		65		40-140	27		40
Benzo(a)anthracene	94		69		40-140	31		40
Benzo(a)pyrene	98		72		40-140	31		40
Benzo(b)fluoranthene	93		69		40-140	30		40
Benzo(k)fluoranthene	97		72		40-140	30		40
Chrysene	88		65		40-140	30		40
Acenaphthylene	97		72		40-140	30		40
Anthracene	95		70		40-140	30		40
Benzo(ghi)perylene	85		62		40-140	31		40
Fluorene	92		67		40-140	31		40
Phenanthrene	90		66		40-140	31		40
Dibenzo(a,h)anthracene	96		69		40-140	33		40
Indeno(1,2,3-cd)pyrene	93		67		40-140	33		40
Pyrene	89		65		40-140	31		40
2-Methylnaphthalene	94		71		40-140	28		40
Pentachlorophenol	69		41		40-140	**51**	Q	40
Hexachlorobenzene	97		73		40-140	28		40
Hexachloroethane	74		56		40-140	28		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1271095-2 WG1271095-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	64		49		21-120
Phenol-d6	51		38		10-120
Nitrobenzene-d5	90		68		23-120
2-Fluorobiphenyl	83		62		15-120
2,4,6-Tribromophenol	95		68		10-120
4-Terphenyl-d14	88		64		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,07-08,10-11 Batch: WG1272715-2 WG1272715-3								
Perfluorobutanoic Acid (PFBA)	107		113		67-148	5		30
Perfluoropentanoic Acid (PFPeA)	106		109		63-161	3		30
Perfluorobutanesulfonic Acid (PFBS)	99		102		65-157	3		30
Perfluorohexanoic Acid (PFHxA)	111		112		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	106		115		58-159	8		30
Perfluorohexanesulfonic Acid (PFHxS)	87		89		69-177	2		30
Perfluorooctanoic Acid (PFOA)	113		115		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	125		104		49-187	18		30
Perfluoroheptanesulfonic Acid (PFHpS)	101		112		61-179	10		30
Perfluorononanoic Acid (PFNA)	112		118		68-171	5		30
Perfluorooctanesulfonic Acid (PFOS)	95		101		52-151	6		30
Perfluorodecanoic Acid (PFDA)	106		114		63-171	7		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	94		93		56-173	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	105		117		60-166	11		30
Perfluoroundecanoic Acid (PFUnA)	111		103		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	92		97		38-156	5		30
Perfluorooctanesulfonamide (FOSA)	107		107		46-170	0		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	98		107		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	97		93		67-153	4		30
Perfluorotridecanoic Acid (PFTrDA)	88		92		48-158	4		30
Perfluorotetradecanoic Acid (PFTA)	103		95		59-182	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,07-08,10-11 Batch: WG1272715-2 WG1272715-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	106		105		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		103		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		94		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	116		127		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		107		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		110		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		95		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	101		99		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	127		118		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	122		120		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	108		113		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-05 Batch: WG1273108-2 WG1273108-3								
Acenaphthene	69		79		31-137	14		50
Hexachlorobenzene	69		77		40-140	11		50
Bis(2-chloroethyl)ether	67		77		40-140	14		50
2-Chloronaphthalene	66		72		40-140	9		50
3,3'-Dichlorobenzidine	54		58		40-140	7		50
2,4-Dinitrotoluene	81		90		40-132	11		50
2,6-Dinitrotoluene	78		84		40-140	7		50
Fluoranthene	73		80		40-140	9		50
4-Chlorophenyl phenyl ether	68		76		40-140	11		50
4-Bromophenyl phenyl ether	71		78		40-140	9		50
Bis(2-chloroisopropyl)ether	55		61		40-140	10		50
Bis(2-chloroethoxy)methane	71		79		40-117	11		50
Hexachlorobutadiene	66		73		40-140	10		50
Hexachlorocyclopentadiene	65		73		40-140	12		50
Hexachloroethane	67		73		40-140	9		50
Isophorone	75		84		40-140	11		50
Naphthalene	68		77		40-140	12		50
Nitrobenzene	72		82		40-140	13		50
NDPA/DPA	72		81		36-157	12		50
n-Nitrosodi-n-propylamine	76		85		32-121	11		50
Bis(2-ethylhexyl)phthalate	80		88		40-140	10		50
Butyl benzyl phthalate	82		91		40-140	10		50
Di-n-butylphthalate	83		91		40-140	9		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-05 Batch: WG1273108-2 WG1273108-3								
Di-n-octylphthalate	88		98		40-140	11		50
Diethyl phthalate	73		81		40-140	10		50
Dimethyl phthalate	69		78		40-140	12		50
Benzo(a)anthracene	75		84		40-140	11		50
Benzo(a)pyrene	68		77		40-140	12		50
Benzo(b)fluoranthene	73		80		40-140	9		50
Benzo(k)fluoranthene	67		77		40-140	14		50
Chrysene	69		77		40-140	11		50
Acenaphthylene	69		77		40-140	11		50
Anthracene	74		84		40-140	13		50
Benzo(ghi)perylene	75		84		40-140	11		50
Fluorene	72		80		40-140	11		50
Phenanthrene	71		78		40-140	9		50
Dibenzo(a,h)anthracene	78		87		40-140	11		50
Indeno(1,2,3-cd)pyrene	76		92		40-140	19		50
Pyrene	70		78		35-142	11		50
Biphenyl	72		80		37-127	11		50
4-Chloroaniline	55		57		40-140	4		50
2-Nitroaniline	78		88		47-134	12		50
3-Nitroaniline	64		69		26-129	8		50
4-Nitroaniline	72		80		41-125	11		50
Dibenzofuran	73		81		40-140	10		50
2-Methylnaphthalene	69		78		40-140	12		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-05 Batch: WG1273108-2 WG1273108-3								
1,2,4,5-Tetrachlorobenzene	70		77		40-117	10		50
Acetophenone	75		85		14-144	13		50
2,4,6-Trichlorophenol	75		83		30-130	10		50
p-Chloro-m-cresol	80		87		26-103	8		50
2-Chlorophenol	75		85		25-102	13		50
2,4-Dichlorophenol	75		85		30-130	13		50
2,4-Dimethylphenol	75		85		30-130	13		50
2-Nitrophenol	77		87		30-130	12		50
4-Nitrophenol	75		84		11-114	11		50
2,4-Dinitrophenol	60		62		4-130	3		50
4,6-Dinitro-o-cresol	87		95		10-130	9		50
Pentachlorophenol	67		73		17-109	9		50
Phenol	76		84		26-90	10		50
2-Methylphenol	79		90		30-130.	13		50
3-Methylphenol/4-Methylphenol	77		88		30-130	13		50
2,4,5-Trichlorophenol	76		86		30-130	12		50
Carbazole	76		85		54-128	11		50
Atrazine	79		86		40-140	8		50
Benzaldehyde	76		87		40-140	13		50
Caprolactam	73		81		15-130	10		50
2,3,4,6-Tetrachlorophenol	72		80		40-140	11		50
1,4-Dioxane	52		58		40-140	11		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-05 Batch: WG1273108-2 WG1273108-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	72		82		25-120
Phenol-d6	75		84		10-120
Nitrobenzene-d5	74		78		23-120
2-Fluorobiphenyl	63		70		30-120
2,4,6-Tribromophenol	69		79		10-136
4-Terphenyl-d14	68		77		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09,12 Batch: WG1273531-2 WG1273531-3								
1,4-Dioxane	75		71		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	102		92		25-120
Phenol-d6	106		96		10-120
Nitrobenzene-d5	103		96		23-120
2-Fluorobiphenyl	88		80		30-120
2,4,6-Tribromophenol	91		87		10-136
4-Terphenyl-d14	90		84		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1273919-2 WG1273919-3								
Acenaphthene	73		61		31-137	18		50
Hexachlorobenzene	80		64		40-140	22		50
Bis(2-chloroethyl)ether	65		61		40-140	6		50
2-Chloronaphthalene	75		66		40-140	13		50
3,3'-Dichlorobenzidine	64		46		40-140	33		50
2,4-Dinitrotoluene	85		67		40-132	24		50
2,6-Dinitrotoluene	92		74		40-140	22		50
Fluoranthene	81		63		40-140	25		50
4-Chlorophenyl phenyl ether	76		63		40-140	19		50
4-Bromophenyl phenyl ether	81		64		40-140	23		50
Bis(2-chloroisopropyl)ether	58		55		40-140	5		50
Bis(2-chloroethoxy)methane	77		68		40-117	12		50
Hexachlorobutadiene	63		57		40-140	10		50
Hexachlorocyclopentadiene	68		62		40-140	9		50
Hexachloroethane	56		55		40-140	2		50
Isophorone	79		70		40-140	12		50
Naphthalene	64		57		40-140	12		50
Nitrobenzene	70		65		40-140	7		50
NDPA/DPA	79		64		36-157	21		50
n-Nitrosodi-n-propylamine	77		69		32-121	11		50
Bis(2-ethylhexyl)phthalate	89		73		40-140	20		50
Butyl benzyl phthalate	89		68		40-140	27		50
Di-n-butylphthalate	84		67		40-140	23		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1273919-2 WG1273919-3								
Di-n-octylphthalate	91		72		40-140	23		50
Diethyl phthalate	84		68		40-140	21		50
Dimethyl phthalate	85		70		40-140	19		50
Benzo(a)anthracene	72		58		40-140	22		50
Benzo(a)pyrene	74		54		40-140	31		50
Benzo(b)fluoranthene	75		54		40-140	33		50
Benzo(k)fluoranthene	77		57		40-140	30		50
Chrysene	71		57		40-140	22		50
Acenaphthylene	78		66		40-140	17		50
Anthracene	79		64		40-140	21		50
Benzo(ghi)perylene	63		49		40-140	25		50
Fluorene	78		63		40-140	21		50
Phenanthrene	73		59		40-140	21		50
Dibenzo(a,h)anthracene	69		53		40-140	26		50
Indeno(1,2,3-cd)pyrene	67		52		40-140	25		50
Pyrene	78		60		35-142	26		50
Biphenyl	80		68		37-127	16		50
4-Chloroaniline	70		55		40-140	24		50
2-Nitroaniline	90		72		47-134	22		50
3-Nitroaniline	70		54		26-129	26		50
4-Nitroaniline	82		63		41-125	26		50
Dibenzofuran	73		60		40-140	20		50
2-Methylnaphthalene	71		63		40-140	12		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1273919-2 WG1273919-3								
1,2,4,5-Tetrachlorobenzene	69		62		40-117	11		50
Acetophenone	82		76		14-144	8		50
2,4,6-Trichlorophenol	84		71		30-130	17		50
p-Chloro-m-cresol	93		76		26-103	20		50
2-Chlorophenol	74		68		25-102	8		50
2,4-Dichlorophenol	88		79		30-130	11		50
2,4-Dimethylphenol	91		82		30-130	10		50
2-Nitrophenol	83		75		30-130	10		50
4-Nitrophenol	81		59		11-114	31		50
2,4-Dinitrophenol	74		58		4-130	24		50
4,6-Dinitro-o-cresol	86		67		10-130	25		50
Pentachlorophenol	83		65		17-109	24		50
Phenol	78		70		26-90	11		50
2-Methylphenol	80		71		30-130.	12		50
3-Methylphenol/4-Methylphenol	91		82		30-130	10		50
2,4,5-Trichlorophenol	87		68		30-130	25		50
Carbazole	78		62		54-128	23		50
Atrazine	90		70		40-140	25		50
Benzaldehyde	70		62		40-140	12		50
Caprolactam	92		70		15-130	27		50
2,3,4,6-Tetrachlorophenol	80		63		40-140	24		50
1,4-Dioxane	**29**	Q	**34**	Q	40-140	16		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1273919-2 WG1273919-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	74		68		25-120
Phenol-d6	80		70		10-120
Nitrobenzene-d5	62		55		23-120
2-Fluorobiphenyl	58		50		30-120
2,4,6-Tribromophenol	89		69		10-136
4-Terphenyl-d14	65		49		18-120

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04
Client ID: HVRA-MW102-4.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 09:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/18/19 20:04
Analyst: WR
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:25
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.5	3.15	1	A
Aroclor 1221	ND		ug/kg	35.5	3.56	1	A
Aroclor 1232	ND		ug/kg	35.5	7.52	1	A
Aroclor 1242	ND		ug/kg	35.5	4.78	1	A
Aroclor 1248	ND		ug/kg	35.5	5.32	1	A
Aroclor 1254	ND		ug/kg	35.5	3.88	1	A
Aroclor 1260	ND		ug/kg	35.5	6.56	1	A
Aroclor 1262	ND		ug/kg	35.5	4.51	1	A
Aroclor 1268	ND		ug/kg	35.5	3.68	1	A
PCBs, Total	ND		ug/kg	35.5	3.15	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	47		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/18/19 20:16
Analyst: WR
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:25
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.8	3.27	1	A
Aroclor 1221	ND		ug/kg	36.8	3.69	1	A
Aroclor 1232	ND		ug/kg	36.8	7.80	1	A
Aroclor 1242	ND		ug/kg	36.8	4.96	1	A
Aroclor 1248	ND		ug/kg	36.8	5.52	1	A
Aroclor 1254	ND		ug/kg	36.8	4.03	1	A
Aroclor 1260	ND		ug/kg	36.8	6.80	1	A
Aroclor 1262	ND		ug/kg	36.8	4.67	1	A
Aroclor 1268	ND		ug/kg	36.8	3.81	1	A
PCBs, Total	ND		ug/kg	36.8	3.27	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	51		30-150	A
Decachlorobiphenyl	36		30-150	A
2,4,5,6-Tetrachloro-m-xylene	51		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/18/19 20:29
Analyst: WR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:25
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.5	3.15	1	A
Aroclor 1221	ND		ug/kg	35.5	3.55	1	A
Aroclor 1232	ND		ug/kg	35.5	7.52	1	A
Aroclor 1242	ND		ug/kg	35.5	4.78	1	A
Aroclor 1248	ND		ug/kg	35.5	5.32	1	A
Aroclor 1254	ND		ug/kg	35.5	3.88	1	A
Aroclor 1260	ND		ug/kg	35.5	6.55	1	A
Aroclor 1262	ND		ug/kg	35.5	4.50	1	A
Aroclor 1268	ND		ug/kg	35.5	3.67	1	A
PCBs, Total	ND		ug/kg	35.5	3.15	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/16/19 05:09
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 10:26
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/15/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/16/19 07:38
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 10:26
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/15/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 10 Batch: WG1271086-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	56		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/17/19 11:20
Analyst: KB

Extraction Method: EPA 3546
Extraction Date: 08/15/19 23:55
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 04-06 Batch: WG1273044-1						
Aroclor 1016	ND		ug/kg	33.0	2.93	A
Aroclor 1221	ND		ug/kg	33.0	3.31	A
Aroclor 1232	ND		ug/kg	33.0	7.00	A
Aroclor 1242	ND		ug/kg	33.0	4.45	A
Aroclor 1248	ND		ug/kg	33.0	4.95	A
Aroclor 1254	ND		ug/kg	33.0	3.61	A
Aroclor 1260	ND		ug/kg	33.0	6.10	A
Aroclor 1262	ND		ug/kg	33.0	4.19	A
Aroclor 1268	ND		ug/kg	33.0	3.42	A
PCBs, Total	ND		ug/kg	33.0	2.93	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	61		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 10 Batch: WG1271086-2 WG1271086-3									
Aroclor 1016	71		68		40-140	4		50	A
Aroclor 1260	64		61		40-140	5		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		65		30-150	A
Decachlorobiphenyl	68		67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		66		30-150	B
Decachlorobiphenyl	68		65		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04-06 Batch: WG1273044-2 WG1273044-3									
Aroclor 1016	86		94		40-140	9		50	A
Aroclor 1260	91		98		40-140	7		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		79		30-150	A
Decachlorobiphenyl	75		79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		73		30-150	B
Decachlorobiphenyl	66		68		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04
Client ID: HVRA-MW102-4.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 09:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/17/19 23:42
Analyst: SL
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:45
Cleanup Method: EPA 3620B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.76	0.345	1	A
Lindane	ND		ug/kg	0.734	0.328	1	A
Alpha-BHC	ND		ug/kg	0.734	0.209	1	A
Beta-BHC	ND		ug/kg	1.76	0.668	1	A
Heptachlor	ND		ug/kg	0.881	0.395	1	A
Aldrin	ND		ug/kg	1.76	0.621	1	A
Heptachlor epoxide	ND		ug/kg	3.30	0.992	1	A
Endrin	ND		ug/kg	0.734	0.301	1	A
Endrin aldehyde	ND		ug/kg	2.20	0.771	1	A
Endrin ketone	ND		ug/kg	1.76	0.454	1	A
Dieldrin	ND		ug/kg	1.10	0.551	1	A
4,4'-DDE	ND		ug/kg	1.76	0.408	1	A
4,4'-DDD	ND		ug/kg	1.76	0.629	1	A
4,4'-DDT	ND		ug/kg	3.30	1.42	1	A
Endosulfan I	ND		ug/kg	1.76	0.416	1	A
Endosulfan II	ND		ug/kg	1.76	0.589	1	A
Endosulfan sulfate	ND		ug/kg	0.734	0.350	1	A
Methoxychlor	ND		ug/kg	3.30	1.03	1	A
Toxaphene	ND		ug/kg	33.0	9.25	1	A
cis-Chlordane	ND		ug/kg	2.20	0.614	1	A
trans-Chlordane	ND		ug/kg	2.20	0.582	1	A
Chlordane	ND		ug/kg	14.3	5.84	1	A

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	130		30-150	B
Decachlorobiphenyl	143		30-150	B
2,4,5,6-Tetrachloro-m-xylene	126		30-150	A
Decachlorobiphenyl	138		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/17/19 23:53
Analyst: SL
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:45
Cleanup Method: EPA 3620B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.75	0.342	1	A
Lindane	ND		ug/kg	0.729	0.326	1	A
Alpha-BHC	ND		ug/kg	0.729	0.207	1	A
Beta-BHC	ND		ug/kg	1.75	0.663	1	A
Heptachlor	ND		ug/kg	0.875	0.392	1	A
Aldrin	ND		ug/kg	1.75	0.616	1	A
Heptachlor epoxide	ND		ug/kg	3.28	0.984	1	A
Endrin	ND		ug/kg	0.729	0.299	1	A
Endrin aldehyde	ND		ug/kg	2.19	0.765	1	A
Endrin ketone	ND		ug/kg	1.75	0.450	1	A
Dieldrin	ND		ug/kg	1.09	0.547	1	A
4,4'-DDE	ND		ug/kg	1.75	0.404	1	A
4,4'-DDD	ND		ug/kg	1.75	0.624	1	A
4,4'-DDT	ND		ug/kg	3.28	1.41	1	A
Endosulfan I	ND		ug/kg	1.75	0.413	1	A
Endosulfan II	ND		ug/kg	1.75	0.584	1	A
Endosulfan sulfate	ND		ug/kg	0.729	0.347	1	A
Methoxychlor	ND		ug/kg	3.28	1.02	1	A
Toxaphene	ND		ug/kg	32.8	9.18	1	A
cis-Chlordane	ND		ug/kg	2.19	0.609	1	A
trans-Chlordane	ND		ug/kg	2.19	0.577	1	A
Chlordane	ND		ug/kg	14.2	5.79	1	A

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05 Date Collected: 08/06/19 00:00

Client ID: HVRA-FD01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	99		30-150	B
Decachlorobiphenyl	110		30-150	B
2,4,5,6-Tetrachloro-m-xylene	98		30-150	A
Decachlorobiphenyl	103		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/18/19 00:05
Analyst: SL
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/16/19 03:45
Cleanup Method: EPA 3620B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.328	1	A
Lindane	ND		ug/kg	0.698	0.312	1	A
Alpha-BHC	ND		ug/kg	0.698	0.198	1	A
Beta-BHC	ND		ug/kg	1.67	0.635	1	A
Heptachlor	ND		ug/kg	0.837	0.375	1	A
Aldrin	ND		ug/kg	1.67	0.589	1	A
Heptachlor epoxide	ND		ug/kg	3.14	0.942	1	A
Endrin	ND		ug/kg	0.698	0.286	1	A
Endrin aldehyde	ND		ug/kg	2.09	0.732	1	A
Endrin ketone	ND		ug/kg	1.67	0.431	1	A
Dieldrin	ND		ug/kg	1.05	0.523	1	A
4,4'-DDE	ND		ug/kg	1.67	0.387	1	A
4,4'-DDD	ND		ug/kg	1.67	0.597	1	A
4,4'-DDT	ND		ug/kg	3.14	1.35	1	A
Endosulfan I	ND		ug/kg	1.67	0.396	1	A
Endosulfan II	ND		ug/kg	1.67	0.559	1	A
Endosulfan sulfate	ND		ug/kg	0.698	0.332	1	A
Methoxychlor	ND		ug/kg	3.14	0.977	1	A
Toxaphene	ND		ug/kg	31.4	8.79	1	A
cis-Chlordane	ND		ug/kg	2.09	0.583	1	A
trans-Chlordane	ND		ug/kg	2.09	0.552	1	A
Chlordane	ND		ug/kg	13.6	5.54	1	A

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	109		30-150	B
Decachlorobiphenyl	123		30-150	B
2,4,5,6-Tetrachloro-m-xylene	107		30-150	A
Decachlorobiphenyl	104		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 13:21
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/15/19 02:34
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 10 Batch: WG1271187-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A
Chlordane	ND		ug/l	0.143	0.033	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/15/19 02:34
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 10 Batch: WG1271187-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	95		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/17/19 20:47
Analyst: AMC

Extraction Method: EPA 3546
Extraction Date: 08/15/19 23:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04-06 Batch: WG1273037-1						
Delta-BHC	ND		ug/kg	1.51	0.295	A
Lindane	ND		ug/kg	0.628	0.281	A
Alpha-BHC	ND		ug/kg	0.628	0.178	A
Beta-BHC	ND		ug/kg	1.51	0.571	A
Heptachlor	ND		ug/kg	0.753	0.338	A
Aldrin	ND		ug/kg	1.51	0.530	A
Heptachlor epoxide	ND		ug/kg	2.82	0.847	A
Endrin	ND		ug/kg	0.628	0.257	A
Endrin aldehyde	ND		ug/kg	1.88	0.659	A
Endrin ketone	ND		ug/kg	1.51	0.388	A
Dieldrin	ND		ug/kg	0.942	0.471	A
4,4'-DDE	ND		ug/kg	1.51	0.348	A
4,4'-DDD	ND		ug/kg	1.51	0.537	A
4,4'-DDT	ND		ug/kg	2.82	1.21	A
Endosulfan I	ND		ug/kg	1.51	0.356	A
Endosulfan II	ND		ug/kg	1.51	0.503	A
Endosulfan sulfate	ND		ug/kg	0.628	0.299	A
Methoxychlor	ND		ug/kg	2.82	0.879	A
Toxaphene	ND		ug/kg	28.2	7.91	A
cis-Chlordane	ND		ug/kg	1.88	0.525	A
trans-Chlordane	ND		ug/kg	1.88	0.497	A
Chlordane	ND		ug/kg	12.2	4.99	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/17/19 20:47
Analyst: AMC

Extraction Method: EPA 3546
Extraction Date: 08/15/19 23:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04-06 Batch: WG1273037-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	91		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	81		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 10 Batch: WG1271187-2 WG1271187-3									
Delta-BHC	75		94		30-150	**23**	Q	20	A
Lindane	83		95		30-150	14		20	A
Alpha-BHC	85		96		30-150	12		20	A
Beta-BHC	79		93		30-150	16		20	A
Heptachlor	80		95		30-150	18		20	A
Aldrin	76		89		30-150	15		20	A
Heptachlor epoxide	88		106		30-150	19		20	A
Endrin	87		108		30-150	**22**	Q	20	A
Endrin aldehyde	69		89		30-150	**25**	Q	20	A
Endrin ketone	87		111		30-150	**25**	Q	20	A
Dieldrin	88		108		30-150	20		20	A
4,4'-DDE	83		103		30-150	**22**	Q	20	A
4,4'-DDD	84		110		30-150	**27**	Q	20	A
4,4'-DDT	86		113		30-150	**27**	Q	20	A
Endosulfan I	78		92		30-150	17		20	A
Endosulfan II	78		102		30-150	**26**	Q	20	A
Endosulfan sulfate	87		116		30-150	**28**	Q	20	A
Methoxychlor	80		106		30-150	**28**	Q	20	A
cis-Chlordane	74		84		30-150	13		20	A
trans-Chlordane	79		97		30-150	**21**	Q	20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 10 Batch: WG1271187-2 WG1271187-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		88		30-150	A
Decachlorobiphenyl	74		95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		87		30-150	B
Decachlorobiphenyl	78		93		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04-06 Batch: WG1273037-2 WG1273037-3									
Delta-BHC	84		84		30-150	0		30	A
Lindane	81		81		30-150	0		30	A
Alpha-BHC	89		89		30-150	0		30	A
Beta-BHC	79		78		30-150	1		30	A
Heptachlor	86		84		30-150	2		30	A
Aldrin	77		75		30-150	3		30	A
Heptachlor epoxide	82		80		30-150	2		30	A
Endrin	89		87		30-150	2		30	A
Endrin aldehyde	63		69		30-150	9		30	A
Endrin ketone	86		87		30-150	1		30	A
Dieldrin	90		87		30-150	3		30	A
4,4'-DDE	78		76		30-150	3		30	A
4,4'-DDD	88		86		30-150	2		30	A
4,4'-DDT	90		88		30-150	2		30	A
Endosulfan I	74		72		30-150	3		30	A
Endosulfan II	84		83		30-150	1		30	A
Endosulfan sulfate	87		89		30-150	2		30	A
Methoxychlor	81		80		30-150	1		30	A
cis-Chlordane	63		61		30-150	3		30	A
trans-Chlordane	73		72		30-150	1		30	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04-06 Batch: WG1273037-2 WG1273037-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		88		30-150	B
Decachlorobiphenyl	85		83		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		85		30-150	A
Decachlorobiphenyl	72		78		30-150	A

METALS

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11000		mg/kg	8.86	2.39	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Antimony, Total	1.35	J	mg/kg	4.43	0.337	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Arsenic, Total	4.67		mg/kg	0.886	0.184	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Barium, Total	44.1		mg/kg	0.886	0.154	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Beryllium, Total	0.363	J	mg/kg	0.443	0.029	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.886	0.087	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Calcium, Total	34200		mg/kg	8.86	3.10	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Chromium, Total	13.3		mg/kg	0.886	0.085	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Cobalt, Total	9.42		mg/kg	1.77	0.147	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Copper, Total	27.5		mg/kg	0.886	0.228	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Iron, Total	24300		mg/kg	4.43	0.800	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Lead, Total	9.85		mg/kg	4.43	0.237	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Magnesium, Total	7670		mg/kg	8.86	1.36	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Manganese, Total	657		mg/kg	0.886	0.141	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.071	0.046	1	08/14/19 07:10	08/14/19 15:20	EPA 7471B	1,7471B	GD
Nickel, Total	18.9		mg/kg	2.21	0.214	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Potassium, Total	850		mg/kg	221	12.8	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.77	0.228	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.886	0.251	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Sodium, Total	49.2	J	mg/kg	177	2.79	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.77	0.279	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Vanadium, Total	13.4		mg/kg	0.886	0.180	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB
Zinc, Total	57.4		mg/kg	4.43	0.260	2	08/13/19 22:15	08/14/19 20:08	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11400		mg/kg	8.64	2.33	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Antimony, Total	1.18	J	mg/kg	4.32	0.328	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Arsenic, Total	4.53		mg/kg	0.864	0.180	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Barium, Total	50.0		mg/kg	0.864	0.150	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Beryllium, Total	0.363	J	mg/kg	0.432	0.029	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.864	0.085	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Calcium, Total	21900		mg/kg	8.64	3.02	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Chromium, Total	14.1		mg/kg	0.864	0.083	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Cobalt, Total	9.32		mg/kg	1.73	0.143	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Copper, Total	29.4		mg/kg	0.864	0.223	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Iron, Total	25000		mg/kg	4.32	0.780	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Lead, Total	9.87		mg/kg	4.32	0.232	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Magnesium, Total	7590		mg/kg	8.64	1.33	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Manganese, Total	551		mg/kg	0.864	0.137	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.071	0.046	1	08/14/19 07:10	08/14/19 15:22	EPA 7471B	1,7471B	GD
Nickel, Total	19.2		mg/kg	2.16	0.209	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Potassium, Total	820		mg/kg	216	12.4	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.73	0.223	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.864	0.244	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Sodium, Total	45.9	J	mg/kg	173	2.72	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.73	0.272	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Vanadium, Total	13.9		mg/kg	0.864	0.175	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB
Zinc, Total	59.5		mg/kg	4.32	0.253	2	08/13/19 22:15	08/14/19 20:12	EPA 3050B	1,6010D	AB

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06 Date Collected: 08/06/19 11:45

Client ID: HVRA-MW103-10.0 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10800		mg/kg	8.28	2.24	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Antimony, Total	1.32	J	mg/kg	4.14	0.315	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Arsenic, Total	5.06		mg/kg	0.828	0.172	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Barium, Total	43.1		mg/kg	0.828	0.144	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Beryllium, Total	0.406	J	mg/kg	0.414	0.027	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.828	0.081	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Calcium, Total	22800		mg/kg	8.28	2.90	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Chromium, Total	14.0		mg/kg	0.828	0.080	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Cobalt, Total	10.6		mg/kg	1.66	0.138	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Copper, Total	25.5		mg/kg	0.828	0.214	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Iron, Total	23600		mg/kg	4.14	0.748	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Lead, Total	10.7		mg/kg	4.14	0.222	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Magnesium, Total	9470		mg/kg	8.28	1.28	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Manganese, Total	730		mg/kg	0.828	0.132	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.070	0.046	1	08/14/19 07:10	08/14/19 15:24	EPA 7471B	1,7471B	GD
Nickel, Total	20.5		mg/kg	2.07	0.200	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Potassium, Total	866		mg/kg	207	11.9	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.66	0.214	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.828	0.234	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Sodium, Total	52.4	J	mg/kg	166	2.61	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.66	0.261	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Vanadium, Total	13.4		mg/kg	0.828	0.168	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB
Zinc, Total	56.3		mg/kg	4.14	0.243	2	08/13/19 22:15	08/14/19 20:17	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Iron, Total	ND		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Manganese, Total	0.00113		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/14/19 12:05	08/14/19 16:32	EPA 7470A	1,7470A	GD
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1271502-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Iron, Total	ND		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04-06 Batch: WG1271994-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 08/20/19

Method Blank Analysis
Batch Quality Control

Barium, Total	ND		mg/kg	0.400	0.070	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Chromium, Total	0.060	J	mg/kg	0.400	0.038	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Iron, Total	0.972	J	mg/kg	2.00	0.361	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Sodium, Total	1.80	J	mg/kg	80.0	1.26	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	08/13/19 22:15	08/14/19 15:48	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04-06 Batch: WG1272076-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/14/19 07:10	08/14/19 11:09	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1272265-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/14/19 12:05	08/14/19 16:08	1,7470A	GD

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1271502-2								
Aluminum, Total	108		-		80-120	-		
Antimony, Total	93		-		80-120	-		
Arsenic, Total	109		-		80-120	-		
Barium, Total	108		-		80-120	-		
Beryllium, Total	109		-		80-120	-		
Cadmium, Total	113		-		80-120	-		
Calcium, Total	114		-		80-120	-		
Chromium, Total	105		-		80-120	-		
Cobalt, Total	104		-		80-120	-		
Copper, Total	100		-		80-120	-		
Iron, Total	112		-		80-120	-		
Lead, Total	108		-		80-120	-		
Magnesium, Total	108		-		80-120	-		
Manganese, Total	104		-		80-120	-		
Nickel, Total	108		-		80-120	-		
Potassium, Total	110		-		80-120	-		
Selenium, Total	112		-		80-120	-		
Silver, Total	102		-		80-120	-		
Sodium, Total	108		-		80-120	-		
Thallium, Total	107		-		80-120	-		
Vanadium, Total	105		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1271502-2					
Zinc, Total	112	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-06 Batch: WG1271994-2 SRM Lot Number: D105-540					
Aluminum, Total	62	-	51-149	-	
Antimony, Total	159	-	19-249	-	
Arsenic, Total	100	-	70-130	-	
Barium, Total	83	-	75-125	-	
Beryllium, Total	85	-	75-125	-	
Cadmium, Total	96	-	75-125	-	
Calcium, Total	73	-	73-127	-	
Chromium, Total	84	-	70-130	-	
Cobalt, Total	93	-	75-125	-	
Copper, Total	84	-	75-125	-	
Iron, Total	76	-	38-162	-	
Lead, Total	89	-	71-128	-	
Magnesium, Total	76	-	63-137	-	
Manganese, Total	86	-	76-124	-	
Nickel, Total	96	-	70-131	-	
Potassium, Total	72	-	60-140	-	
Selenium, Total	98	-	63-137	-	
Silver, Total	85	-	69-131	-	
Sodium, Total	80	-	37-162	-	
Thallium, Total	97	-	68-132	-	
Zinc, Total	90	-	70-130	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-06 Batch: WG1272076-2 SRM Lot Number: D105-540					
Mercury, Total	99	-	60-141	-	
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1272265-2					
Mercury, Total	100	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1271502-3 WG1271502-4 QC Sample: L1935927-03 Client ID: MS Sample												
Aluminum, Total	ND	2	2.09	104		2.16	108		75-125	3		20
Antimony, Total	0.00125J	0.5	0.4393	88		0.4867	97		75-125	10		20
Arsenic, Total	0.00810	0.12	0.1390	109		0.1377	108		75-125	1		20
Barium, Total	0.1521	2	2.260	105		2.359	110		75-125	4		20
Beryllium, Total	ND	0.05	0.05027	100		0.05284	106		75-125	5		20
Cadmium, Total	ND	0.051	0.05822	114		0.06010	118		75-125	3		20
Calcium, Total	148.	10	142	**0**	Q	147	**0**	Q	75-125	3		20
Chromium, Total	ND	0.2	0.2105	105		0.2185	109		75-125	4		20
Cobalt, Total	ND	0.5	0.5412	108		0.5532	111		75-125	2		20
Copper, Total	0.00093J	0.25	0.2577	103		0.2587	103		75-125	0		20
Iron, Total	0.434	1	1.58	115		1.58	115		75-125	0		20
Lead, Total	ND	0.51	0.5548	109		0.5836	114		75-125	5		20
Magnesium, Total	42.7	10	49.9	**72**	Q	51.1	84		75-125	2		20
Manganese, Total	0.2582	0.5	0.7640	101		0.7783	104		75-125	2		20
Nickel, Total	0.00112J	0.5	0.5324	106		0.5666	113		75-125	6		20
Potassium, Total	3.04	10	13.3	103		13.8	108		75-125	4		20
Selenium, Total	ND	0.12	0.125	104		0.138	115		75-125	10		20
Silver, Total	ND	0.05	0.05292	106		0.05378	108		75-125	2		20
Sodium, Total	86.9	10	89.7	**28**	Q	91.5	**46**	Q	75-125	2		20
Thallium, Total	0.00018J	0.12	0.1297	108		0.1353	113		75-125	4		20
Vanadium, Total	ND	0.5	0.5446	109		0.5554	111		75-125	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10	QC Batch ID: WG1271502-3				WG1271502-4		QC Sample: L1935927-03	Client ID:	MS Sample
Zinc, Total	ND	0.5	0.5575	112	0.5692	114	75-125	2	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1271502-7 WG1271502-8 QC Sample: L1935927-05 Client ID: MS Sample											
Aluminum, Total	0.0100	2	1.99	99		2.22	110		75-125	11	20
Antimony, Total	ND	0.5	0.4019	80		0.4579	92		75-125	13	20
Arsenic, Total	0.00032J	0.12	0.1248	104		0.1283	107		75-125	3	20
Barium, Total	0.01562	2	2.012	100		2.147	106		75-125	6	20
Beryllium, Total	ND	0.05	0.05898	118		0.05549	111		75-125	6	20
Cadmium, Total	ND	0.051	0.05334	104		0.05600	110		75-125	5	20
Calcium, Total	37.4	10	41.4	**40**	Q	45.0	76		75-125	8	20
Chromium, Total	0.00069J	0.2	0.1996	100		0.2156	108		75-125	8	20
Cobalt, Total	ND	0.5	0.5023	100		0.5347	107		75-125	6	20
Copper, Total	0.00095J	0.25	0.2401	96		0.2516	101		75-125	5	20
Iron, Total	0.0211J	1	1.12	112		1.14	114		75-125	2	20
Lead, Total	ND	0.51	0.5286	104		0.5648	111		75-125	7	20
Magnesium, Total	7.72	10	17.1	94		18.5	108		75-125	8	20
Manganese, Total	0.03920	0.5	0.5259	97		0.5702	106		75-125	8	20
Nickel, Total	0.00057J	0.5	0.5061	101		0.5414	108		75-125	7	20
Potassium, Total	3.16	10	12.7	95		13.7	105		75-125	8	20
Selenium, Total	ND	0.12	0.131	109		0.142	118		75-125	8	20
Silver, Total	ND	0.05	0.05033	101		0.05215	104		75-125	4	20
Sodium, Total	135.	10	127	**0**	Q	137	**20**	Q	75-125	8	20
Thallium, Total	ND	0.12	0.1241	103		0.1337	111		75-125	7	20
Vanadium, Total	ND	0.5	0.5003	100		0.5506	110		75-125	10	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10	QC Batch ID: WG1271502-7				WG1271502-8		QC Sample: L1935927-05	Client ID:	MS Sample
Zinc, Total	ND	0.5	0.5268	105	0.5546	111	75-125	5	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-06 QC Batch ID: WG1271994-3 QC Sample: L1934767-01 Client ID: MS Sample										
Aluminum, Total	7760	183	8660	**491**	Q	-	-	75-125	-	20
Antimony, Total	1.02J	45.8	32.1	**70**	Q	-	-	75-125	-	20
Arsenic, Total	1.50	11	10.3	80		-	-	75-125	-	20
Barium, Total	54.0	183	195	77		-	-	75-125	-	20
Beryllium, Total	0.450	4.58	3.76	**72**	Q	-	-	75-125	-	20
Cadmium, Total	ND	4.67	3.00	**64**	Q	-	-	75-125	-	20
Calcium, Total	1860	916	2580	78		-	-	75-125	-	20
Chromium, Total	16.7	18.3	30.3	**74**	Q	-	-	75-125	-	20
Cobalt, Total	8.96	45.8	41.1	**70**	Q	-	-	75-125	-	20
Copper, Total	9.22	22.9	27.0	78		-	-	75-125	-	20
Iron, Total	18600	91.6	19400	**873**	Q	-	-	75-125	-	20
Lead, Total	9.47	46.7	41.2	**68**	Q	-	-	75-125	-	20
Magnesium, Total	5230	916	6290	116		-	-	75-125	-	20
Manganese, Total	185	45.8	222	81		-	-	75-125	-	20
Nickel, Total	19.8	45.8	53.1	**73**	Q	-	-	75-125	-	20
Potassium, Total	1600	916	2480	96		-	-	75-125	-	20
Selenium, Total	ND	11	6.83	**62**	Q	-	-	75-125	-	20
Silver, Total	ND	27.5	21.3	77		-	-	75-125	-	20
Sodium, Total	266	916	988	79		-	-	75-125	-	20
Thallium, Total	ND	11	7.70	**70**	Q	-	-	75-125	-	20
Zinc, Total	42.9	45.8	76.8	**74**	Q	-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-06 QC Batch ID: WG1272076-3 WG1272076-4 QC Sample: L1935376-09 Client ID: MS Sample									
Mercury, Total	ND	0.142	0.146	102	0.144	101	80-120	1	20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1272265-3 QC Sample: L1935755-37 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00481	96	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-06 QC Batch ID: WG1271994-4 QC Sample: L1934767-01 Client ID: DUP Sample						
Lead, Total	9.47	9.86	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1272265-4 QC Sample: L1935755-37 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-04
Client ID: HVRA-MW102-4.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 09:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	08/07/19 11:50	08/07/19 15:06	1,9010C/9012B	LH
Moisture	10.9		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.8		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	08/07/19 11:50	08/07/19 15:09	1,9010C/9012B	LH
Moisture	11.2		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-06
Client ID: HVRA-MW103-10.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.9		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.23	1	08/07/19 11:50	08/07/19 15:10	1,9010C/9012B	LH
Moisture	9.10		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-09
Client ID: HVRA-MW104-9.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:25
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.7		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/07/19 13:55	08/07/19 16:37	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

SAMPLE RESULTS

Lab ID: L1935085-12
Client ID: HVRA-MW105-4.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 15:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.9		%	0.100	NA	1	-	08/07/19 08:48	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 04-06 Batch: WG1269546-1										
Cyanide, Total	ND		mg/kg	0.84	0.18	1	08/07/19 11:50	08/07/19 14:32	1,9010C/9012B	LH
General Chemistry - Westborough Lab for sample(s): 10 Batch: WG1269575-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/07/19 13:55	08/07/19 16:07	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1269546-2 WG1269546-3								
Cyanide, Total	**73**	Q	**72**	Q	80-120	0		35
General Chemistry - Westborough Lab Associated sample(s): 10 Batch: WG1269575-2 WG1269575-3								
Cyanide, Total	93		96		85-115	3		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06 QC Batch ID: WG1269546-4 WG1269546-5 QC Sample: L1934097-04 Client ID: MS Sample												
Cyanide, Total	ND	21	20	93		19	88		75-125	5		35
General Chemistry - Westborough Lab Associated sample(s): 10 QC Batch ID: WG1269575-4 WG1269575-5 QC Sample: L1935116-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.179	90		0.188	94		80-120	5		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 08/20/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06,09,12 QC Batch ID: WG1269486-1 QC Sample: L1935085-04 Client ID: HVRA-MW102-4.5						
Solids, Total	89.1	88.8	%	0		20
Moisture	10.9	11.2	%	3		20
General Chemistry - Westborough Lab Associated sample(s): 04-06 QC Batch ID: WG1269546-6 QC Sample: L1934097-04 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/kg	NC		35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935085-01A	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-02A	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260-R2(14)
L1935085-02B	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260-R2(14)
L1935085-02C	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-03A	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-04A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1935085-04B	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 04:05	NYTCL-8260HLW-R2(14)
L1935085-04C	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 17:15	NYTCL-8260HLW-R2(14)
L1935085-04D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7),MOISTURE(7)
L1935085-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935085-04F	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935085-04G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935085-04H	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935085-05A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1935085-05B	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 04:05	NYTCL-8260HLW-R2(14)
L1935085-05C	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 04:05	NYTCL-8260HLW-R2(14)
L1935085-05D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7),MOISTURE(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935085-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935085-05F	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935085-05G	Glass 250ml/8oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935085-06A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1935085-06B	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 04:05	NYTCL-8260HLW-R2(14)
L1935085-06C	Vial water preserved	A	NA		2.8	Y	Absent	07-AUG-19 04:05	NYTCL-8260HLW-R2(14)
L1935085-06D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7),MOISTURE(7)
L1935085-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935085-06F	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935085-06G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935085-06H	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935085-07A	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-08A	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-09A	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L1935085-09B	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1935085-09C	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935085-10A	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260-R2(14)
L1935085-10B	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260-R2(14)
L1935085-10C	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260-R2(14)
L1935085-10D	Amber 120ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8082-LVI(7)
L1935085-10E	Amber 120ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8082-LVI(7)
L1935085-10F	Amber 120ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8081(7)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935085
Report Date: 08/20/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935085-10G	Amber 120ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8081(7)
L1935085-10H	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-10I	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-10J	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935085-10K	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935085-10L	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935085-10M	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935085-10N	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935085-10O	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-9010(14)
L1935085-11A	Plastic 250ml unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935085-12A	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L1935085-12B	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1935085-12C	Plastic 8oz unpreserved	B	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935085-13A	Vial HCl preserved	A	NA		2.8	Y	Absent		ARCHIVE()
L1935085-13B	Vial HCl preserved	A	NA		2.8	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1935085
Project Number:	18.8090	**Report Date:**	08/20/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1935085
Project Number:	18.8090	**Report Date:**	08/20/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when using acetone as a solvent.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1935085
Project Number:	18.8090	**Report Date:**	08/20/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 1 of 2

Date Rec'd in Lab: 8/6/19

ALPHA Job #: L1935085

Client Information
Client: C.T. Male Associate
Address: 50 Century Hill Dr. Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.8090
(Use Project name as Project #)
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☑ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pest	TAL Metals	CN	PFAS, Moisture	1,4-Dioxane	Sample Specific Comments	Total Bottle
35085-01	HVRA-FTB01-190806	8/6/19	1000	Water	DK							✓			1
-02	HVRA-LTB01-190806		—	Water	DK	✓						✓			3 (2)
-03	HVRA-RB01-190806		0835	Water	~~DK~~ CB							✓			1
-04	HVRA-MW102-4.5		0945	Soil	CB	✓	✓	✓	✓	✓	✓	✓	✓		8
8/7 -06	~~HVRA-MW102-~~														
-05	HVRA-FD01-190806		—	Soil	CB	✓	✓	✓	✓	✓	✓	✓	✓		7
-06	HVRA-MW103-10.0		1145	Soil	CB	✓	✓	✓	✓	✓	✓	✓	✓		8
-07	HVRA-RB02-190806		1130	Water	CB							✓			1
-08	HVRA-RB03-190806		1250	Water	CB							✓			1
-09	HVRA-MW104-9.5		1325	Soil	CB							✓	✓		3
	Container Type *Water Samples differ*					V	A	A	A	A	A	P	A		
	Preservative					F	A	A	A	A	A	A	A		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	8/6/19-1700		8-6-19 1700
	8-6-19 18:45		8/6/19 1945
	8/6/19 23:50		8/6/19 23:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab: 8/6/19

ALPHA Job #: L1935085

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr. Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.8098
(Use Project name as Project #)
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pest.	TAL Metals	CN	PFAS, Moisture	1,4-Dioxane	Sample Specific Comments	Total Bottle
35085-10	HVRA-EB01-190806	8/6/19	1320	Water	DK	✓	✓	✓	✓	✓	✓	✓	✓	(Ziploc Bag)	15
-11	HVRA-RB04-190806	↓	1445	Water	CB							✓			1
-12	HVRA-MW103-4.0	↓	1550	Soil	CB							✓	✓		3

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	VA	A	A	A	A	A	P	A
Preservative	F	A	A	A	A	A	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
	8/6/19-1700		8-6-19 17:00
	8-6-19 18:45		8/6/19 21:30
	8/6/19 2355		8/7/19 2350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1935927
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	08/29/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1935927-01	HVRA-LTB01-190807	WATER	WAPPINGERS FALLS, NY	08/07/19 00:00	08/09/19
L1935927-02	HVRA-FTB01-190807	WATER	WAPPINGERS FALLS, NY	08/07/19 14:35	08/09/19
L1935927-03	HVRA-MAINTBLDG-190807	WATER	WAPPINGERS FALLS, NY	08/07/19 15:00	08/09/19
L1935927-04	HVRA-FD01-190807	WATER	WAPPINGERS FALLS, NY	08/07/19 00:00	08/09/19
L1935927-05	HVRA-MW100-190808	WATER	WAPPINGERS FALLS, NY	08/08/19 13:20	08/09/19
L1935927-06	HVRA-FD01-190808	WATER	WAPPINGERS FALLS, NY	08/08/19 00:00	08/09/19
L1935927-07	HVRA-EB01-190808	WATER	WAPPINGERS FALLS, NY	08/08/19 14:20	08/09/19
L1935927-08	HVRA-OF1-190808	SOIL	WAPPINGERS FALLS, NY	08/08/19 16:00	08/09/19
L1935927-09	HVRA-FD02-190808	SOIL	WAPPINGERS FALLS, NY	08/08/19 00:00	08/09/19
L1935927-10	HVRA-NW102-190809	WATER	WAPPINGERS FALLS, NY	08/09/19 08:40	08/09/19
L1935927-11	HVRA-MW104-190809	WATER	WAPPINGERS FALLS, NY	08/09/19 09:25	08/09/19
L1935927-12	HVRA-MW103-190809	WATER	WAPPINGERS FALLS, NY	08/09/19 10:00	08/09/19
L1935927-13	HVRA-MW101-190809	WATER	WAPPINGERS FALLS, NY	08/09/19 09:15	08/09/19

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

Case Narrative (continued)

Report Submission

August 29, 2019: This final report includes the results of all requested analyses.

August 20, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

The WG1273127-5 Method Blank, associated with L1935927-08 and -09, has a concentration above the reporting limit for bromomethane. Since the samples were non-detect to the RL for this target analyte, no further actions were taken. The results of the original analysis are reported.

Semivolatile Organics

The WG1271251-1 Method Blank, associated with L1935927-03 through -06, has a concentration above the reporting limit for Bis(2-ethylhexyl)phthalate. The results of the original analysis are reported and are qualified with a "B" for any associated sample concentrations that are less than 10x the blank concentration for this analyte.

Perfluorinated Alkyl Acids by Isotope Dilution

L1935927-05: The results for 8:2FTS are not reported in the original run because the quadratic fit of the curve does not allow for an estimated "E" flagged value. The sample was re-extracted on dilution outside the recommended holding time and the result within the calibration curve is reported for this compound.

L1935927-11: The sample was re-extracted on dilution outside of holding time in order to quantify the results within the calibration range. The results should be considered estimated, and are qualified with an E flag, for any compounds that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compounds that exceeded the calibration range.

L1935927-11, WG1273269-1 and WG1274408-2/-3: Extracted Internal Standard recoveries were outside the

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

Case Narrative (continued)

acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.
The WG1273269-2/-3 LCS/LCSD recoveries, associated with L1935927-08 and -09, are below the acceptance criteria for perfluorooctanesulfonamide (fosa) (51%/150%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.
The WG1273269-2/-3 LCS/LCSD RPDs, associated with L1935927-08 and -09, are above the acceptance criteria for 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts) (36%) and perfluorooctanesulfonamide (fosa) (99%).
The WG1273269-4/-5 MS/MSD RPD, associated with L1935927-08 and -09, is above the acceptance criteria for perfluorooctanesulfonamide (fosa) (49%).
The WG1274408-4 MS recovery, performed on L1935927-03, is outside the acceptance criteria for perfluorooctanesulfonamide (fosa) (180%).
The WG1274408-4/-5 MS/MSD RPD, performed on L1935927-03, is outside the acceptance criteria for perfluorooctanesulfonamide (fosa) (63%).
The WG1274408-6/-7 MS/MSD recoveries, performed on L1935927-05, are outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (449%/345%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.
The WG1277357-4 MS recovery, performed on L1935927-05, is outside the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (54%). The unacceptable percent recovery is attributed to the elevated concentrations of target compounds present in the native sample.
WG1273981-3: The continuing calibration standard had the response for 8:2FTS outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.
WG1273981-3: The continuing calibration standard had the response for M2-6:2FtS and M2-8:2FtS outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.
WG1277821-1: The continuing calibration standard had the response for M2-8:2FTS outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further

Case Narrative (continued)

action was taken.
WG1277821-2: The continuing calibration standard had the response for M2-8:2FTS outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.
WG1277821-2: The continuing calibration standard had the response for 8:2FTS outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

PCBs
L1935927-10 was extracted with the method required holding time exceeded.

Pesticides
The WG1273532-6/-7 MS/MSD recoveries, performed on L1935927-08, are outside the acceptance criteria for endrin aldehyde (0%/0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Total Metals
L1935927-08 and -09: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1271502-3/-4 MS/MSD recoveries for calcium (0%/0%), magnesium (MS at 72%) and sodium (28%/46%), performed on L1935927-03, do not apply because the sample concentration is greater than four times the spike amounts added.
The WG1271502-7 MS recovery, performed on L1935927-05, is outside the acceptance criteria for calcium (40%). A post digestion spike was performed and was within acceptance criteria.
The WG1271502-7/-8 MS/MSD recoveries for sodium (0%/20%), performed on L1935927-05, does not apply because the sample concentration is greater than four times the spike amount added.
The WG1272465-3/-4 MS/MSD recoveries for aluminum (0%/0%), calcium (0%/0%), iron (3640%/0%),

Project Name: HVRA **Lab Number:** L1935927
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Case Narrative (continued)

magnesium (0%/0%) and manganese (0%/0%), performed on L1935927-08, do not apply because the sample concentrations are greater than four times the spike amounts added.
The WG1272465-3/-4 MS/MSD recoveries, performed on L1935927-08, are outside the acceptance criteria for lead (72%/74%). A post digestion spike was performed and yielded unacceptable recoveries for lead (76%). The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.
The WG1272465-3/-4 MS/MSD RPDs for calcium (133%) and magnesium (88%), performed on L1935927-08, are above the acceptance criteria.

Cyanide, Total
The WG1271126-2/-3 LCS/LCSD recoveries (75%/70%), associated with L1935927-08 and -09, is outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 08/29/19

ORGANICS

VOLATILES

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-01 Date Collected: 08/07/19 00:00
Client ID: HVRA-LTB01-190807 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 15:13
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	1.1	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-01 Date Collected: 08/07/19 00:00

Client ID: HVRA-LTB01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.2		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20
Client ID: HVRA-MW100-190808 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 15:42
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	1.4	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20

Client ID: HVRA-MW100-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	13		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 16:10
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	1.2	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	8.6		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20
Client ID: HVRA-EB01-190808 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 16:39
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.96	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	9.1		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00
Client ID: HVRA-OF1-190808 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 01:50
Analyst: MV
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	0.66		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.75	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.3	0.27	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.2	0.63	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.2	0.49	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00

Client ID: HVRA-OF1-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.61	1
o-Xylene	ND		ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.99	1
Acetone	31		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
Methyl Acetate	ND		ug/kg	4.3	1.0	1
Cyclohexane	ND		ug/kg	11	0.59	1
1,4-Dioxane	ND		ug/kg	87	38.	1
Freon-113	ND		ug/kg	4.3	0.75	1
Methyl cyclohexane	ND		ug/kg	4.3	0.66	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	107		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 02:15
Analyst: MV
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.0	0.13	1
Dibromochloromethane	ND		ug/kg	1.0	0.14	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.28	1
Tetrachloroethene	1.3		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
Trichlorofluoromethane	ND		ug/kg	4.1	0.72	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Bromodichloromethane	ND		ug/kg	0.52	0.11	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.28	1
cis-1,3-Dichloropropene	ND		ug/kg	0.52	0.16	1
Bromoform	ND		ug/kg	4.1	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.52	0.17	1
Benzene	ND		ug/kg	0.52	0.17	1
Toluene	ND		ug/kg	1.0	0.56	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Chloromethane	ND		ug/kg	4.1	0.96	1
Bromomethane	ND		ug/kg	2.1	0.60	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
Chloroethane	ND		ug/kg	2.1	0.47	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	0.20	J	ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.58	1
o-Xylene	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Styrene	ND		ug/kg	1.0	0.20	1
Dichlorodifluoromethane	ND		ug/kg	10	0.95	1
Acetone	58		ug/kg	10	5.0	1
Carbon disulfide	ND		ug/kg	10	4.7	1
2-Butanone	ND		ug/kg	10	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	10	1.3	1
2-Hexanone	ND		ug/kg	10	1.2	1
Bromochloromethane	ND		ug/kg	2.1	0.21	1
1,2-Dibromoethane	ND		ug/kg	1.0	0.29	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.1	1.0	1
Isopropylbenzene	ND		ug/kg	1.0	0.11	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.33	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.28	1
Methyl Acetate	ND		ug/kg	4.1	0.98	1
Cyclohexane	ND		ug/kg	10	0.56	1
1,4-Dioxane	ND		ug/kg	83	36.	1
Freon-113	ND		ug/kg	4.1	0.72	1
Methyl cyclohexane	ND		ug/kg	4.1	0.62	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 17:07
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10 Date Collected: 08/09/19 08:40

Client ID: HVRA-NW102-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	18		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00
Client ID: HVRA-MW103-190809 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 17:36
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00

Client ID: HVRA-MW103-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	11		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 09:01
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,05-07,10,12 Batch: WG1272314-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 09:01
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,05-07,10,12 Batch: WG1272314-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/14/19 09:01
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,05-07,10,12 Batch: WG1272314-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 19:24
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1273127-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	2.0		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 19:24
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1273127-5					
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
1,4-Dioxane	ND		ug/kg	80	35.
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 19:24
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1273127-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 Batch: WG1272314-3 WG1272314-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	110		100		63-132	10		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	110		100		70-130	10		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	100		100		75-130	0		20
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
Bromoform	91		92		54-136	1		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	110		100		70-130	10		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	88		86		64-130	2		20
Bromomethane	69		70		39-139	1		20
Vinyl chloride	100		99		55-140	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 Batch: WG1272314-3 WG1272314-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		100		70-130	10		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	110		100		70-130	10		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	86		84		36-147	2		20
Acetone	120		110		58-148	9		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	120		120		63-138	0		20
4-Methyl-2-pentanone	100		100		59-130	0		20
2-Hexanone	110		110		57-130	0		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	100		110		41-144	10		20
Isopropylbenzene	100		100		70-130	0		20
1,2,3-Trichlorobenzene	110		110		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 Batch: WG1272314-3 WG1272314-4								
1,2,4-Trichlorobenzene	100		110		70-130	10		20
Methyl Acetate	120		120		70-130	0		20
Cyclohexane	110		110		70-130	0		20
1,4-Dioxane	142		136		56-162	4		20
Freon-113	110		100		70-130	10		20
Methyl cyclohexane	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	99		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 Batch: WG1273127-3 WG1273127-4								
Methylene chloride	97		97		70-130	0		30
1,1-Dichloroethane	104		102		70-130	2		30
Chloroform	101		100		70-130	1		30
Carbon tetrachloride	105		105		70-130	0		30
1,2-Dichloropropane	100		102		70-130	2		30
Dibromochloromethane	98		97		70-130	1		30
1,1,2-Trichloroethane	95		96		70-130	1		30
Tetrachloroethene	95		96		70-130	1		30
Chlorobenzene	92		90		70-130	2		30
Trichlorofluoromethane	102		100		70-139	2		30
1,2-Dichloroethane	104		103		70-130	1		30
1,1,1-Trichloroethane	103		103		70-130	0		30
Bromodichloromethane	100		101		70-130	1		30
trans-1,3-Dichloropropene	96		95		70-130	1		30
cis-1,3-Dichloropropene	103		104		70-130	1		30
Bromoform	90		91		70-130	1		30
1,1,2,2-Tetrachloroethane	88		87		70-130	1		30
Benzene	100		100		70-130	0		30
Toluene	94		94		70-130	0		30
Ethylbenzene	96		96		70-130	0		30
Chloromethane	109		109		52-130	0		30
Bromomethane	**153**	Q	143		57-147	7		30
Vinyl chloride	102		102		67-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 Batch: WG1273127-3 WG1273127-4								
Chloroethane	104		101		50-151	3		30
1,1-Dichloroethene	102		101		65-135	1		30
trans-1,2-Dichloroethene	103		102		70-130	1		30
Trichloroethene	98		99		70-130	1		30
1,2-Dichlorobenzene	89		90		70-130	1		30
1,3-Dichlorobenzene	89		89		70-130	0		30
1,4-Dichlorobenzene	88		87		70-130	1		30
Methyl tert butyl ether	101		99		66-130	2		30
p/m-Xylene	97		96		70-130	1		30
o-Xylene	95		96		70-130	1		30
cis-1,2-Dichloroethene	102		102		70-130	0		30
Styrene	98		98		70-130	0		30
Dichlorodifluoromethane	109		108		30-146	1		30
Acetone	109		113		54-140	4		30
Carbon disulfide	101		100		59-130	1		30
2-Butanone	95		85		70-130	11		30
4-Methyl-2-pentanone	97		94		70-130	3		30
2-Hexanone	94		92		70-130	2		30
Bromochloromethane	107		108		70-130	1		30
1,2-Dibromoethane	100		101		70-130	1		30
1,2-Dibromo-3-chloropropane	98		94		68-130	4		30
Isopropylbenzene	89		90		70-130	1		30
1,2,3-Trichlorobenzene	87		85		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 Batch: WG1273127-3 WG1273127-4								
1,2,4-Trichlorobenzene	87		84		70-130	4		30
Methyl Acetate	109		112		51-146	3		30
Cyclohexane	105		107		59-142	2		30
1,4-Dioxane	115		103		65-136	11		30
Freon-113	106		105		50-139	1		30
Methyl cyclohexane	99		99		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
Toluene-d8	96		97		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	102		101		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 QC Batch ID: WG1272314-6 WG1272314-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Methylene chloride	ND	10	12	120		12	120		70-130	0		20
1,1-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
Chloroform	ND	10	12	120		12	120		70-130	0		20
Carbon tetrachloride	ND	10	11	110		12	120		63-132	9		20
1,2-Dichloropropane	ND	10	12	120		12	120		70-130	0		20
Dibromochloromethane	ND	10	11	110		12	120		63-130	9		20
1,1,2-Trichloroethane	ND	10	12	120		12	120		70-130	0		20
Tetrachloroethene	ND	10	10	100		10	100		70-130	0		20
Chlorobenzene	ND	10	11	110		11	110		75-130	0		20
Trichlorofluoromethane	ND	10	11	110		12	120		62-150	9		20
1,2-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
1,1,1-Trichloroethane	ND	10	11	110		12	120		67-130	9		20
Bromodichloromethane	ND	10	12	120		12	120		67-130	0		20
trans-1,3-Dichloropropene	ND	10	11	110		11	110		70-130	0		20
cis-1,3-Dichloropropene	ND	10	11	110		12	120		70-130	9		20
Bromoform	ND	10	9.9	99		10	100		54-136	1		20
1,1,2,2-Tetrachloroethane	ND	10	12	120		12	120		67-130	0		20
Benzene	ND	10	12	120		12	120		70-130	0		20
Toluene	ND	10	11	110		11	110		70-130	0		20
Ethylbenzene	ND	10	10	100		11	110		70-130	10		20
Chloromethane	1.4J	10	15	**150**	Q	16	**160**	Q	64-130	6		20
Bromomethane	ND	10	6.8	68		7.9	79		39-139	15		20
Vinyl chloride	ND	10	12	120		12	120		55-140	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 QC Batch ID: WG1272314-6 WG1272314-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Chloroethane	ND	10	12	120		12	120		55-138	0		20
1,1-Dichloroethene	ND	10	12	120		12	120		61-145	0		20
trans-1,2-Dichloroethene	ND	10	11	110		12	120		70-130	9		20
Trichloroethene	ND	10	11	110		12	120		70-130	9		20
1,2-Dichlorobenzene	ND	10	11	110		11	110		70-130	0		20
1,3-Dichlorobenzene	ND	10	10	100		11	110		70-130	10		20
1,4-Dichlorobenzene	ND	10	10	100		11	110		70-130	10		20
Methyl tert butyl ether	ND	10	11	110		12	120		63-130	9		20
p/m-Xylene	ND	20	21	105		22	110		70-130	5		20
o-Xylene	ND	20	22	110		22	110		70-130	0		20
cis-1,2-Dichloroethene	ND	10	12	120		12	120		70-130	0		20
Styrene	ND	20	20	100		22	110		70-130	10		20
Dichlorodifluoromethane	ND	10	11	110		11	110		36-147	0		20
Acetone	13	10	25	120		23	100		58-148	8		20
Carbon disulfide	ND	10	11	110		12	120		51-130	9		20
2-Butanone	ND	10	13	130		14	**140**	Q	63-138	7		20
4-Methyl-2-pentanone	ND	10	12	120		12	120		59-130	0		20
2-Hexanone	ND	10	13	130		14	**140**	Q	57-130	7		20
Bromochloromethane	ND	10	12	120		12	120		70-130	0		20
1,2-Dibromoethane	ND	10	11	110		12	120		70-130	9		20
1,2-Dibromo-3-chloropropane	ND	10	11	110		12	120		41-144	9		20
Isopropylbenzene	ND	10	10	100		11	110		70-130	10		20
1,2,3-Trichlorobenzene	ND	10	12	120		13	130		70-130	8		20

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 QC Batch ID: WG1272314-6 WG1272314-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
1,2,4-Trichlorobenzene	ND	10	11	110		12	120		70-130	9		20
Methyl Acetate	ND	10	12	120		13	130		70-130	8		20
Cyclohexane	ND	10	11	110		11	110		70-130	0		20
1,4-Dioxane	ND	500	830	**166**	Q	980	**196**	Q	56-162	17		20
Freon-113	ND	10	10	100		11	110		70-130	10		20
Methyl cyclohexane	ND	10	9.9J	99		10	100		70-130	1		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		103		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	99		100		70-130
Toluene-d8	98		98		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Methylene chloride	ND	109	110	101		110	98		70-130	5		30
1,1-Dichloroethane	ND	109	120	108		110	104		70-130	6		30
Chloroform	ND	109	110	101		100	97		70-130	7		30
Carbon tetrachloride	ND	109	130	115		120	112		70-130	5		30
1,2-Dichloropropane	ND	109	110	104		100	98		70-130	8		30
Dibromochloromethane	ND	109	96	88		88	82		70-130	9		30
1,1,2-Trichloroethane	ND	109	93	85		86	81		70-130	7		30
Tetrachloroethene	0.66	109	99	90		93	87		70-130	5		30
Chlorobenzene	ND	109	89	81		80	75		70-130	11		30
Trichlorofluoromethane	ND	109	140	128		130	124		70-139	6		30
1,2-Dichloroethane	ND	109	110	98		100	94		70-130	7		30
1,1,1-Trichloroethane	ND	109	120	113		120	108		70-130	7		30
Bromodichloromethane	ND	109	110	99		99	93		70-130	9		30
trans-1,3-Dichloropropene	ND	109	96	88		90	84		70-130	7		30
cis-1,3-Dichloropropene	ND	109	110	103		100	97		70-130	8		30
Bromoform	ND	109	87	79		76	71		70-130	13		30
1,1,2,2-Tetrachloroethane	ND	109	77	70		68	**64**	Q	70-130	12		30
Benzene	ND	109	110	103		110	98		70-130	6		30
Toluene	ND	109	100	91		92	86		70-130	8		30
Ethylbenzene	ND	109	99	91		91	85		70-130	9		30
Chloromethane	ND	109	120	111		120	110		52-130	3		30
Bromomethane	ND	109	120	106		130	118		57-147	8		30
Vinyl chloride	ND	109	130	117		130	119		67-130	1		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Chloroethane	ND	109	150	138		140	130		50-151	8		30
1,1-Dichloroethene	ND	109	120	112		120	112		65-135	2		30
trans-1,2-Dichloroethene	ND	109	110	104		110	102		70-130	4		30
Trichloroethene	ND	109	110	100		100	95		70-130	8		30
1,2-Dichlorobenzene	ND	109	71	**66**	Q	59	**55**	Q	70-130	20		30
1,3-Dichlorobenzene	ND	109	73	**67**	Q	62	**58**	Q	70-130	17		30
1,4-Dichlorobenzene	ND	109	69	**64**	Q	58	**54**	Q	70-130	18		30
Methyl tert butyl ether	ND	109	110	99		100	97		66-130	5		30
p/m-Xylene	ND	218	200	90		180	83		70-130	10		30
o-Xylene	ND	218	190	89		170	82		70-130	11		30
cis-1,2-Dichloroethene	ND	109	110	103		110	99		70-130	6		30
Styrene	ND	218	190	87		170	78		70-130	13		30
Dichlorodifluoromethane	ND	109	130	121		130	121		30-146	2		30
Acetone	31	109	150	111		130	91		54-140	17		30
Carbon disulfide	ND	109	120	108		110	105		59-130	5		30
2-Butanone	ND	109	99	91		93	88		70-130	6		30
4-Methyl-2-pentanone	ND	109	97	89		90	85		70-130	7		30
2-Hexanone	ND	109	85	78		80	75		70-130	7		30
Bromochloromethane	ND	109	110	101		100	97		70-130	7		30
1,2-Dibromoethane	ND	109	95	87		87	82		70-130	8		30
1,2-Dibromo-3-chloropropane	ND	109	79	73		68	**64**	Q	68-130	16		30
Isopropylbenzene	ND	109	95	87		87	82		70-130	8		30
1,2,3-Trichlorobenzene	ND	109	50	**45**	Q	36	**34**	Q	70-130	**31**	Q	30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
1,2,4-Trichlorobenzene	ND	109	51	**47**	Q	40	**37**	Q	70-130	25		30
Methyl Acetate	ND	109	210	**188**	Q	200	**188**	Q	51-146	2		30
Cyclohexane	ND	109	140	124		130	121		59-142	5		30
1,4-Dioxane	ND	5450	6100	112		6200	117		65-136	2		30
Freon-113	ND	109	130	118		130	117		50-139	3		30
Methyl cyclohexane	ND	109	120	110		120	111		70-130	2		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	103		102		70-130
Toluene-d8	94		94		70-130

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-01
Client ID: HVRA-LTB01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/20/19 20:28
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/16/19 09:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	0.234	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.97	0.323	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	0.370	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	0.232	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.97	0.677	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	0.307	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.97	0.496	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.299	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.638	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.964	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.571	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.366	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.322	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1
PFOA/PFOS, Total	ND		ng/l	1.97	0.232	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-01 Date Collected: 08/07/19 00:00

Client ID: HVRA-LTB01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	68		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	81		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	133		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-02
Client ID: HVRA-FTB01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 14:35
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 05:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.99	0.406	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.99	0.394	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.99	0.237	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.99	0.327	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.99	0.224	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.99	0.374	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.99	0.235	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.99	1.33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.99	0.685	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.99	0.311	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.99	0.502	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.99	0.303	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.99	1.21	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.99	0.645	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.99	0.259	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.99	0.976	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.99	0.578	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.99	0.801	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.99	0.370	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.99	0.326	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.99	0.247	1
PFOA/PFOS, Total	ND		ng/l	1.99	0.235	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-02 Date Collected: 08/07/19 14:35

Client ID: HVRA-FTB01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	48		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	43		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	54		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	110		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/15/19 18:07
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.6	JB	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03 Date Collected: 08/07/19 15:00

Client ID: HVRA-MAINTBLDG-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		21-120
Phenol-d6	67		10-120
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	107		15-120
2,4,6-Tribromophenol	76		10-120
4-Terphenyl-d14	114		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 15:54
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03 Date Collected: 08/07/19 15:00

Client ID: HVRA-MAINTBLDG-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		21-120
Phenol-d6	63		10-120
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	100		15-120
2,4,6-Tribromophenol	**122**	Q	10-120
4-Terphenyl-d14	110		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 12:01
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	254.		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 05:42
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.34		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	1.03	J	ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	0.830	J	ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	1.18	J	ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03 Date Collected: 08/07/19 15:00

Client ID: HVRA-MAINTBLDG-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	38		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	41		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	116		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/15/19 19:23
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04 Date Collected: 08/07/19 00:00

Client ID: HVRA-FD01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	43		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	31		10-120
4-Terphenyl-d14	88		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 16:10
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04 Date Collected: 08/07/19 00:00

Client ID: HVRA-FD01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		21-120
Phenol-d6	49		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	88		10-120
4-Terphenyl-d14	90		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 14:20
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	284.		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	42		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/20/19 20:45
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/16/19 09:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.45		ng/l	1.94	0.397	1
Perfluoropentanoic Acid (PFPeA)	1.13	J	ng/l	1.94	0.385	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.94	0.232	1
Perfluorohexanoic Acid (PFHxA)	0.895	J	ng/l	1.94	0.319	1
Perfluoroheptanoic Acid (PFHpA)	0.377	J	ng/l	1.94	0.219	1
Perfluorohexanesulfonic Acid (PFHxS)	1.10	J	ng/l	1.94	0.366	1
Perfluorooctanoic Acid (PFOA)	0.506	J	ng/l	1.94	0.230	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.94	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.94	0.669	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.304	1
Perfluorooctanesulfonic Acid (PFOS)	0.521	J	ng/l	1.94	0.490	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.296	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.94	1.18	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.630	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.253	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.94	0.953	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.94	0.564	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.362	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.318	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.94	0.241	1
PFOA/PFOS, Total	1.03	J	ng/l	1.94	0.230	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04 Date Collected: 08/07/19 00:00

Client ID: HVRA-FD01-190807 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	66		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	10		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	129		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	111		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/15/19 18:32
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20

Client ID: HVRA-MW100-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	46		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	57		10-120
4-Terphenyl-d14	87		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 16:27
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20

Client ID: HVRA-MW100-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	88		10-120
4-Terphenyl-d14	86		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 13:11
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	41		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 06:33
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	75.9		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	258		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	15.2		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	222		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	102		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	368		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	47.1		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.0		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.56		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	8.67		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	595		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	28.9		ng/l	1.80	0.274	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.628	J	ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	2.09		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	2.64		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	23.8		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	0.487	J	ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	642		ng/l	1.80	0.213	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20

Client ID: HVRA-MW100-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	118		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 RE
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/28/19 20:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	331		ng/l	10.0	6.06	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		7-170

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/15/19 19:49
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	83		15-120
2,4,6-Tribromophenol	57		10-120
4-Terphenyl-d14	91		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 16:44
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	83		15-120
2,4,6-Tribromophenol	96		10-120
4-Terphenyl-d14	93		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 15:05
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 07:24
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	77.0		ng/l	1.92	0.391	1
Perfluoropentanoic Acid (PFPeA)	260		ng/l	1.92	0.379	1
Perfluorobutanesulfonic Acid (PFBS)	15.5		ng/l	1.92	0.228	1
Perfluorohexanoic Acid (PFHxA)	229		ng/l	1.92	0.314	1
Perfluoroheptanoic Acid (PFHpA)	101		ng/l	1.92	0.216	1
Perfluorohexanesulfonic Acid (PFHxS)	370		ng/l	1.92	0.360	1
Perfluorooctanoic Acid (PFOA)	48.1		ng/l	1.92	0.226	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	48.2		ng/l	1.92	1.28	1
Perfluoroheptanesulfonic Acid (PFHpS)	9.04		ng/l	1.92	0.659	1
Perfluorononanoic Acid (PFNA)	8.28		ng/l	1.92	0.299	1
Perfluorooctanesulfonic Acid (PFOS)	699		ng/l	1.92	0.483	1
Perfluorodecanoic Acid (PFDA)	32.9		ng/l	1.92	0.291	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	344		ng/l	1.92	1.16	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.92	0.621	1
Perfluoroundecanoic Acid (PFUnA)	2.73		ng/l	1.92	0.249	1
Perfluorodecanesulfonic Acid (PFDS)	3.97		ng/l	1.92	0.939	1
Perfluorooctanesulfonamide (FOSA)	20.8		ng/l	1.92	0.556	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.92	0.770	1
Perfluorododecanoic Acid (PFDoA)	0.456	J	ng/l	1.92	0.356	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.92	0.313	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.92	0.238	1
PFOA/PFOS, Total	747		ng/l	1.92	0.226	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	92		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/16/19 22:39
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.7	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	52		10-120
4-Terphenyl-d14	84		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 15:28
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	163	36.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 14:45
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.08	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	53		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	77		10-120
4-Terphenyl-d14	101		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 07:41
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.375	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.89	0.311	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.652	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.477	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.928	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.549	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.761	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.235	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	45		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	33		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	101		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/18/19 19:27
Analyst: RC
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	27.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	52.	1
2,4-Dinitrotoluene	ND		ug/kg	200	39.	1
2,6-Dinitrotoluene	ND		ug/kg	200	34.	1
Fluoranthene	550		ug/kg	120	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	21.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	30.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	34.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	20.	1
Hexachlorobutadiene	ND		ug/kg	200	29.	1
Hexachlorocyclopentadiene	ND		ug/kg	560	180	1
Hexachloroethane	ND		ug/kg	160	32.	1
Isophorone	ND		ug/kg	180	26.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	180	29.	1
NDPA/DPA	ND		ug/kg	160	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	30.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	68.	1
Butyl benzyl phthalate	ND		ug/kg	200	50.	1
Di-n-butylphthalate	ND		ug/kg	200	37.	1
Di-n-octylphthalate	ND		ug/kg	200	67.	1
Diethyl phthalate	ND		ug/kg	200	18.	1
Dimethyl phthalate	ND		ug/kg	200	41.	1
Benzo(a)anthracene	200		ug/kg	120	22.	1
Benzo(a)pyrene	200		ug/kg	160	48.	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00

Client ID: HVRA-OF1-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	320		ug/kg	120	33.	1
Benzo(k)fluoranthene	83	J	ug/kg	120	31.	1
Chrysene	240		ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	160	30.	1
Anthracene	ND		ug/kg	120	38.	1
Benzo(ghi)perylene	160		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	260		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	29	J	ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	170		ug/kg	160	27.	1
Pyrene	430		ug/kg	120	20.	1
Biphenyl	ND		ug/kg	450	46.	1
4-Chloroaniline	ND		ug/kg	200	36.	1
2-Nitroaniline	ND		ug/kg	200	38.	1
3-Nitroaniline	ND		ug/kg	200	37.	1
4-Nitroaniline	ND		ug/kg	200	81.	1
Dibenzofuran	ND		ug/kg	200	19.	1
2-Methylnaphthalene	ND		ug/kg	240	24.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	20.	1
Acetophenone	ND		ug/kg	200	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	37.	1
p-Chloro-m-cresol	ND		ug/kg	200	29.	1
2-Chlorophenol	ND		ug/kg	200	23.	1
2,4-Dichlorophenol	ND		ug/kg	180	32.	1
2,4-Dimethylphenol	ND		ug/kg	200	65.	1
2-Nitrophenol	ND		ug/kg	420	74.	1
4-Nitrophenol	ND		ug/kg	280	80.	1
2,4-Dinitrophenol	ND		ug/kg	940	92.	1
4,6-Dinitro-o-cresol	ND		ug/kg	510	94.	1
Pentachlorophenol	ND		ug/kg	160	43.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
2,4,5-Trichlorophenol	ND		ug/kg	200	38.	1
Carbazole	49	J	ug/kg	200	19.	1
Atrazine	ND		ug/kg	160	69.	1
Benzaldehyde	ND		ug/kg	260	53.	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00

Client ID: HVRA-OF1-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	200	60.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	200	40.	1
1,4-Dioxane	ND		ug/kg	30	9.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	86		25-120
Phenol-d6	88		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	80		10-136
4-Terphenyl-d14	54		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 02:59
Analyst: AJ
Percent Solids: 84%

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.03	0.023	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.03	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.03	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.069	J	ug/kg	1.03	0.054	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.03	0.047	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.03	0.062	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.03	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.03	0.185	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.03	0.141	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.03	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	0.356	J	ug/kg	1.03	0.134	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.03	0.069	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.03	0.296	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.03	0.208	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.03	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.03	0.158	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.03	0.101	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.03	0.087	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.03	0.072	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.03	0.211	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.03	0.056	1
PFOA/PFOS, Total	0.356	J	ug/kg	1.03	0.043	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00

Client ID: HVRA-OF1-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	85		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	4		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	118		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	105		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/18/19 19:53
Analyst: RC
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	120	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	51.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	33.	1
Fluoranthene	900		ug/kg	120	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	33.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	550	170	1
Hexachloroethane	ND		ug/kg	150	31.	1
Isophorone	ND		ug/kg	170	25.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	30.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	66.	1
Butyl benzyl phthalate	ND		ug/kg	190	48.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	65.	1
Diethyl phthalate	ND		ug/kg	190	18.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	310		ug/kg	120	22.	1
Benzo(a)pyrene	300		ug/kg	150	47.	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	440		ug/kg	120	32.	1
Benzo(k)fluoranthene	160		ug/kg	120	31.	1
Chrysene	380		ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	69	J	ug/kg	120	37.	1
Benzo(ghi)perylene	230		ug/kg	150	22.	1
Fluorene	28	J	ug/kg	190	19.	1
Phenanthrene	470		ug/kg	120	23.	1
Dibenzo(a,h)anthracene	46	J	ug/kg	120	22.	1
Indeno(1,2,3-cd)pyrene	240		ug/kg	150	27.	1
Pyrene	690		ug/kg	120	19.	1
Biphenyl	ND		ug/kg	440	44.	1
4-Chloroaniline	ND		ug/kg	190	35.	1
2-Nitroaniline	ND		ug/kg	190	37.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	79.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	23.	1
2,4-Dichlorophenol	ND		ug/kg	170	31.	1
2,4-Dimethylphenol	ND		ug/kg	190	63.	1
2-Nitrophenol	ND		ug/kg	410	72.	1
4-Nitrophenol	ND		ug/kg	270	78.	1
2,4-Dinitrophenol	ND		ug/kg	920	89.	1
4,6-Dinitro-o-cresol	ND		ug/kg	500	92.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	30.	1
2,4,5-Trichlorophenol	ND		ug/kg	190	37.	1
Carbazole	67	J	ug/kg	190	19.	1
Atrazine	ND		ug/kg	150	67.	1
Benzaldehyde	ND		ug/kg	250	52.	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	190	58.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	190	39.	1
1,4-Dioxane	ND		ug/kg	29	8.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	97		25-120
Phenol-d6	104		10-120
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	60		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 03:50
Analyst: AJ
Percent Solids: 86%

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ug/kg	1.05	0.024	1
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.05	0.048	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.05	0.041	1
Perfluorohexanoic Acid (PFHxA)	0.061	J	ug/kg	1.05	0.055	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.05	0.047	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.05	0.064	1
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.05	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.05	0.188	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.05	0.143	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.05	0.079	1
Perfluorooctanesulfonic Acid (PFOS)	0.320	J	ug/kg	1.05	0.136	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.05	0.070	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.05	0.301	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.05	0.211	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.05	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.05	0.160	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.05	0.103	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.05	0.089	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.05	0.073	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.05	0.214	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.05	0.057	1
PFOA/PFOS, Total	0.320	J	ug/kg	1.05	0.044	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	105		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	107		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	115		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	113		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	110		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/16/19 23:05
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 01:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10 Date Collected: 08/09/19 08:40

Client ID: HVRA-NW102-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		21-120
Phenol-d6	57		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	66		10-120
4-Terphenyl-d14	88		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 15:50
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 15:01
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.02	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.04	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.03	J	ug/l	0.10	0.01	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.03	J	ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	0.02	J	ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.03	J	ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10 Date Collected: 08/09/19 08:40

Client ID: HVRA-NW102-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		21-120
Phenol-d6	63		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	96		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 07:58
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.72	J	ng/l	1.95	0.398	1
Perfluoropentanoic Acid (PFPeA)	1.38	J	ng/l	1.95	0.387	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.95	0.232	1
Perfluorohexanoic Acid (PFHxA)	1.41	J	ng/l	1.95	0.320	1
Perfluoroheptanoic Acid (PFHpA)	0.762	J	ng/l	1.95	0.220	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.95	0.367	1
Perfluorooctanoic Acid (PFOA)	1.26	J	ng/l	1.95	0.230	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.95	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.95	0.672	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.95	0.305	1
Perfluorooctanesulfonic Acid (PFOS)	1.17	J	ng/l	1.95	0.492	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.95	0.297	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.95	1.18	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.95	0.633	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.95	0.254	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.95	0.957	1
Perfluorooctanesulfonamide (FOSA)	0.684	J	ng/l	1.95	0.566	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.95	0.785	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.95	0.363	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.95	0.320	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.95	0.242	1
PFOA/PFOS, Total	2.43	J	ng/l	1.95	0.230	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10 Date Collected: 08/09/19 08:40

Client ID: HVRA-NW102-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	49		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	28		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	65		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-11
Client ID: HVRA-MW104-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:25
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 17:40
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-11
Client ID: HVRA-MW104-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:25
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 08:15
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	113		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	205		ng/l	1.89	0.375	1
Perfluorobutanesulfonic Acid (PFBS)	151		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	710		ng/l	1.89	0.311	1
Perfluoroheptanoic Acid (PFHpA)	92.6		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	3030	E	ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	122		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	5.68		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	47.7		ng/l	1.89	0.652	1
Perfluorononanoic Acid (PFNA)	22.6		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	1720	E	ng/l	1.89	0.477	1
Perfluorodecanoic Acid (PFDA)	0.530	J	ng/l	1.89	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.928	1
Perfluorooctanesulfonamide (FOSA)	16.8		ng/l	1.89	0.549	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.761	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.235	1
PFOA/PFOS, Total	1840		ng/l	1.89	0.223	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-11 Date Collected: 08/09/19 09:25

Client ID: HVRA-MW104-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**190**	Q	31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	118		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	40		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	60		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	37		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**21**	Q	33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-11 RE
Client ID: HVRA-MW104-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:25
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/28/19 21:02
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	5420		ng/l	20.0	3.76	1
Perfluorooctanesulfonic Acid (PFOS)	2280		ng/l	20.0	5.04	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	79		47-153
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		42-146

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/16/19 23:30
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 01:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00

Client ID: HVRA-MW103-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Carbazole	ND		ug/l	2.0	0.49	1
Atrazine	ND		ug/l	10	0.76	1
Benzaldehyde	ND		ug/l	5.0	0.53	1
Caprolactam	ND		ug/l	10	3.3	1
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		21-120
Phenol-d6	56		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	87		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	90		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 18:02
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	156	35.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 15:17
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.06	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	0.02	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.06	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.02	J	ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.05	J	ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.02	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.05	J	ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00

Client ID: HVRA-MW103-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		21-120
Phenol-d6	63		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	92		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	99		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 08:32
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.39	J	ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	1.15	J	ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	0.819	J	ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	1.26	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	0.819	J	ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	4.74		ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	2.10		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	1.32	J	ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	3.42	J	ng/l	1.84	0.218	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00

Client ID: HVRA-MW103-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	41		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	56		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	30		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	97		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	111		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 18:23
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/22/19 08:49
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	71.1		ng/l	1.81	0.370	1
Perfluoropentanoic Acid (PFPeA)	130		ng/l	1.81	0.359	1
Perfluorobutanesulfonic Acid (PFBS)	11.1		ng/l	1.81	0.216	1
Perfluorohexanoic Acid (PFHxA)	74.8		ng/l	1.81	0.297	1
Perfluoroheptanoic Acid (PFHpA)	16.0		ng/l	1.81	0.204	1
Perfluorohexanesulfonic Acid (PFHxS)	99.8		ng/l	1.81	0.340	1
Perfluorooctanoic Acid (PFOA)	11.3		ng/l	1.81	0.214	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	24.1		ng/l	1.81	1.21	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.90		ng/l	1.81	0.623	1
Perfluorononanoic Acid (PFNA)	3.05		ng/l	1.81	0.283	1
Perfluorooctanesulfonic Acid (PFOS)	68.1		ng/l	1.81	0.456	1
Perfluorodecanoic Acid (PFDA)	0.536	J	ng/l	1.81	0.275	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	2.72		ng/l	1.81	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	0.587	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	0.236	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	0.888	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	0.525	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	0.728	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	0.337	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	0.296	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	0.225	1
PFOA/PFOS, Total	79.4		ng/l	1.81	0.214	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13 Date Collected: 08/09/19 09:15

Client ID: HVRA-MW101-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	123		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	76		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	36		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	102		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/14/19 01:58
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1271251-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	3.5		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/14/19 01:58
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1271251-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		21-120
Phenol-d6	48		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	56		10-120
4-Terphenyl-d14	85		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 12:52
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03-06 Batch: WG1271253-1					
Acenaphthene	0.03	J	ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	0.03	J	ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	0.06	J	ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02
Benzo(b)fluoranthene	0.04	J	ug/l	0.10	0.01
Benzo(k)fluoranthene	0.03	J	ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	0.03	J	ug/l	0.10	0.01
Anthracene	0.04	J	ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.05	J	ug/l	0.10	0.01
Phenanthrene	0.06	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	0.03	J	ug/l	0.10	0.02
2-Methylnaphthalene	0.06	J	ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 12:52
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03-06 Batch: WG1271253-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		21-120
Phenol-d6	48		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	93		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/14/19 10:58
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 14:47

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 03-07,10-13 Batch: WG1271770-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/16/19 04:17
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07,10,12 Batch: WG1272405-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/16/19 04:17
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07,10,12 Batch: WG1272405-1					
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Carbazole	ND		ug/l	2.0	0.49
Atrazine	ND		ug/l	10	0.76
Benzaldehyde	ND		ug/l	5.0	0.53
Caprolactam	ND		ug/l	10	3.3
2,3,4,6-Tetrachlorophenol	ND		ug/l	5.0	0.84

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	51		10-120
4-Terphenyl-d14	78		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 11:03
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 07,10,12 Batch: WG1272407-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 11:03
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 07,10,12 Batch: WG1272407-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		21-120
Phenol-d6	46		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	102		41-149

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 19:58
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/16/19 09:48

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,04 Batch: WG1273199-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.336	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 19:58
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/16/19 09:48

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,04 Batch: WG1273199-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	119		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	56		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	77		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/20/19 23:52
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08-09 Batch: WG1273269-1					
Perfluorobutanoic Acid (PFBA)	0.091	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/20/19 23:52
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08-09 Batch: WG1273269-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	106		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	127		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	118		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	5		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**138**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	105		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	118		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/18/19 11:03
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1273531-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	100	19.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	170	16.
3,3'-Dichlorobenzidine	ND		ug/kg	170	44.
2,4-Dinitrotoluene	ND		ug/kg	170	33.
2,6-Dinitrotoluene	ND		ug/kg	170	28.
Fluoranthene	ND		ug/kg	100	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.
4-Bromophenyl phenyl ether	ND		ug/kg	170	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.
Hexachlorobutadiene	ND		ug/kg	170	24.
Hexachlorocyclopentadiene	ND		ug/kg	480	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	22.
Naphthalene	ND		ug/kg	170	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	170	26.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	57.
Butyl benzyl phthalate	ND		ug/kg	170	42.
Di-n-butylphthalate	ND		ug/kg	170	32.
Di-n-octylphthalate	ND		ug/kg	170	56.
Diethyl phthalate	ND		ug/kg	170	15.
Dimethyl phthalate	ND		ug/kg	170	35.
Benzo(a)anthracene	ND		ug/kg	100	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	100	28.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/18/19 11:03
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1273531-1					
Benzo(k)fluoranthene	ND		ug/kg	100	26.
Chrysene	ND		ug/kg	100	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	100	32.
Benzo(ghi)perylene	ND		ug/kg	130	20.
Fluorene	ND		ug/kg	170	16.
Phenanthrene	ND		ug/kg	100	20.
Dibenzo(a,h)anthracene	ND		ug/kg	100	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	100	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	170	30.
2-Nitroaniline	ND		ug/kg	170	32.
3-Nitroaniline	ND		ug/kg	170	31.
4-Nitroaniline	ND		ug/kg	170	69.
Dibenzofuran	ND		ug/kg	170	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	17.
Acetophenone	ND		ug/kg	170	20.
2,4,6-Trichlorophenol	ND		ug/kg	100	32.
p-Chloro-m-cresol	ND		ug/kg	170	25.
2-Chlorophenol	ND		ug/kg	170	20.
2,4-Dichlorophenol	ND		ug/kg	150	27.
2,4-Dimethylphenol	ND		ug/kg	170	55.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	68.
2,4-Dinitrophenol	ND		ug/kg	800	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	80.
Pentachlorophenol	ND		ug/kg	130	36.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/18/19 11:03
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 08/17/19 01:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1273531-1					
Phenol	ND		ug/kg	170	25.
2-Methylphenol	ND		ug/kg	170	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	170	32.
Carbazole	ND		ug/kg	170	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	45.
Caprolactam	ND		ug/kg	170	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	170	34.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	98		25-120
Phenol-d6	105		10-120
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	99		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/22/19 02:53
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-03,05-07,10-13 Batch: WG1274408-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/22/19 02:53
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/20/19 08:34

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-03,05-07,10-13 Batch: WG1274408-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	48		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	47		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	91		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	120		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/28/19 19:06
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 05,11 Batch: WG1277357-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.400	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/28/19 19:06
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 05,11 Batch: WG1277357-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	39		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	45		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1271251-2 WG1271251-3								
Bis(2-chloroethyl)ether	67		65		40-140	3		30
3,3'-Dichlorobenzidine	65		85		40-140	27		30
2,4-Dinitrotoluene	64		78		48-143	20		30
2,6-Dinitrotoluene	72		86		40-140	18		30
4-Chlorophenyl phenyl ether	65		77		40-140	17		30
4-Bromophenyl phenyl ether	65		79		40-140	19		30
Bis(2-chloroisopropyl)ether	79		78		40-140	1		30
Bis(2-chloroethoxy)methane	72		75		40-140	4		30
Hexachlorocyclopentadiene	67		63		40-140	6		30
Isophorone	76		80		40-140	5		30
Nitrobenzene	73		74		40-140	1		30
NDPA/DPA	69		83		40-140	18		30
n-Nitrosodi-n-propylamine	78		79		29-132	1		30
Bis(2-ethylhexyl)phthalate	73		90		40-140	21		30
Butyl benzyl phthalate	81		100		40-140	21		30
Di-n-butylphthalate	76		94		40-140	21		30
Di-n-octylphthalate	77		94		40-140	20		30
Diethyl phthalate	72		86		40-140	18		30
Dimethyl phthalate	78		93		40-140	18		30
Biphenyl	64		69		40-140	8		30
4-Chloroaniline	72		80		40-140	11		30
2-Nitroaniline	73		84		52-143	14		30
3-Nitroaniline	63		75		25-145	17		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1271251-2 WG1271251-3								
4-Nitroaniline	64		83		51-143	26		30
Dibenzofuran	64		71		40-140	10		30
1,2,4,5-Tetrachlorobenzene	64		64		2-134	0		30
Acetophenone	62		63		39-129	2		30
2,4,6-Trichlorophenol	69		70		30-130	1		30
p-Chloro-m-cresol	78		90		23-97	14		30
2-Chlorophenol	69		69		27-123	0		30
2,4-Dichlorophenol	69		73		30-130	6		30
2,4-Dimethylphenol	61		55		30-130	10		30
2-Nitrophenol	72		75		30-130	4		30
4-Nitrophenol	52		61		10-80	16		30
2,4-Dinitrophenol	56		42		20-130	29		30
4,6-Dinitro-o-cresol	71		67		20-164	6		30
Phenol	56		60		12-110	7		30
3-Methylphenol/4-Methylphenol	66		68		30-130	3		30
2,4,5-Trichlorophenol	74		86		30-130	15		30
Carbazole	77		94		55-144	20		30
Atrazine	98		126		40-140	25		30
Benzaldehyde	66		64		40-140	3		30
Caprolactam	47		60		10-130	24		30
2,3,4,6-Tetrachlorophenol	68		61		40-140	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1271251-2 WG1271251-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	56		57		21-120
Phenol-d6	48		51		10-120
Nitrobenzene-d5	71		68		23-120
2-Fluorobiphenyl	70		75		15-120
2,4,6-Tribromophenol	60		66		10-120
4-Terphenyl-d14	75		91		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 Batch: WG1271253-2 WG1271253-3								
Acenaphthene	97		79		40-140	20		40
2-Chloronaphthalene	97		78		40-140	22		40
Fluoranthene	100		92		40-140	8		40
Hexachlorobutadiene	84		68		40-140	21		40
Naphthalene	92		73		40-140	23		40
Benzo(a)anthracene	101		92		40-140	9		40
Benzo(a)pyrene	106		97		40-140	9		40
Benzo(b)fluoranthene	102		94		40-140	8		40
Benzo(k)fluoranthene	107		97		40-140	10		40
Chrysene	96		88		40-140	9		40
Acenaphthylene	101		83		40-140	20		40
Anthracene	102		92		40-140	10		40
Benzo(ghi)perylene	101		94		40-140	7		40
Fluorene	100		83		40-140	19		40
Phenanthrene	96		86		40-140	11		40
Dibenzo(a,h)anthracene	108		102		40-140	6		40
Indeno(1,2,3-cd)pyrene	106		96		40-140	10		40
Pyrene	99		92		40-140	7		40
2-Methylnaphthalene	99		79		40-140	22		40
Pentachlorophenol	80		100		40-140	22		40
Hexachlorobenzene	104		88		40-140	17		40
Hexachloroethane	90		72		40-140	22		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 Batch: WG1271253-2 WG1271253-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	71		58		21-120
Phenol-d6	59		47		10-120
Nitrobenzene-d5	96		76		23-120
2-Fluorobiphenyl	89		71		15-120
2,4,6-Tribromophenol	97		97		10-120
4-Terphenyl-d14	99		93		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 03-07,10-13		Batch: WG1271770-2		WG1271770-3			
1,4-Dioxane	120		118		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	38		47		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,10,12 Batch: WG1272405-2 WG1272405-3								
Bis(2-chloroethyl)ether	68		58		40-140	16		30
3,3'-Dichlorobenzidine	63		51		40-140	21		30
2,4-Dinitrotoluene	69		56		48-143	21		30
2,6-Dinitrotoluene	78		65		40-140	18		30
4-Chlorophenyl phenyl ether	67		56		40-140	18		30
4-Bromophenyl phenyl ether	70		57		40-140	20		30
Bis(2-chloroisopropyl)ether	79		70		40-140	12		30
Bis(2-chloroethoxy)methane	73		62		40-140	16		30
Hexachlorocyclopentadiene	64		53		40-140	19		30
Isophorone	80		68		40-140	16		30
Nitrobenzene	74		64		40-140	14		30
NDPA/DPA	72		58		40-140	22		30
n-Nitrosodi-n-propylamine	80		70		29-132	13		30
Bis(2-ethylhexyl)phthalate	66		57		40-140	15		30
Butyl benzyl phthalate	81		67		40-140	19		30
Di-n-butylphthalate	74		61		40-140	19		30
Di-n-octylphthalate	70		58		40-140	19		30
Diethyl phthalate	75		61		40-140	21		30
Dimethyl phthalate	85		71		40-140	18		30
Biphenyl	67		55		40-140	20		30
4-Chloroaniline	68		57		40-140	18		30
2-Nitroaniline	77		65		52-143	17		30
3-Nitroaniline	63		49		25-145	25		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,10,12 Batch: WG1272405-2 WG1272405-3								
4-Nitroaniline	70		57		51-143	20		30
Dibenzofuran	66		54		40-140	20		30
1,2,4,5-Tetrachlorobenzene	65		53		2-134	20		30
Acetophenone	67		56		39-129	18		30
2,4,6-Trichlorophenol	74		60		30-130	21		30
p-Chloro-m-cresol	83		68		23-97	20		30
2-Chlorophenol	70		61		27-123	14		30
2,4-Dichlorophenol	73		62		30-130	16		30
2,4-Dimethylphenol	68		56		30-130	19		30
2-Nitrophenol	74		62		30-130	18		30
4-Nitrophenol	57		50		10-80	13		30
2,4-Dinitrophenol	66		58		20-130	13		30
4,6-Dinitro-o-cresol	82		69		20-164	17		30
Phenol	57		46		12-110	21		30
3-Methylphenol/4-Methylphenol	69		56		30-130	21		30
2,4,5-Trichlorophenol	81		70		30-130	15		30
Carbazole	82		65		55-144	23		30
Atrazine	111		89		40-140	22		30
Benzaldehyde	67		58		40-140	14		30
Caprolactam	47		41		10-130	14		30
2,3,4,6-Tetrachlorophenol	71		57		40-140	22		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,10,12 Batch: WG1272405-2 WG1272405-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		49		21-120
Phenol-d6	49		41		10-120
Nitrobenzene-d5	72		61		23-120
2-Fluorobiphenyl	70		58		15-120
2,4,6-Tribromophenol	65		53		10-120
4-Terphenyl-d14	82		65		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 07,10,12 Batch: WG1272407-2 WG1272407-3								
Acenaphthene	83		88		40-140	6		40
2-Chloronaphthalene	80		84		40-140	5		40
Fluoranthene	98		99		40-140	1		40
Hexachlorobutadiene	71		77		40-140	8		40
Naphthalene	77		82		40-140	6		40
Benzo(a)anthracene	95		94		40-140	1		40
Benzo(a)pyrene	102		103		40-140	1		40
Benzo(b)fluoranthene	104		106		40-140	2		40
Benzo(k)fluoranthene	101		98		40-140	3		40
Chrysene	96		98		40-140	2		40
Acenaphthylene	82		85		40-140	4		40
Anthracene	90		96		40-140	6		40
Benzo(ghi)perylene	100		101		40-140	1		40
Fluorene	86		91		40-140	6		40
Phenanthrene	89		92		40-140	3		40
Dibenzo(a,h)anthracene	103		104		40-140	1		40
Indeno(1,2,3-cd)pyrene	99		98		40-140	1		40
Pyrene	98		99		40-140	1		40
2-Methylnaphthalene	78		83		40-140	6		40
Pentachlorophenol	66		67		40-140	2		40
Hexachlorobenzene	82		87		40-140	6		40
Hexachloroethane	68		76		40-140	11		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 07,10,12 Batch: WG1272407-2 WG1272407-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		63		21-120
Phenol-d6	48		52		10-120
Nitrobenzene-d5	73		78		23-120
2-Fluorobiphenyl	71		76		15-120
2,4,6-Tribromophenol	74		70		10-120
4-Terphenyl-d14	91		91		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
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Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,04 Batch: WG1273199-2 WG1273199-3								
Perfluorobutanoic Acid (PFBA)	105		102		67-148	3		30
Perfluoropentanoic Acid (PFPeA)	98		95		63-161	3		30
Perfluorobutanesulfonic Acid (PFBS)	93		89		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	103		102		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	104		101		58-159	3		30
Perfluorohexanesulfonic Acid (PFHxS)	116		109		69-177	6		30
Perfluorooctanoic Acid (PFOA)	103		99		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	121		100		49-187	19		30
Perfluoroheptanesulfonic Acid (PFHpS)	102		98		61-179	4		30
Perfluorononanoic Acid (PFNA)	103		100		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	104		101		52-151	3		30
Perfluorodecanoic Acid (PFDA)	103		102		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	83		101		56-173	20		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100		112		60-166	11		30
Perfluoroundecanoic Acid (PFUnA)	106		103		60-153	3		30
Perfluorodecanesulfonic Acid (PFDS)	95		105		38-156	10		30
Perfluorooctanesulfonamide (FOSA)	86		92		46-170	7		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	80		104		45-170	26		30
Perfluorododecanoic Acid (PFDoA)	106		104		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	113		111		48-158	2		30
Perfluorotetradecanoic Acid (PFTA)	109		110		59-182	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

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Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,04 Batch: WG1273199-2 WG1273199-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		108		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		131		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		107		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		103		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		103		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	79		98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		103		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	53		72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		100		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		94		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		80		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		92		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		35		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		86		33-143

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08-09 Batch: WG1273269-2 WG1273269-3								
Perfluorobutanoic Acid (PFBA)	106		106		71-135	0		30
Perfluoropentanoic Acid (PFPeA)	105		105		69-132	0		30
Perfluorobutanesulfonic Acid (PFBS)	105		106		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	104		108		70-132	4		30
Perfluoroheptanoic Acid (PFHpA)	109		110		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	108		110		67-130	2		30
Perfluorooctanoic Acid (PFOA)	112		110		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	88		127		64-140	**36**	Q	30
Perfluoroheptanesulfonic Acid (PFHpS)	125		118		70-132	6		30
Perfluorononanoic Acid (PFNA)	95		107		72-129	12		30
Perfluorooctanesulfonic Acid (PFOS)	125		113		68-136	10		30
Perfluorodecanoic Acid (PFDA)	101		105		69-133	4		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		102		65-137	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	116		111		63-144	4		30
Perfluoroundecanoic Acid (PFUnA)	112		107		64-136	5		30
Perfluorodecanesulfonic Acid (PFDS)	122		116		59-134	5		30
Perfluorooctanesulfonamide (FOSA)	**51**	Q	**150**	Q	67-137	**99**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	103		110		61-139	7		30
Perfluorododecanoic Acid (PFDoA)	93		90		69-135	3		30
Perfluorotridecanoic Acid (PFTrDA)	98		94		66-139	4		30
Perfluorotetradecanoic Acid (PFTA)	94		93		69-133	1		30

Lab Control Sample Analysis

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08-09 Batch: WG1273269-2 WG1273269-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		87		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		99		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	126		100		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		90		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		97		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	129		102		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		92		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	127		71		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		98		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	117		100		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		97		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	106		105		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	99		110		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	7		5		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		105		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		103		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	109		111		26-160

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1273531-2 WG1273531-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Acenaphthene	91		84		31-137	8		50
Hexachlorobenzene	92		85		40-140	8		50
Bis(2-chloroethyl)ether	100		91		40-140	9		50
2-Chloronaphthalene	91		84		40-140	8		50
3,3'-Dichlorobenzidine	84		76		40-140	10		50
2,4-Dinitrotoluene	106		100		40-132	6		50
2,6-Dinitrotoluene	104		96		40-140	8		50
Fluoranthene	94		88		40-140	7		50
4-Chlorophenyl phenyl ether	87		82		40-140	6		50
4-Bromophenyl phenyl ether	92		86		40-140	7		50
Bis(2-chloroisopropyl)ether	78		72		40-140	8		50
Bis(2-chloroethoxy)methane	99		91		40-117	8		50
Hexachlorobutadiene	93		86		40-140	8		50
Hexachlorocyclopentadiene	94		86		40-140	9		50
Hexachloroethane	95		85		40-140	11		50
Isophorone	105		96		40-140	9		50
Naphthalene	96		88		40-140	9		50
Nitrobenzene	102		92		40-140	10		50
NDPA/DPA	92		88		36-157	4		50
n-Nitrosodi-n-propylamine	105		98		32-121	7		50
Bis(2-ethylhexyl)phthalate	103		96		40-140	7		50
Butyl benzyl phthalate	108		100		40-140	8		50
Di-n-butylphthalate	110		101		40-140	9		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1273531-2 WG1273531-3								
Di-n-octylphthalate	116		106		40-140	9		50
Diethyl phthalate	95		88		40-140	8		50
Dimethyl phthalate	93		85		40-140	9		50
Benzo(a)anthracene	97		89		40-140	9		50
Benzo(a)pyrene	91		82		40-140	10		50
Benzo(b)fluoranthene	99		81		40-140	20		50
Benzo(k)fluoranthene	86		88		40-140	2		50
Chrysene	90		84		40-140	7		50
Acenaphthylene	94		87		40-140	8		50
Anthracene	97		90		40-140	7		50
Benzo(ghi)perylene	97		90		40-140	7		50
Fluorene	94		89		40-140	5		50
Phenanthrene	91		84		40-140	8		50
Dibenzo(a,h)anthracene	101		93		40-140	8		50
Indeno(1,2,3-cd)pyrene	98		98		40-140	0		50
Pyrene	92		84		35-142	9		50
Biphenyl	97		91		37-127	6		50
4-Chloroaniline	59		55		40-140	7		50
2-Nitroaniline	104		98		47-134	6		50
3-Nitroaniline	78		73		26-129	7		50
4-Nitroaniline	89		81		41-125	9		50
Dibenzofuran	94		88		40-140	7		50
2-Methylnaphthalene	97		88		40-140	10		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1273531-2 WG1273531-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,2,4,5-Tetrachlorobenzene	96		90		40-117	6		50
Acetophenone	107		97		14-144	10		50
2,4,6-Trichlorophenol	101		95		30-130	6		50
p-Chloro-m-cresol	**108**	Q	97		26-103	11		50
2-Chlorophenol	**108**	Q	98		25-102	10		50
2,4-Dichlorophenol	103		93		30-130	10		50
2,4-Dimethylphenol	104		96		30-130	8		50
2-Nitrophenol	111		103		30-130	7		50
4-Nitrophenol	109		100		11-114	9		50
2,4-Dinitrophenol	92		86		4-130	7		50
4,6-Dinitro-o-cresol	117		107		10-130	9		50
Pentachlorophenol	92		86		17-109	7		50
Phenol	**97**	Q	88		26-90	10		50
2-Methylphenol	110		100		30-130.	10		50
3-Methylphenol/4-Methylphenol	104		95		30-130	9		50
2,4,5-Trichlorophenol	103		94		30-130	9		50
Carbazole	98		90		54-128	9		50
Atrazine	103		97		40-140	6		50
Benzaldehyde	107		86		40-140	22		50
Caprolactam	98		91		15-130	7		50
2,3,4,6-Tetrachlorophenol	97		89		40-140	9		50
1,4-Dioxane	75		71		40-140	5		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1273531-2 WG1273531-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	102		92		25-120
Phenol-d6	106		96		10-120
Nitrobenzene-d5	103		96		23-120
2-Fluorobiphenyl	88		80		30-120
2,4,6-Tribromophenol	91		87		10-136
4-Terphenyl-d14	90		84		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 Batch: WG1274408-2 WG1274408-3								
Perfluorobutanoic Acid (PFBA)	113		112		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	112		111		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	113		113		65-157	0		30
Perfluorohexanoic Acid (PFHxA)	116		116		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	115		116		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	112		116		69-177	4		30
Perfluorooctanoic Acid (PFOA)	115		121		63-159	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	108		119		49-187	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	151		136		61-179	10		30
Perfluorononanoic Acid (PFNA)	123		114		68-171	8		30
Perfluorooctanesulfonic Acid (PFOS)	146		136		52-151	7		30
Perfluorodecanoic Acid (PFDA)	119		105		63-171	13		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91		122		56-173	29		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	127		99		60-166	25		30
Perfluoroundecanoic Acid (PFUnA)	112		111		60-153	1		30
Perfluorodecanesulfonic Acid (PFDS)	148		146		38-156	1		30
Perfluorooctanesulfonamide (FOSA)	109		103		46-170	6		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	101		90		45-170	12		30
Perfluorododecanoic Acid (PFDoA)	100		107		67-153	7		30
Perfluorotridecanoic Acid (PFTrDA)	110		112		48-158	2		30
Perfluorotetradecanoic Acid (PFTA)	116		107		59-182	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 Batch: WG1274408-2 WG1274408-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		108		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98		88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		60		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		96		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	64		49		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	139		143		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	141		131		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		44		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**161**	Q	**184**	Q	23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	112		109		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 05,11 Batch: WG1277357-2 WG1277357-3								
Perfluorobutanoic Acid (PFBA)	104		105		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	96		95		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	86		87		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	104		104		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	102		104		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	116		114		69-177	2		30
Perfluorooctanoic Acid (PFOA)	105		100		63-159	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	94		106		49-187	12		30
Perfluoroheptanesulfonic Acid (PFHpS)	90		96		61-179	6		30
Perfluorononanoic Acid (PFNA)	100		97		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	107		107		52-151	0		30
Perfluorodecanoic Acid (PFDA)	101		109		63-171	8		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	94		93		56-173	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		99		60-166	7		30
Perfluoroundecanoic Acid (PFUnA)	99		99		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	107		100		38-156	7		30
Perfluorooctanesulfonamide (FOSA)	83		87		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		90		45-170	4		30
Perfluorododecanoic Acid (PFDoA)	109		107		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	102		101		48-158	1		30
Perfluorotetradecanoic Acid (PFTA)	112		113		59-182	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 05,11 Batch: WG1277357-2 WG1277357-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		84		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	41		39		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		83		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	47		46		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		71		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		67		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		65		33-143

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-4 WG1271251-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Bis(2-chloroethyl)ether	ND	18.2	15	83		15	83		40-140	0		30
3,3'-Dichlorobenzidine	ND	18.2	15	83		15	83		40-140	0		30
2,4-Dinitrotoluene	ND	18.2	17	94		17	94		48-143	0		30
2,6-Dinitrotoluene	ND	18.2	20	110		20	110		40-140	0		30
4-Chlorophenyl phenyl ether	ND	18.2	17	94		16	88		40-140	6		30
4-Bromophenyl phenyl ether	ND	18.2	17	94		17	94		40-140	0		30
Bis(2-chloroisopropyl)ether	ND	18.2	18	99		19	100		40-140	5		30
Bis(2-chloroethoxy)methane	ND	18.2	17	94		17	94		40-140	0		30
Hexachlorocyclopentadiene	ND	18.2	16.J	88		17.J	94		40-140	6		30
Isophorone	ND	18.2	19	100		19	100		40-140	0		30
Nitrobenzene	ND	18.2	16	88		16	88		40-140	0		30
NDPA/DPA	ND	18.2	18	99		17	94		40-140	6		30
n-Nitrosodi-n-propylamine	ND	18.2	19	100		19	100		29-132	0		30
Bis(2-ethylhexyl)phthalate	1.6JB	18.2	22	120		20	110		40-140	10		30
Butyl benzyl phthalate	ND	18.2	24	130		22	120		40-140	9		30
Di-n-butylphthalate	ND	18.2	22	120		20	110		40-140	10		30
Di-n-octylphthalate	ND	18.2	24	130		23	130		40-140	4		30
Diethyl phthalate	ND	18.2	19	100		18	99		40-140	5		30
Dimethyl phthalate	ND	18.2	21	120		21	120		40-140	0		30
Biphenyl	ND	18.2	16	88		16	88		40-140	0		30
4-Chloroaniline	ND	18.2	18	99		17	94		40-140	6		30
2-Nitroaniline	ND	18.2	20	110		20	110		52-143	0		30
3-Nitroaniline	ND	18.2	16	88		16	88		25-145	0		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-4 WG1271251-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
4-Nitroaniline	ND	18.2	17	94		16	88		51-143	6		30
Dibenzofuran	ND	18.2	16	88		15	83		40-140	6		30
1,2,4,5-Tetrachlorobenzene	ND	18.2	16	88		16	88		2-134	0		30
Acetophenone	ND	18.2	14	77		15	83		39-129	7		30
2,4,6-Trichlorophenol	ND	18.2	18	99		18	99		30-130	0		30
p-Chloro-m-cresol	ND	18.2	20	**110**	Q	20	**110**	Q	23-97	0		30
2-Chlorophenol	ND	18.2	16	88		16	88		27-123	0		30
2,4-Dichlorophenol	ND	18.2	17	94		17	94		30-130	0		30
2,4-Dimethylphenol	ND	18.2	8.4	46		8.2	45		30-130	2		30
2-Nitrophenol	ND	18.2	18	99		18	99		30-130	0		30
4-Nitrophenol	ND	18.2	16	**88**	Q	16	**88**	Q	10-80	0		30
2,4-Dinitrophenol	ND	18.2	17.J	94		16.J	88		20-130	6		30
4,6-Dinitro-o-cresol	ND	18.2	20	110		19	100		20-164	5		30
Phenol	ND	18.2	14	77		13	72		12-110	7		30
3-Methylphenol/4-Methylphenol	ND	18.2	17	94		16	88		30-130	6		30
2,4,5-Trichlorophenol	ND	18.2	21	120		20	110		30-130	5		30
Carbazole	ND	18.2	20	110		19	100		55-144	5		30
Atrazine	ND	18.2	27	**150**	Q	25	140		40-140	8		30
Benzaldehyde	ND	18.2	15	83		15	83		40-140	0		30
Caprolactam	ND	18.2	14	77		14	77		10-130	0		30
2,3,4,6-Tetrachlorophenol	ND	18.2	18	99		17	94		40-140	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-4 WG1271251-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
2,4,6-Tribromophenol	81		75		10-120
2-Fluorobiphenyl	97		97		15-120
2-Fluorophenol	71		69		21-120
4-Terphenyl-d14	109		105		41-149
Nitrobenzene-d5	89		89		23-120
Phenol-d6	68		64		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-6 WG1271251-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Bis(2-chloroethyl)ether	ND	18.2	13	72		12	66		40-140	8		30
3,3'-Dichlorobenzidine	ND	18.2	2.9J	**16**	Q	3.2J	**18**	Q	40-140	10		30
2,4-Dinitrotoluene	ND	18.2	15	83		14	77		48-143	7		30
2,6-Dinitrotoluene	ND	18.2	17	94		16	88		40-140	6		30
4-Chlorophenyl phenyl ether	ND	18.2	15	83		14	77		40-140	7		30
4-Bromophenyl phenyl ether	ND	18.2	15	83		14	77		40-140	7		30
Bis(2-chloroisopropyl)ether	ND	18.2	16	88		15	83		40-140	6		30
Bis(2-chloroethoxy)methane	ND	18.2	15	83		14	77		40-140	7		30
Hexachlorocyclopentadiene	ND	18.2	14.J	77		14.J	77		40-140	0		30
Isophorone	ND	18.2	16	88		15	83		40-140	6		30
Nitrobenzene	ND	18.2	15	83		14	77		40-140	7		30
NDPA/DPA	ND	18.2	14	77		13	72		40-140	7		30
n-Nitrosodi-n-propylamine	ND	18.2	16	88		16	88		29-132	0		30
Bis(2-ethylhexyl)phthalate	ND	18.2	18	99		17	94		40-140	6		30
Butyl benzyl phthalate	ND	18.2	20	110		18	99		40-140	11		30
Di-n-butylphthalate	ND	18.2	18	99		17	94		40-140	6		30
Di-n-octylphthalate	ND	18.2	21	120		20	110		40-140	5		30
Diethyl phthalate	ND	18.2	16	88		15	83		40-140	6		30
Dimethyl phthalate	ND	18.2	18	99		17	94		40-140	6		30
Biphenyl	ND	18.2	14	77		14	77		40-140	0		30
4-Chloroaniline	ND	18.2	7.0	**39**	Q	8.0	44		40-140	13		30
2-Nitroaniline	ND	18.2	17	94		16	88		52-143	6		30
3-Nitroaniline	ND	18.2	9.1	50		8.6	47		25-145	6		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-6 WG1271251-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
4-Nitroaniline	ND	18.2	11	61		11	61		51-143	0		30
Dibenzofuran	ND	18.2	14	77		13	72		40-140	7		30
1,2,4,5-Tetrachlorobenzene	ND	18.2	14	77		13	72		2-134	7		30
Acetophenone	ND	18.2	12	66		12	66		39-129	0		30
2,4,6-Trichlorophenol	ND	18.2	15	83		14	77		30-130	7		30
p-Chloro-m-cresol	ND	18.2	18	**99**	Q	16	88		23-97	12		30
2-Chlorophenol	ND	18.2	14	77		13	72		27-123	7		30
2,4-Dichlorophenol	ND	18.2	14	77		14	77		30-130	0		30
2,4-Dimethylphenol	ND	18.2	3.7J	**20**	Q	3.8J	**21**	Q	30-130	3		30
2-Nitrophenol	ND	18.2	15	83		14	77		30-130	7		30
4-Nitrophenol	ND	18.2	14	77		17	**94**	Q	10-80	19		30
2,4-Dinitrophenol	ND	18.2	16.J	88		16.J	88		20-130	0		30
4,6-Dinitro-o-cresol	ND	18.2	17	94		16	88		20-164	6		30
Phenol	ND	18.2	11	61		11	61		12-110	0		30
3-Methylphenol/4-Methylphenol	ND	18.2	13	72		12	66		30-130	8		30
2,4,5-Trichlorophenol	ND	18.2	18	99		16	88		30-130	12		30
Carbazole	ND	18.2	17	94		16	88		55-144	6		30
Atrazine	ND	18.2	23	130		22	120		40-140	4		30
Benzaldehyde	ND	18.2	13	72		12	66		40-140	8		30
Caprolactam	ND	18.2	11	61		12	66		10-130	9		30
2,3,4,6-Tetrachlorophenol	ND	18.2	15	83		14	77		40-140	7		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-6 WG1271251-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
2,4,6-Tribromophenol	63		60		10-120
2-Fluorobiphenyl	87		81		15-120
2-Fluorophenol	59		59		21-120
4-Terphenyl-d14	93		87		41-149
Nitrobenzene-d5	76		75		23-120
Phenol-d6	54		53		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271253-4 WG1271253-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Acenaphthene	ND	18.2	17	94		18	99		40-140	6		40
2-Chloronaphthalene	ND	18.2	17	94		18	99		40-140	6		40
Fluoranthene	ND	18.2	18	99		18	99		40-140	0		40
Hexachlorobutadiene	ND	18.2	15	83		15	83		40-140	0		40
Naphthalene	ND	18.2	16	88		16	88		40-140	0		40
Benzo(a)anthracene	ND	18.2	18	99		18	99		40-140	0		40
Benzo(a)pyrene	ND	18.2	19	100		19	100		40-140	0		40
Benzo(b)fluoranthene	ND	18.2	18	99		18	99		40-140	0		40
Benzo(k)fluoranthene	ND	18.2	19	100		19	100		40-140	0		40
Chrysene	ND	18.2	17	94		17	94		40-140	0		40
Acenaphthylene	ND	18.2	18	99		19	100		40-140	5		40
Anthracene	ND	18.2	18	99		19	100		40-140	5		40
Benzo(ghi)perylene	ND	18.2	18	99		18	99		40-140	0		40
Fluorene	ND	18.2	18	99		18	99		40-140	0		40
Phenanthrene	ND	18.2	17	94		17	94		40-140	0		40
Dibenzo(a,h)anthracene	ND	18.2	19	100		20	110		40-140	5		40
Indeno(1,2,3-cd)pyrene	ND	18.2	19	100		19	100		40-140	0		40
Pyrene	ND	18.2	17	94		18	99		40-140	6		40
2-Methylnaphthalene	ND	18.2	17	94		18	99		40-140	6		40
Pentachlorophenol	ND	18.2	18	99		19	100		40-140	5		40
Hexachlorobenzene	ND	18.2	19	100		19	100		40-140	0		40
Hexachloroethane	ND	18.2	16	88		16	88		40-140	0		40

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271253-4 WG1271253-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	114		115		10-120
2-Fluorobiphenyl	92		94		15-120
2-Fluorophenol	77		77		21-120
4-Terphenyl-d14	101		102		41-149
Nitrobenzene-d5	98		101		23-120
Phenol-d6	66		64		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271253-6 WG1271253-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Acenaphthene	ND	18.2	15	83		14	77		40-140	7		40
2-Chloronaphthalene	ND	18.2	15	83		14	77		40-140	7		40
Fluoranthene	ND	18.2	15	83		14	77		40-140	7		40
Hexachlorobutadiene	ND	18.2	12	66		12	66		40-140	0		40
Naphthalene	ND	18.2	14	77		13	72		40-140	7		40
Benzo(a)anthracene	ND	18.2	15	83		15	83		40-140	0		40
Benzo(a)pyrene	ND	18.2	16	88		16	88		40-140	0		40
Benzo(b)fluoranthene	ND	18.2	16	88		15	83		40-140	6		40
Benzo(k)fluoranthene	ND	18.2	16	88		16	88		40-140	0		40
Chrysene	ND	18.2	14	77		14	77		40-140	0		40
Acenaphthylene	ND	18.2	16	88		15	83		40-140	6		40
Anthracene	ND	18.2	16	88		15	83		40-140	6		40
Benzo(ghi)perylene	ND	18.2	15	83		14	77		40-140	7		40
Fluorene	ND	18.2	15	83		15	83		40-140	0		40
Phenanthrene	0.03J	18.2	15	83		14	77		40-140	7		40
Dibenzo(a,h)anthracene	ND	18.2	16	88		16	88		40-140	0		40
Indeno(1,2,3-cd)pyrene	ND	18.2	16	88		16	88		40-140	0		40
Pyrene	ND	18.2	15	83		14	77		40-140	7		40
2-Methylnaphthalene	ND	18.2	15	83		14	77		40-140	7		40
Pentachlorophenol	ND	18.2	18	99		17	94		40-140	6		40
Hexachlorobenzene	ND	18.2	16	88		15	83		40-140	6		40
Hexachloroethane	ND	18.2	14	77		13	72		40-140	7		40

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271253-6 WG1271253-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	93		91		10-120
2-Fluorobiphenyl	79		77		15-120
2-Fluorophenol	64		64		21-120
4-Terphenyl-d14	85		83		41-149
Nitrobenzene-d5	85		84		23-120
Phenol-d6	54		54		10-120

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 03-07,10-13 QC Batch ID: WG1271770-4 WG1271770-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
1,4-Dioxane	254	5000	6160	118		6220	119		40-140	1		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		39		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 03-07,10-13 QC Batch ID: WG1271770-6 WG1271770-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
1,4-Dioxane	ND	5000	5830	117		5760	115		40-140	1		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		38		15-110

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1273269-4 WG1273269-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Perfluorobutanoic Acid (PFBA)	ND	5.6	5.97	107		6.03	106		71-135	1		30
Perfluoropentanoic Acid (PFPeA)	ND	5.6	6.01	107		6.08	107		69-132	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.96	5.31	107		5.41	107		72-128	2		30
Perfluorohexanoic Acid (PFHxA)	0.069J	5.6	6.02	108		6.14	108		70-132	2		30
Perfluoroheptanoic Acid (PFHpA)	ND	5.6	6.44	115		6.48	114		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	5.1	5.60	110		6.10	118		67-130	9		30
Perfluorooctanoic Acid (PFOA)	ND	5.6	5.94	106		5.92	104		69-133	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	5.32	6.60	124		6.06	112		64-140	9		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	5.32	6.08	114		6.80	126		70-132	11		30
Perfluorononanoic Acid (PFNA)	ND	5.6	6.11	109		6.15	108		72-129	1		30
Perfluorooctanesulfonic Acid (PFOS)	0.356J	5.18	6.20	120		6.67	127		68-136	7		30
Perfluorodecanoic Acid (PFDA)	ND	5.6	5.98	107		5.49	97		69-133	9		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	5.37	6.11	114		6.50	119		65-137	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	5.6	5.21	93		5.08	89		63-144	3		30
Perfluoroundecanoic Acid (PFUnA)	ND	5.6	6.58	118		6.06	107		64-136	8		30
Perfluorodecanesulfonic Acid (PFDS)	ND	5.4	6.19	115		6.77	123		59-134	9		30
Perfluorooctanesulfonamide (FOSA)	ND	5.6	7.05	126		4.26	75		67-137	**49**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	5.6	6.28	112		6.11	107		61-139	3		30
Perfluorododecanoic Acid (PFDoA)	ND	5.6	5.38	96		5.60	98		69-135	4		30
Perfluorotridecanoic Acid (PFTrDA)	ND	5.6	5.91	106		6.50	114		66-139	10		30
Perfluorotetradecanoic Acid (PFTA)	ND	5.6	5.99	107		6.12	108		69-133	2		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1273269-4 WG1273269-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89		83		25-186
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		96		32-182
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		94		42-136
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	114		115		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104		112		64-158
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	100		109		65-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		96		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		101		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		107		63-166
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	101		103		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	111		112		26-160
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		97		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		108		65-182
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		4		1-125
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		106		65-151
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		100		62-152
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		97		61-154
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		110		70-151

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Acenaphthene	ND	1560	1300	83		1300	83		31-137	0		50
Hexachlorobenzene	ND	1560	1300	83		1300	83		40-140	0		50
Bis(2-chloroethyl)ether	ND	1560	1500	96		1400	89		40-140	7		50
2-Chloronaphthalene	ND	1560	1300	83		1200	77		40-140	8		50
3,3'-Dichlorobenzidine	ND	1560	980	63		1200	77		40-140	20		50
2,4-Dinitrotoluene	ND	1560	1500	96		1500	96		40-132	0		50
2,6-Dinitrotoluene	ND	1560	1500	96		1400	89		40-140	7		50
Fluoranthene	550	1560	2000	93		2200	110		40-140	10		50
4-Chlorophenyl phenyl ether	ND	1560	1200	77		1200	77		40-140	0		50
4-Bromophenyl phenyl ether	ND	1560	1300	83		1300	83		40-140	0		50
Bis(2-chloroisopropyl)ether	ND	1560	1200	77		1100	70		40-140	9		50
Bis(2-chloroethoxy)methane	ND	1560	1500	96		1400	89		40-117	7		50
Hexachlorobutadiene	ND	1560	1300	83		1300	83		40-140	0		50
Hexachlorocyclopentadiene	ND	1560	650	42		280J	**18**	Q	40-140	**80**	Q	50
Hexachloroethane	ND	1560	1400	89		1200	77		40-140	15		50
Isophorone	ND	1560	1600	100		1600	100		40-140	0		50
Naphthalene	ND	1560	1400	89		1400	89		40-140	0		50
Nitrobenzene	ND	1560	1600	100		1500	96		40-140	6		50
NDPA/DPA	ND	1560	1300	83		1300	83		36-157	0		50
n-Nitrosodi-n-propylamine	ND	1560	1600	100		1500	96		32-121	6		50
Bis(2-ethylhexyl)phthalate	ND	1560	1400	89		1500	96		40-140	7		50
Butyl benzyl phthalate	ND	1560	1500	96		1500	96		40-140	0		50
Di-n-butylphthalate	ND	1560	1500	96		1500	96		40-140	0		50

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Di-n-octylphthalate	ND	1560	1600	100		1600	100		40-140	0		50
Diethyl phthalate	ND	1560	1300	83		1400	89		40-140	7		50
Dimethyl phthalate	ND	1560	1300	83		1300	83		40-140	0		50
Benzo(a)anthracene	200	1560	1600	89		1600	89		40-140	0		50
Benzo(a)pyrene	200	1560	1400	77		1500	83		40-140	7		50
Benzo(b)fluoranthene	320	1560	1600	82		1800	95		40-140	12		50
Benzo(k)fluoranthene	83J	1560	1300	83		1300	83		40-140	0		50
Chrysene	240	1560	1500	80		1500	81		40-140	0		50
Acenaphthylene	ND	1560	1300	83		1300	83		40-140	0		50
Anthracene	ND	1560	1400	89		1400	89		40-140	0		50
Benzo(ghi)perylene	160	1560	1400	89		1500	96		40-140	7		50
Fluorene	ND	1560	1300	83		1400	89		40-140	7		50
Phenanthrene	260	1560	1600	86		1700	92		40-140	6		50
Dibenzo(a,h)anthracene	29J	1560	1400	89		1400	89		40-140	0		50
Indeno(1,2,3-cd)pyrene	170	1560	1600	91		1600	91		40-140	0		50
Pyrene	430	1560	1800	87		1900	94		35-142	5		50
Biphenyl	ND	1560	1400	89		1300	83		37-127	7		50
4-Chloroaniline	ND	1560	890	57		990	63		40-140	11		50
2-Nitroaniline	ND	1560	1600	100		1600	100		47-134	0		50
3-Nitroaniline	ND	1560	1200	77		1200	77		26-129	0		50
4-Nitroaniline	ND	1560	1200	77		1300	83		41-125	8		50
Dibenzofuran	ND	1560	1400	89		1400	89		40-140	0		50
2-Methylnaphthalene	ND	1560	1400	89		1300	83		40-140	7		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
1,2,4,5-Tetrachlorobenzene	ND	1560	1400	89		1300	83		40-117	7		50
Acetophenone	ND	1560	1600	100		1500	96		14-144	6		50
2,4,6-Trichlorophenol	ND	1560	1500	96		1400	89		30-130	7		50
p-Chloro-m-cresol	ND	1560	1500	96		1600	100		26-103	6		50
2-Chlorophenol	ND	1560	1600	100		1600	100		25-102	0		50
2,4-Dichlorophenol	ND	1560	1600	100		1500	96		30-130	6		50
2,4-Dimethylphenol	ND	1560	1600	100		1500	96		30-130	6		50
2-Nitrophenol	ND	1560	1700	110		1600	100		30-130	6		50
4-Nitrophenol	ND	1560	1400	89		1600	100		11-114	13		50
2,4-Dinitrophenol	ND	1560	370J	24		360J	23		4-130	3		50
4,6-Dinitro-o-cresol	ND	1560	1100	70		780	50		10-130	34		50
Pentachlorophenol	ND	1560	1400	89		1400	89		17-109	0		50
Phenol	ND	1560	1600	**100**	Q	1400	89		26-90	13		50
2-Methylphenol	ND	1560	1700	110		1600	100		30-130.	6		50
3-Methylphenol/4-Methylphenol	ND	1560	1600	100		1500	96		30-130	6		50
2,4,5-Trichlorophenol	ND	1560	1500	96		1500	96		30-130	0		50
Carbazole	49J	1560	1400	89		1500	96		54-128	7		50
Atrazine	ND	1560	1500	96		1500	96		40-140	0		50
Benzaldehyde	ND	1560	1700	110		1600	100		40-140	6		50
Caprolactam	ND	1560	1300	83		1300	83		15-130	0		50
2,3,4,6-Tetrachlorophenol	ND	1560	1400	89		1400	89		40-140	0		50
1,4-Dioxane	ND	1560	1000	64		1000	64		40-140	0		50

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
2,4,6-Tribromophenol	88		88		10-136
2-Fluorobiphenyl	77		74		30-120
2-Fluorophenol	99		95		25-120
4-Terphenyl-d14	75		75		18-120
Nitrobenzene-d5	102		96		23-120
Phenol-d6	103		97		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-4 WG1274408-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Perfluorobutanoic Acid (PFBA)	2.34	37.2	44.3	113		43.5	109		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	1.03J	37.2	42.9	115		42.5	113		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	32.9	36.7	111		36.7	110		65-157	0		30
Perfluorohexanoic Acid (PFHxA)	0.830J	37.2	43.8	118		42.7	114		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	ND	37.2	45.7	123		41.1	109		58-159	11		30
Perfluorohexanesulfonic Acid (PFHxS)	1.18J	33.9	37.8	111		36.6	107		69-177	3		30
Perfluorooctanoic Acid (PFOA)	ND	37.2	42.3	114		43.6	116		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35.3	41.2	117		51.4	144		49-187	22		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.3	44.7	127		42.9	120		61-179	4		30
Perfluorononanoic Acid (PFNA)	ND	37.2	43.1	116		43.2	115		68-171	0		30
Perfluorooctanesulfonic Acid (PFOS)	ND	34.4	38.4	112		37.1	107		52-151	3		30
Perfluorodecanoic Acid (PFDA)	ND	37.2	39.9	107		37.0	98		63-171	8		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.7	37.8	106		41.7	116		56-173	10		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.2	38.4	103		38.1	101		60-166	1		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.2	42.3	114		39.6	105		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.9	36.7	102		32.0	88		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	37.2	66.8	**180**	Q	34.7	92		46-170	**63**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37.2	46.8	126		36.2	96		45-170	26		30
Perfluorododecanoic Acid (PFDoA)	ND	37.2	37.1	100		35.4	94		67-153	5		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.2	47.3	127		41.5	110		48-158	13		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.2	37.7	101		37.4	100		59-182	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-4 WG1274408-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		37		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	53		40		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	89		105		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		75		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		97		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		77		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		94		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		97		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106		102		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		107		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	119		120		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		23		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		89		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		97		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		83		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		94		31-159

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-6 WG1274408-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Perfluorobutanoic Acid (PFBA)	75.9	36.1	114	106		122	126		67-148	7		30
Perfluoropentanoic Acid (PFPeA)	258	36.1	293	97		310	142		63-161	6		30
Perfluorobutanesulfonic Acid (PFBS)	15.2	32	50.1	109		52.4	115		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	222	36.1	262	111		277	150		69-168	6		30
Perfluoroheptanoic Acid (PFHpA)	102	36.1	145	119		148	126		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	368	32.9	393	76		411	129		69-177	4		30
Perfluorooctanoic Acid (PFOA)	47.1	36.1	87.9	113		91.2	120		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.0	34.3	80.9	122		93.6	157		49-187	15		30
Perfluoroheptanesulfonic Acid (PFHpS)	7.56	34.3	61.1	156		58.2	146		61-179	5		30
Perfluorononanoic Acid (PFNA)	8.67	36.1	47.9	109		50.3	114		68-171	5		30
Perfluorooctanesulfonic Acid (PFOS)	595	33.4	745	**449**	Q	712	**345**	Q	52-151	5		30
Perfluorodecanoic Acid (PFDA)	28.9	36.1	64.4	98		82.7	147		63-171	25		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.628J	36.1	36.2	100		40.0	109		60-166	10		30
Perfluoroundecanoic Acid (PFUnA)	2.09	36.1	40.8	107		41.6	108		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	2.64	34.9	50.7	138		46.8	125		38-156	8		30
Perfluorooctanesulfonamide (FOSA)	23.8	36.1	55.5	88		63.4	108		46-170	13		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.1	39.4	109		37.4	102		45-170	5		30
Perfluorododecanoic Acid (PFDoA)	0.487J	36.1	33.1	92		38.9	106		67-153	16		30
Perfluorotridecanoic Acid (PFTrDA)	ND	36.1	35.8	99		39.7	108		48-158	10		30
Perfluorotetradecanoic Acid (PFTA)	ND	36.1	35.8	99		36.5	100		59-182	2		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-6 WG1274408-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		97		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	101		85		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		100		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	88		71		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	101		97		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		75		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		104		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		94		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		103		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		40		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		92		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		85		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		87		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	118		111		31-159

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 05,11 QC Batch ID: WG1277357-4 WG1277357-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	331	192	434	**54**	Q	490	83		56-173	12		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		59		7-170

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/17/19 12:38
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:42
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/17/19 13:19
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:42
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	54		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/14/19 13:27
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	87		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/16/19 04:28
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	62		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/16/19 04:41
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	58		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/19/19 10:00
Analyst: HT
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 00:55
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.0	3.46	1	A
Aroclor 1221	ND		ug/kg	39.0	3.90	1	A
Aroclor 1232	ND		ug/kg	39.0	8.26	1	A
Aroclor 1242	ND		ug/kg	39.0	5.25	1	A
Aroclor 1248	ND		ug/kg	39.0	5.84	1	A
Aroclor 1254	ND		ug/kg	39.0	4.26	1	A
Aroclor 1260	ND		ug/kg	39.0	7.20	1	A
Aroclor 1262	ND		ug/kg	39.0	4.95	1	A
Aroclor 1268	ND		ug/kg	39.0	4.04	1	A
PCBs, Total	ND		ug/kg	39.0	3.46	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/19/19 10:13
Analyst: HT
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 00:55
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	38.2	3.39	1	A
Aroclor 1221	ND		ug/kg	38.2	3.83	1	A
Aroclor 1232	ND		ug/kg	38.2	8.10	1	A
Aroclor 1242	ND		ug/kg	38.2	5.15	1	A
Aroclor 1248	ND		ug/kg	38.2	5.73	1	A
Aroclor 1254	ND		ug/kg	38.2	4.18	1	A
Aroclor 1260	ND		ug/kg	38.2	7.06	1	A
Aroclor 1262	ND		ug/kg	38.2	4.85	1	A
Aroclor 1268	ND		ug/kg	38.2	3.96	1	A
PCBs, Total	ND		ug/kg	38.2	3.39	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	48		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/19/19 01:04
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/17/19 13:59
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/17/19 16:29
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 02:19
Cleanup Method: EPA 3665A
Cleanup Date: 08/15/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	96		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 08/17/19 16:42
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 02:19
Cleanup Method: EPA 3665A
Cleanup Date: 08/15/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.083	0.034	1	A
Aroclor 1221	ND		ug/l	0.083	0.067	1	A
Aroclor 1232	ND		ug/l	0.083	0.046	1	A
Aroclor 1242	ND		ug/l	0.083	0.039	1	A
Aroclor 1248	ND		ug/l	0.083	0.049	1	A
Aroclor 1254	ND		ug/l	0.083	0.039	1	A
Aroclor 1260	ND		ug/l	0.083	0.032	1	A
Aroclor 1262	ND		ug/l	0.083	0.035	1	A
Aroclor 1268	ND		ug/l	0.083	0.034	1	A
PCBs, Total	ND		ug/l	0.083	0.032	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	127		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/16/19 07:38
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 10:26
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/15/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 03-04 Batch: WG1271086-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	56		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/14/19 12:19
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 05-07 Batch: WG1271946-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
Aroclor 1260	0.035	J	ug/l	0.083	0.032	B
PCBs, Total	0.035	J	ug/l	0.083	0.032	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/16/19 09:59
Analyst: KB

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 18:02
Cleanup Method: EPA 3665A
Cleanup Date: 08/15/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/15/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 12-13 Batch: WG1272451-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	74		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/19/19 08:33
Analyst: HT

Extraction Method: EPA 3546
Extraction Date: 08/17/19 00:33
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 08-09 Batch: WG1273527-1						
Aroclor 1016	ND		ug/kg	32.3	2.87	A
Aroclor 1221	ND		ug/kg	32.3	3.24	A
Aroclor 1232	ND		ug/kg	32.3	6.85	A
Aroclor 1242	ND		ug/kg	32.3	4.35	A
Aroclor 1248	ND		ug/kg	32.3	4.84	A
Aroclor 1254	ND		ug/kg	32.3	3.53	A
Aroclor 1260	ND		ug/kg	32.3	5.97	A
Aroclor 1262	ND		ug/kg	32.3	4.10	A
Aroclor 1268	ND		ug/kg	32.3	3.35	A
PCBs, Total	ND		ug/kg	32.3	2.87	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/19/19 01:45
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/17/19 13:59
Cleanup Method: EPA 3665A
Cleanup Date: 08/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 10 Batch: WG1273679-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1260	ND		ug/l	0.083	0.032	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
PCBs, Total	ND		ug/l	0.083	0.032	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	77		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 03-04 Batch: WG1271086-2 WG1271086-3									
Aroclor 1016	71		68		40-140	4		50	A
Aroclor 1260	64		61		40-140	5		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		65		30-150	A
Decachlorobiphenyl	68		67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		66		30-150	B
Decachlorobiphenyl	68		65		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 05-07 Batch: WG1271946-2 WG1271946-3									
Aroclor 1016	80		81		40-140	2		50	A
Aroclor 1260	75		78		40-140	4		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		81		30-150	A
Decachlorobiphenyl	84		88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		78		30-150	B
Decachlorobiphenyl	83		87		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 12-13 Batch: WG1272451-2 WG1272451-3									
Aroclor 1016	75		69		40-140	8		50	A
Aroclor 1260	69		63		40-140	8		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		64		30-150	A
Decachlorobiphenyl	83		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		62		30-150	B
Decachlorobiphenyl	74		69		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 08-09 Batch: WG1273527-2 WG1273527-3									
Aroclor 1016	68		76		40-140	11		50	A
Aroclor 1260	73		81		40-140	10		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		77		30-150	A
Decachlorobiphenyl	79		89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		71		30-150	B
Decachlorobiphenyl	70		78		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 10 Batch: WG1273679-2 WG1273679-3									
Aroclor 1016	75		80		40-140	6		50	A
Aroclor 1260	72		77		40-140	8		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		76		30-150	A
Decachlorobiphenyl	75		80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		71		30-150	B
Decachlorobiphenyl	74		78		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 03-04 QC Batch ID: WG1271086-4 WG1271086-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807													
Aroclor 1016	ND	1.78	0.820	46		0.926	52		40-140	12		50	A
Aroclor 1260	ND	1.78	0.802	45		0.942	53		40-140	16		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	44		52		30-150	A
Decachlorobiphenyl	50		61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	42		51		30-150	B
Decachlorobiphenyl	47		54		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 05-07 QC Batch ID: WG1271946-4 WG1271946-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808													
Aroclor 1016	ND	1.78	1.22	68		1.39	78		40-140	13		50	A
Aroclor 1260	ND	1.78	1.14	64		1.62	91		40-140	35		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		78		30-150	A
Decachlorobiphenyl	76		123		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		77		30-150	B
Decachlorobiphenyl	75		109		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273527-4 WG1273527-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808													
Aroclor 1016	ND	242	197	81		174	72		40-140	12		50	A
Aroclor 1260	ND	242	189	78		168	69		40-140	12		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		69		30-150	A
Decachlorobiphenyl	79		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		61		30-150	B
Decachlorobiphenyl	70		62		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 08:06
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 03:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05 Date Collected: 08/08/19 13:20

Client ID: HVRA-MW100-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 09:22
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 03:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 09:34
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 03:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/19/19 13:53
Analyst: AMC
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.85	0.362	1	A
Lindane	ND		ug/kg	0.770	0.344	1	A
Alpha-BHC	ND		ug/kg	0.770	0.219	1	A
Beta-BHC	ND		ug/kg	1.85	0.701	1	A
Heptachlor	ND		ug/kg	0.924	0.414	1	A
Aldrin	ND		ug/kg	1.85	0.651	1	A
Heptachlor epoxide	ND		ug/kg	3.47	1.04	1	A
Endrin	ND		ug/kg	0.770	0.316	1	A
Endrin aldehyde	207	E	ug/kg	2.31	0.809	1	B
Endrin ketone	ND		ug/kg	1.85	0.476	1	A
Dieldrin	ND		ug/kg	1.16	0.578	1	A
4,4'-DDE	1.65	J	ug/kg	1.85	0.428	1	B
4,4'-DDD	ND		ug/kg	1.85	0.659	1	B
4,4'-DDT	ND		ug/kg	3.47	1.49	1	A
Endosulfan I	ND		ug/kg	1.85	0.437	1	A
Endosulfan II	ND		ug/kg	1.85	0.618	1	A
Endosulfan sulfate	ND		ug/kg	0.770	0.367	1	A
Methoxychlor	ND		ug/kg	3.47	1.08	1	A
Toxaphene	ND		ug/kg	34.7	9.70	1	A
cis-Chlordane	ND		ug/kg	2.31	0.644	1	A
trans-Chlordane	ND		ug/kg	2.31	0.610	1	A
Chlordane	ND		ug/kg	15.0	6.12	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 Date Collected: 08/08/19 16:00

Client ID: HVRA-OF1-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	90		30-150	B
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	74		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08 D
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 15:11
Analyst: AMC
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Endrin aldehyde	206		ug/kg	4.62	1.62	2	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/19/19 14:30
Analyst: AMC
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.81	0.355	1	A
Lindane	ND		ug/kg	0.755	0.338	1	A
Alpha-BHC	ND		ug/kg	0.755	0.214	1	A
Beta-BHC	ND		ug/kg	1.81	0.687	1	A
Heptachlor	ND		ug/kg	0.906	0.406	1	A
Aldrin	ND		ug/kg	1.81	0.638	1	A
Heptachlor epoxide	ND		ug/kg	3.40	1.02	1	A
Endrin	ND		ug/kg	0.755	0.310	1	A
Endrin aldehyde	ND		ug/kg	2.26	0.793	1	A
Endrin ketone	ND		ug/kg	1.81	0.467	1	A
Dieldrin	ND		ug/kg	1.13	0.566	1	A
4,4'-DDE	1.86		ug/kg	1.81	0.419	1	A
4,4'-DDD	ND		ug/kg	1.81	0.646	1	A
4,4'-DDT	ND		ug/kg	3.40	1.46	1	A
Endosulfan I	ND		ug/kg	1.81	0.428	1	A
Endosulfan II	ND		ug/kg	1.81	0.606	1	A
Endosulfan sulfate	ND		ug/kg	0.755	0.359	1	A
Methoxychlor	ND		ug/kg	3.40	1.06	1	A
Toxaphene	ND		ug/kg	34.0	9.51	1	A
cis-Chlordane	ND		ug/kg	2.26	0.631	1	A
trans-Chlordane	ND		ug/kg	2.26	0.598	1	A
Chlordane	ND		ug/kg	14.7	6.00	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	102		30-150	B
Decachlorobiphenyl	109		30-150	B
2,4,5,6-Tetrachloro-m-xylene	119		30-150	A
Decachlorobiphenyl	82		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 08:44
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 00:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10 Date Collected: 08/09/19 08:40

Client ID: HVRA-NW102-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 08:57
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 00:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12 Date Collected: 08/09/19 10:00

Client ID: HVRA-MW103-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 08/16/19 09:09
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 08/15/19 00:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13 Date Collected: 08/09/19 09:15

Client ID: HVRA-MW101-190809 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	94		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/16/19 06:51
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 03:34

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 05-07,10,12-13 Batch: WG1272050-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A
Chlordane	ND		ug/l	0.143	0.033	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/16/19 06:51
Analyst: AMC

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 03:34

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 05-07,10,12-13 Batch: WG1272050-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/19/19 02:50
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 08-09 Batch: WG1273532-1						
Delta-BHC	ND		ug/kg	1.59	0.312	A
Lindane	ND		ug/kg	0.664	0.297	A
Alpha-BHC	ND		ug/kg	0.664	0.188	A
Beta-BHC	ND		ug/kg	1.59	0.604	A
Heptachlor	ND		ug/kg	0.797	0.357	A
Aldrin	ND		ug/kg	1.59	0.561	A
Heptachlor epoxide	ND		ug/kg	2.99	0.896	A
Endrin	ND		ug/kg	0.664	0.272	A
Endrin aldehyde	ND		ug/kg	1.99	0.697	A
Endrin ketone	ND		ug/kg	1.59	0.410	A
Dieldrin	ND		ug/kg	0.996	0.498	A
4,4'-DDE	ND		ug/kg	1.59	0.368	A
4,4'-DDD	ND		ug/kg	1.59	0.568	A
4,4'-DDT	ND		ug/kg	2.99	1.28	A
Endosulfan I	ND		ug/kg	1.59	0.376	A
Endosulfan II	ND		ug/kg	1.59	0.532	A
Endosulfan sulfate	ND		ug/kg	0.664	0.316	A
Methoxychlor	ND		ug/kg	2.99	0.930	A
Toxaphene	ND		ug/kg	29.9	8.37	A
cis-Chlordane	ND		ug/kg	1.99	0.555	A
trans-Chlordane	ND		ug/kg	1.99	0.526	A
Chlordane	ND		ug/kg	12.9	5.28	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/19/19 02:50
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 08-09 Batch: WG1273532-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	84		30-150	B
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	67		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 05-07,10,12-13 Batch: WG1272050-2 WG1272050-3									
Delta-BHC	73		88		30-150	18		20	A
Lindane	74		88		30-150	18		20	A
Alpha-BHC	73		85		30-150	15		20	A
Beta-BHC	75		90		30-150	19		20	A
Heptachlor	69		84		30-150	19		20	A
Aldrin	64		75		30-150	15		20	A
Heptachlor epoxide	75		89		30-150	18		20	A
Endrin	76		93		30-150	**21**	Q	20	A
Endrin aldehyde	56		73		30-150	**26**	Q	20	A
Endrin ketone	73		95		30-150	**26**	Q	20	A
Dieldrin	74		91		30-150	20		20	A
4,4'-DDE	75		90		30-150	18		20	A
4,4'-DDD	78		96		30-150	**21**	Q	20	A
4,4'-DDT	78		95		30-150	20		20	A
Endosulfan I	66		80		30-150	19		20	A
Endosulfan II	71		88		30-150	**22**	Q	20	A
Endosulfan sulfate	66		83		30-150	**23**	Q	20	A
Methoxychlor	71		88		30-150	**22**	Q	20	A
cis-Chlordane	71		82		30-150	14		20	A
trans-Chlordane	70		84		30-150	18		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 05-07,10,12-13 Batch: WG1272050-2 WG1272050-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		75		30-150	A
Decachlorobiphenyl	58		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		69		30-150	B
Decachlorobiphenyl	68		83		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08-09 Batch: WG1273532-2 WG1273532-3									
Delta-BHC	94		87		30-150	8		30	A
Lindane	96		88		30-150	9		30	A
Alpha-BHC	96		88		30-150	9		30	A
Beta-BHC	95		87		30-150	9		30	A
Heptachlor	84		74		30-150	13		30	A
Aldrin	84		77		30-150	9		30	A
Heptachlor epoxide	90		84		30-150	7		30	A
Endrin	98		92		30-150	6		30	A
Endrin aldehyde	63		59		30-150	7		30	A
Endrin ketone	92		85		30-150	8		30	A
Dieldrin	95		89		30-150	7		30	A
4,4'-DDE	89		84		30-150	6		30	A
4,4'-DDD	101		94		30-150	7		30	A
4,4'-DDT	99		93		30-150	6		30	A
Endosulfan I	81		74		30-150	9		30	A
Endosulfan II	91		84		30-150	8		30	A
Endosulfan sulfate	79		76		30-150	4		30	A
Methoxychlor	85		80		30-150	6		30	A
cis-Chlordane	81		74		30-150	9		30	A
trans-Chlordane	92		88		30-150	4		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08-09 Batch: WG1273532-2 WG1273532-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	94		88		30-150	B
Decachlorobiphenyl	120		116		30-150	B
2,4,5,6-Tetrachloro-m-xylene	95		88		30-150	A
Decachlorobiphenyl	99		77		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 05-07,10,12-13 QC Batch ID: WG1272050-4 WG1272050-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808													
Delta-BHC	ND	0.357	0.281	79		0.259	72		30-150	8		30	A
Lindane	ND	0.357	0.282	79		0.270	76		30-150	4		30	A
Alpha-BHC	ND	0.357	0.281	79		0.268	75		30-150	5		30	A
Beta-BHC	ND	0.357	0.286	80		0.277	78		30-150	3		30	A
Heptachlor	ND	0.357	0.268	75		0.253	71		30-150	6		30	A
Aldrin	ND	0.357	0.254	71		0.242	68		30-150	5		30	A
Heptachlor epoxide	ND	0.357	0.288	81		0.273	76		30-150	5		30	A
Endrin	ND	0.357	0.301	84		0.281	79		30-150	7		30	A
Endrin aldehyde	ND	0.357	0.241	68		0.238	67		30-150	1		30	A
Endrin ketone	ND	0.357	0.302	85		0.292	82		30-150	3		30	A
Dieldrin	ND	0.357	0.290	81		0.277	78		30-150	5		30	A
4,4'-DDE	ND	0.357	0.293	82		0.280	78		30-150	5		30	A
4,4'-DDD	ND	0.357	0.306	86		0.294	82		30-150	4		30	A
4,4'-DDT	ND	0.357	0.307	86		0.299	84		30-150	3		30	A
Endosulfan I	ND	0.357	0.260	73		0.248	69		30-150	5		30	A
Endosulfan II	ND	0.357	0.282	79		0.268	75		30-150	5		30	A
Endosulfan sulfate	ND	0.357	0.266	74		0.251	70		30-150	6		30	A
Methoxychlor	ND	0.357	0.284	80		0.274	77		30-150	4		30	A
cis-Chlordane	ND	0.357	0.282	79		0.262	73		30-150	7		30	A
trans-Chlordane	ND	0.357	0.273	76		0.258	72		30-150	6		30	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 05-07,10,12-13 QC Batch ID: WG1272050-4 WG1272050-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		62		30-150	A
Decachlorobiphenyl	72		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		59		30-150	B
Decachlorobiphenyl	80		77		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273532-6 WG1273532-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808													
Delta-BHC	ND	37.5	35.3	94		20.3	54		30-150	**54**	Q	50	A
Lindane	ND	37.5	37.0	99		21.2	56		30-150	**54**	Q	50	A
Alpha-BHC	ND	37.5	37.4	100		21.9	58		30-150	**52**	Q	50	A
Beta-BHC	ND	37.5	37.4	100		25.5	67		30-150	38		50	A
Heptachlor	ND	37.5	28.8	77		17.6	47		30-150	48		50	A
Aldrin	ND	37.5	29.5	79		17.4	46		30-150	**52**	Q	50	A
Heptachlor epoxide	ND	37.5	32.6	87		19.4	51		30-150	**51**	Q	50	A
Endrin	ND	37.5	35.6	95		21.4	57		30-150	50		50	A
Endrin aldehyde	207E	37.5	29.0	**0**	Q	16.0	**0**	Q	30-150	**58**	Q	50	B
Endrin ketone	ND	37.5	31.4	84		16.8	44		30-150	**61**	Q	50	A
Dieldrin	ND	37.5	34.1	91		19.9	53		30-150	**53**	Q	50	A
4,4'-DDE	1.65J	37.5	41.2	110		23.2	61		30-150	**56**	Q	50	B
4,4'-DDD	ND	37.5	37.2	99		21.4	57		30-150	**54**	Q	50	B
4,4'-DDT	ND	37.5	36.8	98		22.3	59		30-150	49		50	A
Endosulfan I	ND	37.5	28.7	77		17.6	47		30-150	48		50	A
Endosulfan II	ND	37.5	32.2	86		18.2	48		30-150	**56**	Q	50	A
Endosulfan sulfate	ND	37.5	25.3	68		12.5	33		30-150	**68**	Q	50	A
Methoxychlor	ND	37.5	29.0	77		17.2	45		30-150	**51**	Q	50	A
cis-Chlordane	ND	37.5	27.5	73		19.1	51		30-150	36		50	A
trans-Chlordane	ND	37.5	36.6	98		22.4	59		30-150	48		50	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273532-6 WG1273532-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	111		61		30-150	B
Decachlorobiphenyl	128		83		30-150	B
2,4,5,6-Tetrachloro-m-xylene	100		60		30-150	A
Decachlorobiphenyl	100		60		30-150	A

METALS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Antimony, Total	0.00125	J	mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00810		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Barium, Total	0.1521		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Calcium, Total	148.		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Copper, Total	0.00093	J	mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Iron, Total	0.434		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Magnesium, Total	42.7		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Manganese, Total	0.2582		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:05	EPA 7470A	1,7470A	MG
Nickel, Total	0.00112	J	mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Potassium, Total	3.04		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Sodium, Total	86.9		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Thallium, Total	0.00018	J	mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:35	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Antimony, Total	0.00072	J	mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00718		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Barium, Total	0.1411		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Calcium, Total	138.		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Copper, Total	0.00057	J	mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Iron, Total	0.436		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Magnesium, Total	41.0		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Manganese, Total	0.2434		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:34	EPA 7470A	1,7470A	MG
Nickel, Total	0.00124	J	mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Potassium, Total	2.88		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Sodium, Total	82.9		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Thallium, Total	0.00043	J	mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:00	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0100		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00032	J	mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Barium, Total	0.01562		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Calcium, Total	37.4		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Chromium, Total	0.00069	J	mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Copper, Total	0.00095	J	mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Iron, Total	0.0211	J	mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Magnesium, Total	7.72		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Manganese, Total	0.03920		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:28	EPA 7470A	1,7470A	MG
Nickel, Total	0.00057	J	mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Potassium, Total	3.16		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Sodium, Total	135.		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:39	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.00618	J	mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Antimony, Total	0.00076	J	mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00039	J	mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Barium, Total	0.01500		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Calcium, Total	36.8		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Chromium, Total	0.00057	J	mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Copper, Total	0.00090	J	mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Iron, Total	0.0395	J	mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Magnesium, Total	7.69		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Manganese, Total	0.03624		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:36	EPA 7470A	1,7470A	MG
Nickel, Total	0.00061	J	mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Potassium, Total	3.09		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Sodium, Total	134.		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Thallium, Total	0.00045	J	mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:35	EPA 3005A	1,6020B	AM

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Calcium, Total	0.202		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Iron, Total	0.0210	J	mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:43	EPA 7470A	1,7470A	MG
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8980		mg/kg	9.03	2.44	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Antimony, Total	0.777	J	mg/kg	4.52	0.343	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Arsenic, Total	5.14		mg/kg	0.903	0.188	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Barium, Total	64.5		mg/kg	0.903	0.157	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Beryllium, Total	0.253	J	mg/kg	0.452	0.030	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Cadmium, Total	0.641	J	mg/kg	0.903	0.089	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Calcium, Total	19600		mg/kg	9.03	3.16	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Chromium, Total	9.22		mg/kg	0.903	0.087	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Cobalt, Total	6.50		mg/kg	1.81	0.150	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Copper, Total	16.4		mg/kg	0.903	0.233	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Iron, Total	18600		mg/kg	4.52	0.816	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Lead, Total	21.9		mg/kg	4.52	0.242	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Magnesium, Total	13000		mg/kg	9.03	1.39	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Manganese, Total	891		mg/kg	0.903	0.144	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.075	0.049	1	08/15/19 05:50	08/15/19 17:22	EPA 7471B	1,7471B	GD
Nickel, Total	13.9		mg/kg	2.26	0.219	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Potassium, Total	283		mg/kg	226	13.0	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.81	0.233	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.903	0.256	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Sodium, Total	87.5	J	mg/kg	181	2.84	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.81	0.284	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Vanadium, Total	10.4		mg/kg	0.903	0.183	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB
Zinc, Total	77.6		mg/kg	4.52	0.265	2	08/14/19 21:28	08/15/19 15:58	EPA 3050B	1,6010D	AB

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09 Date Collected: 08/08/19 00:00

Client ID: HVRA-FD02-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7020		mg/kg	8.97	2.42	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Antimony, Total	0.789	J	mg/kg	4.48	0.341	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Arsenic, Total	6.40		mg/kg	0.897	0.186	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Barium, Total	48.1		mg/kg	0.897	0.156	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Beryllium, Total	0.224	J	mg/kg	0.448	0.030	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Cadmium, Total	0.735	J	mg/kg	0.897	0.088	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Calcium, Total	55100		mg/kg	8.97	3.14	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Chromium, Total	7.50		mg/kg	0.897	0.086	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Cobalt, Total	5.05		mg/kg	1.79	0.149	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Copper, Total	25.2		mg/kg	0.897	0.231	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Iron, Total	21100		mg/kg	4.48	0.810	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Lead, Total	20.0		mg/kg	4.48	0.240	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Magnesium, Total	15100		mg/kg	8.97	1.38	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Manganese, Total	1250		mg/kg	0.897	0.143	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.073	0.048	1	08/15/19 05:50	08/15/19 18:12	EPA 7471B	1,7471B	GD
Nickel, Total	10.8		mg/kg	2.24	0.217	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Potassium, Total	186	J	mg/kg	224	12.9	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.79	0.231	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Silver, Total	0.287	J	mg/kg	0.897	0.254	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Sodium, Total	73.9	J	mg/kg	179	2.82	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.79	0.282	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Vanadium, Total	9.82		mg/kg	0.897	0.182	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB
Zinc, Total	88.2		mg/kg	4.48	0.263	2	08/14/19 21:28	08/15/19 16:23	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.472		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Antimony, Total	0.00052	J	mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00152		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Barium, Total	0.07084		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00010	J	mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Calcium, Total	206.		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Chromium, Total	0.00173		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Cobalt, Total	0.00630		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Copper, Total	0.00274		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Iron, Total	2.00		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Lead, Total	0.00113		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Magnesium, Total	66.8		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Manganese, Total	9.436		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:44	EPA 7470A	1,7470A	MG
Nickel, Total	0.01134		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Potassium, Total	3.52		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Sodium, Total	15.9		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Thallium, Total	0.00016	J	mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM
Zinc, Total	0.01336		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:39	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.172		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00479		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Barium, Total	0.05380		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Calcium, Total	72.2		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Chromium, Total	0.00070	J	mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Cobalt, Total	0.00114		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Copper, Total	0.00117		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Iron, Total	7.80		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Lead, Total	0.00075	J	mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Magnesium, Total	16.9		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Manganese, Total	3.741		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:46	EPA 7470A	1,7470A	MG
Nickel, Total	0.00081	J	mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Potassium, Total	1.55		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Sodium, Total	68.5		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM
Zinc, Total	0.00414	J	mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:44	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3.05		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Antimony, Total	0.00062	J	mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Arsenic, Total	0.00428		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Barium, Total	0.07828		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Beryllium, Total	0.00019	J	mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00009	J	mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Calcium, Total	74.9		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Chromium, Total	0.00642		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Cobalt, Total	0.00395		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Copper, Total	0.01337		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Iron, Total	7.69		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Lead, Total	0.00542		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Magnesium, Total	24.3		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Manganese, Total	1.657		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:48	EPA 7470A	1,7470A	MG
Nickel, Total	0.00755		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Potassium, Total	1.70		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Sodium, Total	10.4		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Vanadium, Total	0.00455	J	mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM
Zinc, Total	0.03004		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:48	EPA 3005A	1,6020B	AM

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-07,10,12-13 Batch: WG1271502-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Iron, Total	ND		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-09 Batch: WG1272465-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Arsenic, Total	0.100	J	mg/kg	0.400	0.083	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 08/29/19

Method Blank Analysis
Batch Quality Control

Barium, Total	ND	mg/kg	0.400	0.070	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Beryllium, Total	ND	mg/kg	0.200	0.013	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Cadmium, Total	ND	mg/kg	0.400	0.039	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Calcium, Total	ND	mg/kg	4.00	1.40	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Chromium, Total	ND	mg/kg	0.400	0.038	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Cobalt, Total	ND	mg/kg	0.800	0.066	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Copper, Total	ND	mg/kg	0.400	0.103	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Iron, Total	ND	mg/kg	2.00	0.361	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Lead, Total	ND	mg/kg	2.00	0.107	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Magnesium, Total	ND	mg/kg	4.00	0.616	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Manganese, Total	ND	mg/kg	0.400	0.064	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Nickel, Total	ND	mg/kg	1.00	0.097	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Potassium, Total	ND	mg/kg	100	5.76	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Selenium, Total	ND	mg/kg	0.800	0.103	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Silver, Total	ND	mg/kg	0.400	0.113	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Sodium, Total	ND	mg/kg	80.0	1.26	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Thallium, Total	ND	mg/kg	0.800	0.126	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Vanadium, Total	ND	mg/kg	0.400	0.081	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Zinc, Total	ND	mg/kg	2.00	0.117	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-09 Batch: WG1272591-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/15/19 05:50	08/15/19 17:18	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-07,10,12-13 Batch: WG1272866-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:01	1,7470A	MG

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 Batch: WG1271502-2								
Aluminum, Total	108		-		80-120	-		
Antimony, Total	93		-		80-120	-		
Arsenic, Total	109		-		80-120	-		
Barium, Total	108		-		80-120	-		
Beryllium, Total	109		-		80-120	-		
Cadmium, Total	113		-		80-120	-		
Calcium, Total	114		-		80-120	-		
Chromium, Total	105		-		80-120	-		
Cobalt, Total	104		-		80-120	-		
Copper, Total	100		-		80-120	-		
Iron, Total	112		-		80-120	-		
Lead, Total	108		-		80-120	-		
Magnesium, Total	108		-		80-120	-		
Manganese, Total	104		-		80-120	-		
Nickel, Total	108		-		80-120	-		
Potassium, Total	110		-		80-120	-		
Selenium, Total	112		-		80-120	-		
Silver, Total	102		-		80-120	-		
Sodium, Total	108		-		80-120	-		
Thallium, Total	107		-		80-120	-		
Vanadium, Total	105		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 Batch: WG1271502-2					
Zinc, Total	112	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 Batch: WG1272465-2 SRM Lot Number: D105-540					
Aluminum, Total	62	-	51-149	-	
Antimony, Total	159	-	19-249	-	
Arsenic, Total	102	-	70-130	-	
Barium, Total	90	-	75-125	-	
Beryllium, Total	90	-	75-125	-	
Cadmium, Total	89	-	75-125	-	
Calcium, Total	80	-	73-127	-	
Chromium, Total	88	-	70-130	-	
Cobalt, Total	90	-	75-125	-	
Copper, Total	94	-	75-125	-	
Iron, Total	76	-	38-162	-	
Lead, Total	89	-	71-128	-	
Magnesium, Total	80	-	63-137	-	
Manganese, Total	86	-	76-124	-	
Nickel, Total	91	-	70-131	-	
Potassium, Total	80	-	60-140	-	
Selenium, Total	97	-	63-137	-	
Silver, Total	95	-	69-131	-	
Sodium, Total	101	-	37-162	-	
Thallium, Total	88	-	68-132	-	
Vanadium, Total	89	-	65-135	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 Batch: WG1272465-2 SRM Lot Number: D105-540					
Zinc, Total	92	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 08-09 Batch: WG1272591-2 SRM Lot Number: D105-540					
Mercury, Total	101	-	60-141	-	
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 Batch: WG1272866-2					
Mercury, Total	97	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-3 WG1271502-4 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Aluminum, Total	ND	2	2.09	104		2.16	108		75-125	3		20
Antimony, Total	0.00125J	0.5	0.4393	88		0.4867	97		75-125	10		20
Arsenic, Total	0.00810	0.12	0.1390	109		0.1377	108		75-125	1		20
Barium, Total	0.1521	2	2.260	105		2.359	110		75-125	4		20
Beryllium, Total	ND	0.05	0.05027	100		0.05284	106		75-125	5		20
Cadmium, Total	ND	0.051	0.05822	114		0.06010	118		75-125	3		20
Calcium, Total	148.	10	142	**0**	Q	147	**0**	Q	75-125	3		20
Chromium, Total	ND	0.2	0.2105	105		0.2185	109		75-125	4		20
Cobalt, Total	ND	0.5	0.5412	108		0.5532	111		75-125	2		20
Copper, Total	0.00093J	0.25	0.2577	103		0.2587	103		75-125	0		20
Iron, Total	0.434	1	1.58	115		1.58	115		75-125	0		20
Lead, Total	ND	0.51	0.5548	109		0.5836	114		75-125	5		20
Magnesium, Total	42.7	10	49.9	**72**	Q	51.1	84		75-125	2		20
Manganese, Total	0.2582	0.5	0.7640	101		0.7783	104		75-125	2		20
Nickel, Total	0.00112J	0.5	0.5324	106		0.5666	113		75-125	6		20
Potassium, Total	3.04	10	13.3	103		13.8	108		75-125	4		20
Selenium, Total	ND	0.12	0.125	104		0.138	115		75-125	10		20
Silver, Total	ND	0.05	0.05292	106		0.05378	108		75-125	2		20
Sodium, Total	86.9	10	89.7	**28**	Q	91.5	**46**	Q	75-125	2		20
Thallium, Total	0.00018J	0.12	0.1297	108		0.1353	113		75-125	4		20
Vanadium, Total	ND	0.5	0.5446	109		0.5554	111		75-125	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-3 WG1271502-4 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807									
Zinc, Total	ND	0.5	0.5575	112	0.5692	114	75-125	2	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-7 WG1271502-8 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808											
Aluminum, Total	0.0100	2	1.99	99		2.22	110		75-125	11	20
Antimony, Total	ND	0.5	0.4019	80		0.4579	92		75-125	13	20
Arsenic, Total	0.00032J	0.12	0.1248	104		0.1283	107		75-125	3	20
Barium, Total	0.01562	2	2.012	100		2.147	106		75-125	6	20
Beryllium, Total	ND	0.05	0.05898	118		0.05549	111		75-125	6	20
Cadmium, Total	ND	0.051	0.05334	104		0.05600	110		75-125	5	20
Calcium, Total	37.4	10	41.4	**40**	Q	45.0	76		75-125	8	20
Chromium, Total	0.00069J	0.2	0.1996	100		0.2156	108		75-125	8	20
Cobalt, Total	ND	0.5	0.5023	100		0.5347	107		75-125	6	20
Copper, Total	0.00095J	0.25	0.2401	96		0.2516	101		75-125	5	20
Iron, Total	0.0211J	1	1.12	112		1.14	114		75-125	2	20
Lead, Total	ND	0.51	0.5286	104		0.5648	111		75-125	7	20
Magnesium, Total	7.72	10	17.1	94		18.5	108		75-125	8	20
Manganese, Total	0.03920	0.5	0.5259	97		0.5702	106		75-125	8	20
Nickel, Total	0.00057J	0.5	0.5061	101		0.5414	108		75-125	7	20
Potassium, Total	3.16	10	12.7	95		13.7	105		75-125	8	20
Selenium, Total	ND	0.12	0.131	109		0.142	118		75-125	8	20
Silver, Total	ND	0.05	0.05033	101		0.05215	104		75-125	4	20
Sodium, Total	135.	10	127	**0**	Q	137	**20**	Q	75-125	8	20
Thallium, Total	ND	0.12	0.1241	103		0.1337	111		75-125	7	20
Vanadium, Total	ND	0.5	0.5003	100		0.5506	110		75-125	10	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-7 WG1271502-8 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808									
Zinc, Total	ND	0.5	0.5268	105	0.5546	111	75-125	5	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1272465-3 WG1272465-4 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Aluminum, Total	8980	186	8440	**0**	Q	8490	**0**	Q	75-125	1		20
Antimony, Total	0.777J	46.6	45.7	98		46.5	101		75-125	2		20
Arsenic, Total	5.14	11.2	16.3	100		17.1	108		75-125	5		20
Barium, Total	64.5	186	220	83		226	88		75-125	3		20
Beryllium, Total	0.253J	4.66	4.59	98		4.46	97		75-125	3		20
Cadmium, Total	0.641J	4.76	4.99	105		4.79	102		75-125	4		20
Calcium, Total	19600	932	6690	**0**	Q	33000	**1460**	Q	75-125	**133**	Q	20
Chromium, Total	9.22	18.6	25.8	89		24.4	83		75-125	6		20
Cobalt, Total	6.50	46.6	45.5	84		43.1	80		75-125	5		20
Copper, Total	16.4	23.3	40.0	101		37.8	93		75-125	6		20
Iron, Total	18600	93.2	22000	**3640**	Q	18400	**0**	Q	75-125	18		20
Lead, Total	21.9	47.6	56.4	**72**	Q	56.8	**74**	Q	75-125	1		20
Magnesium, Total	13000	932	6630	**0**	Q	17000	**435**	Q	75-125	**88**	Q	20
Manganese, Total	891	46.6	516	**0**	Q	616	**0**	Q	75-125	18		20
Nickel, Total	13.9	46.6	52.2	82		49.4	77		75-125	6		20
Potassium, Total	283	932	1160	94		1180	98		75-125	2		20
Selenium, Total	ND	11.2	10.8	96		10.8	98		75-125	0		20
Silver, Total	ND	28	28.2	101		29.4	107		75-125	4		20
Sodium, Total	87.5J	932	1050	112		1080	118		75-125	3		20
Thallium, Total	ND	11.2	8.73	78		8.41	76		75-125	4		20
Vanadium, Total	10.4	46.6	54.4	94		54.5	96		75-125	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1272465-3 WG1272465-4 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808									
Zinc, Total	77.6	46.6	125	102	123	99	75-125	2	20
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1272591-3 WG1272591-4 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808									
Mercury, Total	ND	0.151	0.145	96	0.141	94	80-120	3	20
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1272866-3 WG1272866-4 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807									
Mercury, Total	ND	0.005	0.00434	87	0.00435	87	75-125	0	20
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1272866-5 WG1272866-6 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808									
Mercury, Total	ND	0.005	0.00439	88	0.00434	87	75-125	1	20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:25	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-04
Client ID: HVRA-FD01-190807
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:28	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-05
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/13/19 11:35	08/13/19 14:59	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-06
Client ID: HVRA-FD01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.003	J	mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:29	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:30	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.3		%	0.100	NA	1	-	08/10/19 22:35	121,2540G	YA
Cyanide, Total	ND		mg/kg	1.2	0.25	1	08/11/19 16:10	08/12/19 11:14	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-09
Client ID: HVRA-FD02-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	08/10/19 22:35	121,2540G	YA
Cyanide, Total	ND		mg/kg	1.1	0.23	1	08/11/19 16:10	08/12/19 11:19	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-10
Client ID: HVRA-NW102-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 08:40
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.003	J	mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:33	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-12
Client ID: HVRA-MW103-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 10:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:34	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

SAMPLE RESULTS

Lab ID: L1935927-13
Client ID: HVRA-MW101-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:15
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:35	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 08-09 Batch: WG1271126-1										
Cyanide, Total	ND		mg/kg	0.91	0.19	1	08/11/19 16:10	08/12/19 11:00	1,9010C/9012B	LH
General Chemistry - Westborough Lab for sample(s): 03-04,06-07,10,12-13 Batch: WG1271313-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/12/19 12:30	08/12/19 15:39	1,9010C/9012B	LH
General Chemistry - Westborough Lab for sample(s): 05 Batch: WG1271717-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	08/13/19 11:35	08/13/19 14:22	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08-09 Batch: WG1271126-2 WG1271126-3								
Cyanide, Total	**75**	Q	**70**	Q	80-120	0		35
General Chemistry - Westborough Lab Associated sample(s): 03-04,06-07,10,12-13 Batch: WG1271313-2 WG1271313-3								
Cyanide, Total	109		108		85-115	1		20
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1271717-2 WG1271717-3								
Cyanide, Total	106		106		85-115	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1271126-4 WG1271126-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Cyanide, Total	ND	12	11	94		10	89		75-125	10		35
General Chemistry - Westborough Lab Associated sample(s): 03-04,06-07,10,12-13 QC Batch ID: WG1271313-4 WG1271313-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Cyanide, Total	ND	0.2	0.192	96		0.194	97		80-120	1		20
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1271717-4 WG1271717-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Cyanide, Total	ND	0.2	0.199	100		0.202	101		80-120	1		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 08/29/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1271041-1 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808						
Solids, Total	84.3	88.1	%	4		20

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-01A	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-01B	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-01D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-02A	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03A	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03A1	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03A2	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03B	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03B1	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-03C	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03C1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03C2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03D	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03D1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03D2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-03E	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-03E1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-03E2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-03F	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-03F1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-03F2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-03G	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03G1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03G2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03H	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03H1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03H2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-03I	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-03I1	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-03I2	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-03J	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-03J1	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-03J2	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-04A	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-04B	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-04C	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-04D	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8082-LVI(7)
L1935927-04E	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-04F	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-04G	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-04H	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-04I	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-04J	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-05A	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05A1	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05A2	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05B	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05B1	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05B2	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05C	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05C1	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05C2	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-05D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05D1	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05D2	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05E1	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05E2	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-05F	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05F1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-05F2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05G	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05G1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05G2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05H	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05H1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05H2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05I	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05I1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05I2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-05J	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05J1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05J2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05K	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05K1	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05K2	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-05L	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-05L1	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-05L2	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)
L1935927-05M	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-05M1	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-05M2	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-05N	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05N1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05N2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05O	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05O1	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-05O2	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-06A	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-06B	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-06C	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-06D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-06E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-06F	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-06G	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-06H	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-06I	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-06J	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-06K	Amber 250ml unpreserved	B	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-06L	Plastic 250ml NaOH preserved	B	>12	>12	3.5	Y	Absent		TCN-9010(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-06M	Plastic 250ml HNO3 preserved	B	<2	<2	3.5	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-06N	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-06O	Amber 120ml unpreserved	B	7	7	3.5	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-07A	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-07B	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-07C	Vial HCl preserved	B	NA		3.5	Y	Absent		NYTCL-8260-R2(14)
L1935927-07D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-07E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-07F	Amber 120ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-07G	Amber 120ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-07H	Amber 250ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-07I	Amber 250ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-07J	Amber 250ml unpreserved	C	7	7	4.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-07K	Amber 250ml unpreserved	C	7	7	4.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-07L	Plastic 250ml NaOH preserved	C	>12	>12	4.2	Y	Absent		TCN-9010(14)
L1935927-07M	Plastic 250ml HNO3 preserved	C	<2	<2	4.2	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-07N	Amber 120ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-07O	Amber 120ml unpreserved	C	7	7	4.2	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-08A	Vial MeOH preserved	C	NA		4.2	Y	Absent		NYTCL-8260HLW-R2(14)
L1935927-08A1	Vial MeOH preserved	C	NA		4.2	Y	Absent		NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-08A2	Vial MeOH preserved	C	NA		4.2	Y	Absent		NYTCL-8260HLW-R2(14)
L1935927-08B	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08B1	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08B2	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08C	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08C1	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08C2	Vial water preserved	C	NA		4.2	Y	Absent	10-AUG-19 09:35	NYTCL-8260HLW-R2(14)
L1935927-08D	Plastic 8oz unpreserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935927-08D1	Plastic 8oz unpreserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935927-08D2	Plastic 8oz unpreserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935927-08E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1935927-08E1	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1935927-08E2	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1935927-08F	Metals Only-Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935927-08F1	Metals Only-Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935927-08F2	Metals Only-Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935927-08G	Glass 250ml/8oz unpreserved	C	NA		4.2	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935927-08G1	Glass 250ml/8oz unpreserved	C	NA		4.2	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935927-08G2	Glass 500ml/16oz unpreserved	C	NA		4.2	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935927-09A	Vial MeOH preserved	C	NA		4.2	Y	Absent		NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-09B	Vial water preserved	C	NA		4.2	Y	Absent	**10-AUG-19 09:35**	NYTCL-8260HLW-R2(14)
L1935927-09C	Vial water preserved	C	NA		4.2	Y	Absent	**10-AUG-19 09:35**	NYTCL-8260HLW-R2(14)
L1935927-09D	Plastic 8oz unpreserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(28)
L1935927-09E	Plastic 2oz unpreserved for TS	A	NA		4.8	Y	Absent		TS(7)
L1935927-09F	Metals Only-Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1935927-09G	Glass 250ml/8oz unpreserved	C	NA		4.2	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1935927-10A	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-10B	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-10C	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-10D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-10E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-10F	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-10G	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-10H	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-10I	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-10J	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-10K	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-10L	Plastic 250ml NaOH preserved	D	>12	>12	3.9	Y	Absent		TCN-9010(14)
L1935927-10M	Plastic 250ml HNO3 preserved	D	<2	<2	3.9	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-10N	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-10O	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-11D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-11E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-11J	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-11K	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-12A	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-12B	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-12C	Vial HCl preserved	D	NA		3.9	Y	Absent		NYTCL-8260-R2(14)
L1935927-12D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-12E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-12F	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-12G	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-12H	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-12I	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1935927-12J	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-12K	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-12L	Plastic 250ml NaOH preserved	D	>12	>12	3.9	Y	Absent		TCN-9010(14)
L1935927-12M	Plastic 250ml HNO3 preserved	D	<2	<2	3.9	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-12N	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-12O	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-13D	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-13E	Plastic 250ml Trizma preserved	A	NA		4.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1935927-13F	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-13G	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-13J	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 08/29/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1935927-13K	Amber 250ml unpreserved	D	7	7	3.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1935927-13L	Plastic 250ml NaOH preserved	D	>12	>12	3.9	Y	Absent		TCN-9010(14)
L1935927-13M	Plastic 250ml HNO3 preserved	D	<2	<2	3.9	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L1935927-13N	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)
L1935927-13O	Amber 120ml unpreserved	D	7	7	3.9	Y	Absent		NYTCL-8081(7),NYTCL-8082-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1935927
Project Number:	18.8090	**Report Date:**	08/29/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 8/9/19

ALPHA Job #: L1935917

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project # 18.8090
(Use Project name as Project #) ☐
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☑ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Run VOCs ☑

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pest.	TAL Metals	CN	PFAS	1,4-Dioxane	Sample Specific Comments	Total Bottle
35927-01	HVRA-LTB01-190807	8/7/19	—	Water	CB	~~X~~						✓		~~MS/MSD~~	
-02	HVRA-FTB01-190807	8/7/19	1435	Water	CB							✓			1
-03	HVRA-MaintBldg-190807	8/7/19	1500	Water	DK		✓	✓		✓	✓	✓	✓	MS/MSD here	2
-04	HVRA-FD01-190807	8/7/19	—	Water	DK		✓	✓		✓	✓	✓	✓		10
-05	HVRA-MW100-190808	8/8/19	1320	GW	CB	✓	✓	✓	✓	✓	✓	✓	✓	MS/MSD here	45
-06	HVRA-FD01-190808	8/8/19	—	GW	CB	✓	✓	✓	✓	✓	✓	✓	✓		15
-07	HVRA-EB01-190808	8/8/19	1420	Water	DK	✓	✓	✓	✓	✓	✓	✓	✓	(Peri. pump tubing)	15
-08	HVRA-OF1-190808	8/8/19	1600	Sediment	CB	✓	✓	✓	✓	✓	✓	✓	✓	MS/MSD here	21
-09	HVRA-FD02-190808	8/8/19	—	Sediment	CB	✓	✓	✓	✓	✓	✓	✓	✓		7
-10	HVRA-MW102-190809	8/9/19	0840	GW	DK	✓	✓	✓	✓	✓	✓	✓	✓		15

Container Type	V	A	A	A	P	P	P	A
Preservative	B	A	A	A	C	E	O	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	8/9/19 - 11:35		8/9/19 - 11:35
	8/9/19 - 14:40		8/9/19 14:40
MEATOUDES (AAL)	8/9/19 17:00		8/9/19 19:30
D.S.	8/9/19 23:05		8/9/19 23:05

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab: 8/9/19

ALPHA Job #: L1935927

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.Moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.8090
(Use Project name as Project #) ☐
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☑ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pest.	TAL Metals	CN	PFAS	1,4-Dioxane	Sample Specific Comments	Total Bottle
35927-11	HVRA-MW104-190809	8/9/19	0925	GW	DK							✓	✓		4
-12	HVRA-MW103-190809	8/9/19	1000	GW	DK	✓	✓	✓	✓	✓	✓	✓	✓		15
-13	HVRA-MW101-190809	8/9/19	0915	GW	CB			✓	✓	✓	✓	✓	✓		10

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	A	A	A	P	P	P	A
Preservative	B	A	A	A	C	E	O	A

Relinquished By:	Date/Time	Received By:	Date/Time
	8/9/19-11:35		8/9/19-11:35
	8/9/19-14:40	NEATOUROS (AAL)	8/9/19 14:40
NEATOUROS (AAL)	8/9/19-17:00	P.S., AWL	8/9/19 19:30
P.S.	8/9/19 23:05		8/9/19 23:05

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1936143
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	08/26/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1936143-01	HVRA-RB01-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 09:30	08/12/19
L1936143-02	HVRA-MW100-1.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 09:45	08/12/19
L1936143-03	HVRA-RB02-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 10:00	08/12/19
L1936143-04	HVRA-MW101-1.5	SOIL	WAPPINGERS FALLS, NY	08/12/19 10:20	08/12/19
L1936143-05	HVRA-MW101-2.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 10:30	08/12/19
L1936143-06	HVRA-RB03-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 11:00	08/12/19
L1936143-07	HVRA-MW102-0.5	SOIL	WAPPINGERS FALLS, NY	08/12/19 11:15	08/12/19
L1936143-08	HVRA-MW102-2.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 11:30	08/12/19
L1936143-09	HVRA-FTB01-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 12:50	08/12/19
L1936143-10	HVRA-LTB01-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 00:00	08/12/19
L1936143-11	HVRA-RB04-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 11:45	08/12/19
L1936143-12	HVRA-MW103-0.5	SOIL	WAPPINGERS FALLS, NY	08/12/19 11:50	08/12/19
L1936143-13	HVRA-MW103-2.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 12:00	08/12/19
L1936143-14	HVRA-RB05-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 12:10	08/12/19
L1936143-15	HVRA-MW104-0.5	SOIL	WAPPINGERS FALLS, NY	08/12/19 12:15	08/12/19
L1936143-16	HVRA-MW104-2.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 12:20	08/12/19
L1936143-17	HVRA-RB06-190812	WATER	WAPPINGERS FALLS, NY	08/12/19 12:30	08/12/19
L1936143-18	HVRA-MW105-0.5	SOIL	WAPPINGERS FALLS, NY	08/12/19 12:40	08/12/19
L1936143-19	HVRA-MW105-2.0	SOIL	WAPPINGERS FALLS, NY	08/12/19 12:46	08/12/19

Project Name:	HVRA	**Lab Number:**	L1936143
Project Number:	18.8090	**Report Date:**	08/26/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HVRA **Lab Number:** L1936143
Project Number: 18.8090 **Report Date:** 08/26/19

Case Narrative (continued)

Report Submission
August 26, 2019: This final report includes the results of all requested analyses.
August 22, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

1,4-Dioxane by 8270-SIM
The surrogate recovery for the WG1272498-2 LCS, associated with L1936143-02, is outside the acceptance criteria for 1,4-dioxane-d8 (114%). The LCS spike compounds are within overall method allowances; therefore, no further action was taken.

Perfluorinated Alkyl Acids by Isotope Dilution
L1936143-02, -05, -07, -08, -12, -15, -16, -18, -19 and WG1273984-2/-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.
L1936143-02: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.
The WG1275389-3 LCS/LCSD RPD, associated with L1936143-01, -03, -06, -09, -10, -11, -14 and -17, is above the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (41%).
The WG1273984-4 MS recovery, performed on L1936143-02, is outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Case Narrative (continued)

Total Metals

L1936143-02, -04,-05, -07, -08, -12, and -13: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Cyanide, Total

The WG1271656-2/-3 LCS/LCSD recoveries (62%/71%), associated with L1936143-02,-04,-05,-07,-08,-12, and -13, are outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Amita Naik

Title: Technical Director/Representative Date: 08/26/19

ORGANICS

VOLATILES

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45
Client ID: HVRA-MW100-1.0 Date Received: 08/12/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 10:14
Analyst: MV
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.4	2.0	1
1,1-Dichloroethane	ND		ug/kg	0.88	0.13	1
Chloroform	ND		ug/kg	1.3	0.12	1
Carbon tetrachloride	ND		ug/kg	0.88	0.20	1
1,2-Dichloropropane	ND		ug/kg	0.88	0.11	1
Dibromochloromethane	ND		ug/kg	0.88	0.12	1
1,1,2-Trichloroethane	ND		ug/kg	0.88	0.24	1
Tetrachloroethene	0.51		ug/kg	0.44	0.17	1
Chlorobenzene	ND		ug/kg	0.44	0.11	1
Trichlorofluoromethane	ND		ug/kg	3.5	0.61	1
1,2-Dichloroethane	ND		ug/kg	0.88	0.23	1
1,1,1-Trichloroethane	ND		ug/kg	0.44	0.15	1
Bromodichloromethane	ND		ug/kg	0.44	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.88	0.24	1
cis-1,3-Dichloropropene	ND		ug/kg	0.44	0.14	1
Bromoform	ND		ug/kg	3.5	0.22	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.44	0.15	1
Benzene	ND		ug/kg	0.44	0.15	1
Toluene	ND		ug/kg	0.88	0.48	1
Ethylbenzene	ND		ug/kg	0.88	0.12	1
Chloromethane	ND		ug/kg	3.5	0.82	1
Bromomethane	ND		ug/kg	1.8	0.51	1
Vinyl chloride	ND		ug/kg	0.88	0.30	1
Chloroethane	ND		ug/kg	1.8	0.40	1
1,1-Dichloroethene	ND		ug/kg	0.88	0.21	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	0.12	1
Trichloroethene	ND		ug/kg	0.44	0.12	1
1,2-Dichlorobenzene	ND		ug/kg	1.8	0.13	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45

Client ID: HVRA-MW100-1.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.8	0.13	1
1,4-Dichlorobenzene	ND		ug/kg	1.8	0.15	1
Methyl tert butyl ether	ND		ug/kg	1.8	0.18	1
p/m-Xylene	ND		ug/kg	1.8	0.49	1
o-Xylene	ND		ug/kg	0.88	0.26	1
cis-1,2-Dichloroethene	ND		ug/kg	0.88	0.15	1
Styrene	ND		ug/kg	0.88	0.17	1
Dichlorodifluoromethane	ND		ug/kg	8.8	0.80	1
Acetone	19		ug/kg	8.8	4.2	1
Carbon disulfide	ND		ug/kg	8.8	4.0	1
2-Butanone	ND		ug/kg	8.8	2.0	1
4-Methyl-2-pentanone	ND		ug/kg	8.8	1.1	1
2-Hexanone	ND		ug/kg	8.8	1.0	1
Bromochloromethane	ND		ug/kg	1.8	0.18	1
1,2-Dibromoethane	ND		ug/kg	0.88	0.24	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.6	0.88	1
Isopropylbenzene	ND		ug/kg	0.88	0.10	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.8	0.28	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.8	0.24	1
Methyl Acetate	54		ug/kg	3.5	0.84	1
Cyclohexane	ND		ug/kg	8.8	0.48	1
1,4-Dioxane	ND		ug/kg	70	31.	1
Freon-113	ND		ug/kg	3.5	0.61	1
Methyl cyclohexane	ND		ug/kg	3.5	0.53	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	103		70-130

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15
Client ID: HVRA-MW102-0.5 Date Received: 08/12/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 10:42
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.13	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.28	1
Tetrachloroethene	1.0		ug/kg	0.53	0.21	1
Chlorobenzene	ND		ug/kg	0.53	0.13	1
Trichlorofluoromethane	ND		ug/kg	4.2	0.74	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	0.18	1
Bromodichloromethane	ND		ug/kg	0.53	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.53	0.17	1
Bromoform	ND		ug/kg	4.2	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.53	0.18	1
Benzene	ND		ug/kg	0.53	0.18	1
Toluene	ND		ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.2	0.99	1
Bromomethane	ND		ug/kg	2.1	0.62	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.1	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.53	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15

Client ID: HVRA-MW102-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.18	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.97	1
Acetone	ND		ug/kg	11	5.1	1
Carbon disulfide	ND		ug/kg	11	4.8	1
2-Butanone	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
2-Hexanone	ND		ug/kg	11	1.2	1
Bromochloromethane	ND		ug/kg	2.1	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.34	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.29	1
Methyl Acetate	ND		ug/kg	4.2	1.0	1
Cyclohexane	ND		ug/kg	11	0.58	1
1,4-Dioxane	ND		ug/kg	85	37.	1
Freon-113	ND		ug/kg	4.2	0.74	1
Methyl cyclohexane	ND		ug/kg	4.2	0.64	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	104		70-130

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30
Client ID: HVRA-MW102-2.0 Date Received: 08/12/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 11:09
Analyst: MV
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.95	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.95	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.95	0.12	1
Dibromochloromethane	ND		ug/kg	0.95	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.95	0.25	1
Tetrachloroethene	0.35	J	ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.8	0.66	1
1,2-Dichloroethane	ND		ug/kg	0.95	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Bromodichloromethane	ND		ug/kg	0.48	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.95	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.48	0.15	1
Bromoform	ND		ug/kg	3.8	0.23	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.48	0.16	1
Benzene	ND		ug/kg	0.48	0.16	1
Toluene	ND		ug/kg	0.95	0.52	1
Ethylbenzene	ND		ug/kg	0.95	0.13	1
Chloromethane	ND		ug/kg	3.8	0.89	1
Bromomethane	ND		ug/kg	1.9	0.55	1
Vinyl chloride	ND		ug/kg	0.95	0.32	1
Chloroethane	ND		ug/kg	1.9	0.43	1
1,1-Dichloroethene	ND		ug/kg	0.95	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30

Client ID: HVRA-MW102-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.53	1
o-Xylene	ND		ug/kg	0.95	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	0.17	1
Styrene	ND		ug/kg	0.95	0.19	1
Dichlorodifluoromethane	ND		ug/kg	9.5	0.87	1
Acetone	ND		ug/kg	9.5	4.6	1
Carbon disulfide	ND		ug/kg	9.5	4.3	1
2-Butanone	ND		ug/kg	9.5	2.1	1
4-Methyl-2-pentanone	ND		ug/kg	9.5	1.2	1
2-Hexanone	ND		ug/kg	9.5	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.20	1
1,2-Dibromoethane	ND		ug/kg	0.95	0.26	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	0.95	1
Isopropylbenzene	ND		ug/kg	0.95	0.10	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.31	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
Methyl Acetate	ND		ug/kg	3.8	0.90	1
Cyclohexane	ND		ug/kg	9.5	0.52	1
1,4-Dioxane	ND		ug/kg	76	33.	1
Freon-113	ND		ug/kg	3.8	0.66	1
Methyl cyclohexane	ND		ug/kg	3.8	0.57	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	101		70-130

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50
Client ID: HVRA-MW103-0.5 Date Received: 08/12/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 11:36
Analyst: MV
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.8	3.1	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.20	1
Chloroform	ND		ug/kg	2.0	0.19	1
Carbon tetrachloride	ND		ug/kg	1.4	0.31	1
1,2-Dichloropropane	ND		ug/kg	1.4	0.17	1
Dibromochloromethane	ND		ug/kg	1.4	0.19	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	0.36	1
Tetrachloroethene	0.65	J	ug/kg	0.68	0.27	1
Chlorobenzene	ND		ug/kg	0.68	0.17	1
Trichlorofluoromethane	ND		ug/kg	5.4	0.95	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.35	1
1,1,1-Trichloroethane	ND		ug/kg	0.68	0.23	1
Bromodichloromethane	ND		ug/kg	0.68	0.15	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	0.37	1
cis-1,3-Dichloropropene	ND		ug/kg	0.68	0.22	1
Bromoform	ND		ug/kg	5.4	0.34	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.68	0.23	1
Benzene	ND		ug/kg	0.68	0.23	1
Toluene	ND		ug/kg	1.4	0.74	1
Ethylbenzene	ND		ug/kg	1.4	0.19	1
Chloromethane	ND		ug/kg	5.4	1.3	1
Bromomethane	ND		ug/kg	2.7	0.79	1
Vinyl chloride	ND		ug/kg	1.4	0.46	1
Chloroethane	ND		ug/kg	2.7	0.62	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.32	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.19	1
Trichloroethene	ND		ug/kg	0.68	0.19	1
1,2-Dichlorobenzene	ND		ug/kg	2.7	0.20	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50

Client ID: HVRA-MW103-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,4-Dichlorobenzene	ND		ug/kg	2.7	0.23	1
Methyl tert butyl ether	ND		ug/kg	2.7	0.27	1
p/m-Xylene	ND		ug/kg	2.7	0.76	1
o-Xylene	ND		ug/kg	1.4	0.40	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.24	1
Styrene	ND		ug/kg	1.4	0.27	1
Dichlorodifluoromethane	ND		ug/kg	14	1.2	1
Acetone	ND		ug/kg	14	6.6	1
Carbon disulfide	ND		ug/kg	14	6.2	1
2-Butanone	ND		ug/kg	14	3.0	1
4-Methyl-2-pentanone	ND		ug/kg	14	1.7	1
2-Hexanone	ND		ug/kg	14	1.6	1
Bromochloromethane	ND		ug/kg	2.7	0.28	1
1,2-Dibromoethane	ND		ug/kg	1.4	0.38	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.1	1.4	1
Isopropylbenzene	ND		ug/kg	1.4	0.15	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.7	0.44	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.7	0.37	1
Methyl Acetate	ND		ug/kg	5.4	1.3	1
Cyclohexane	ND		ug/kg	14	0.74	1
1,4-Dioxane	ND		ug/kg	110	48.	1
Freon-113	ND		ug/kg	5.4	0.94	1
Methyl cyclohexane	ND		ug/kg	5.4	0.82	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	100		70-130

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00
Client ID: HVRA-MW103-2.0 Date Received: 08/12/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/16/19 12:04
Analyst: MV
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.7	2.1	1
1,1-Dichloroethane	ND		ug/kg	0.94	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.94	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.94	0.12	1
Dibromochloromethane	ND		ug/kg	0.94	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.94	0.25	1
Tetrachloroethene	0.71		ug/kg	0.47	0.18	1
Chlorobenzene	ND		ug/kg	0.47	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.7	0.65	1
1,2-Dichloroethane	ND		ug/kg	0.94	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.47	0.16	1
Bromodichloromethane	ND		ug/kg	0.47	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.94	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.47	0.15	1
Bromoform	ND		ug/kg	3.7	0.23	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.47	0.16	1
Benzene	ND		ug/kg	0.47	0.16	1
Toluene	ND		ug/kg	0.94	0.51	1
Ethylbenzene	ND		ug/kg	0.94	0.13	1
Chloromethane	ND		ug/kg	3.7	0.87	1
Bromomethane	ND		ug/kg	1.9	0.54	1
Vinyl chloride	ND		ug/kg	0.94	0.31	1
Chloroethane	ND		ug/kg	1.9	0.42	1
1,1-Dichloroethene	ND		ug/kg	0.94	0.22	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.47	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.13	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00

Client ID: HVRA-MW103-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.52	1
o-Xylene	ND		ug/kg	0.94	0.27	1
cis-1,2-Dichloroethene	ND		ug/kg	0.94	0.16	1
Styrene	ND		ug/kg	0.94	0.18	1
Dichlorodifluoromethane	ND		ug/kg	9.4	0.86	1
Acetone	ND		ug/kg	9.4	4.5	1
Carbon disulfide	ND		ug/kg	9.4	4.3	1
2-Butanone	ND		ug/kg	9.4	2.1	1
4-Methyl-2-pentanone	ND		ug/kg	9.4	1.2	1
2-Hexanone	ND		ug/kg	9.4	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.19	1
1,2-Dibromoethane	ND		ug/kg	0.94	0.26	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	0.93	1
Isopropylbenzene	ND		ug/kg	0.94	0.10	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.30	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.25	1
Methyl Acetate	ND		ug/kg	3.7	0.89	1
Cyclohexane	ND		ug/kg	9.4	0.51	1
1,4-Dioxane	ND		ug/kg	75	33.	1
Freon-113	ND		ug/kg	3.7	0.65	1
Methyl cyclohexane	ND		ug/kg	3.7	0.56	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	102		70-130

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/16/19 06:35
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273356-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/16/19 06:35
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273356-5					
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Isopropylbenzene	ND		ug/kg	1.0	0.11
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
Methyl Acetate	ND		ug/kg	4.0	0.95
Cyclohexane	ND		ug/kg	10	0.54
1,4-Dioxane	ND		ug/kg	80	35.
Freon-113	ND		ug/kg	4.0	0.69
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/16/19 06:35
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273356-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273356-3 WG1273356-4								
Methylene chloride	88		86		70-130	2		30
1,1-Dichloroethane	98		93		70-130	5		30
Chloroform	95		93		70-130	2		30
Carbon tetrachloride	97		93		70-130	4		30
1,2-Dichloropropane	95		94		70-130	1		30
Dibromochloromethane	112		108		70-130	4		30
1,1,2-Trichloroethane	117		114		70-130	3		30
Tetrachloroethene	106		102		70-130	4		30
Chlorobenzene	106		103		70-130	3		30
Trichlorofluoromethane	99		92		70-139	7		30
1,2-Dichloroethane	102		101		70-130	1		30
1,1,1-Trichloroethane	99		95		70-130	4		30
Bromodichloromethane	100		98		70-130	2		30
trans-1,3-Dichloropropene	119		116		70-130	3		30
cis-1,3-Dichloropropene	101		98		70-130	3		30
Bromoform	111		113		70-130	2		30
1,1,2,2-Tetrachloroethane	117		116		70-130	1		30
Benzene	96		93		70-130	3		30
Toluene	113		108		70-130	5		30
Ethylbenzene	113		109		70-130	4		30
Chloromethane	96		90		52-130	6		30
Bromomethane	100		95		57-147	5		30
Vinyl chloride	107		104		67-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273356-3 WG1273356-4								
Chloroethane	100		93		50-151	7		30
1,1-Dichloroethene	135		128		65-135	5		30
trans-1,2-Dichloroethene	95		89		70-130	7		30
Trichloroethene	96		92		70-130	4		30
1,2-Dichlorobenzene	114		114		70-130	0		30
1,3-Dichlorobenzene	112		110		70-130	2		30
1,4-Dichlorobenzene	112		110		70-130	2		30
Methyl tert butyl ether	94		92		66-130	2		30
p/m-Xylene	114		111		70-130	3		30
o-Xylene	114		108		70-130	5		30
cis-1,2-Dichloroethene	94		91		70-130	3		30
Styrene	115		111		70-130	4		30
Dichlorodifluoromethane	96		92		30-146	4		30
Acetone	107		99		54-140	8		30
Carbon disulfide	**140**	Q	126		59-130	11		30
2-Butanone	98		99		70-130	1		30
4-Methyl-2-pentanone	104		102		70-130	2		30
2-Hexanone	101		100		70-130	1		30
Bromochloromethane	94		92		70-130	2		30
1,2-Dibromoethane	111		111		70-130	0		30
1,2-Dibromo-3-chloropropane	101		102		68-130	1		30
Isopropylbenzene	116		113		70-130	3		30
1,2,3-Trichlorobenzene	108		107		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273356-3 WG1273356-4								
1,2,4-Trichlorobenzene	108		106		70-130	2		30
Methyl Acetate	95		96		51-146	1		30
Cyclohexane	98		92		59-142	6		30
1,4-Dioxane	86		79		65-136	8		30
Freon-113	135		119		50-139	13		30
Methyl cyclohexane	89		86		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		108		70-130
Toluene-d8	113		113		70-130
4-Bromofluorobenzene	103		104		70-130
Dibromofluoromethane	99		97		70-130

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-01
Client ID: HVRA-RB01-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 15:29
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.82	0.372	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.82	0.361	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.217	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.82	0.299	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	0.343	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.82	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.277	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.591	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.894	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.529	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.339	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.298	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.226	1
PFOA/PFOS, Total	ND		ng/l	1.82	0.215	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-01 Date Collected: 08/12/19 09:30

Client ID: HVRA-RB01-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	57		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	59		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	77		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	30		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	76		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 06:09
Analyst: IM
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	48.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	31.	1
Fluoranthene	53	J	ug/kg	110	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	510	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	62.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	61.	1
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	38.	1
Benzo(a)anthracene	29	J	ug/kg	110	20.	1
Benzo(a)pyrene	ND		ug/kg	140	44.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45

Client ID: HVRA-MW100-1.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	42	J	ug/kg	110	30.	1
Benzo(k)fluoranthene	ND		ug/kg	110	29.	1
Chrysene	34	J	ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	140	28.	1
Anthracene	ND		ug/kg	110	35.	1
Benzo(ghi)perylene	29	J	ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	29	J	ug/kg	140	25.	1
Pyrene	47	J	ug/kg	110	18.	1
Biphenyl	ND		ug/kg	410	42.	1
4-Chloroaniline	ND		ug/kg	180	33.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	74.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	29.	1
2,4-Dimethylphenol	ND		ug/kg	180	59.	1
2-Nitrophenol	ND		ug/kg	390	67.	1
4-Nitrophenol	ND		ug/kg	250	73.	1
2,4-Dinitrophenol	ND		ug/kg	860	84.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	86.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Carbazole	ND		ug/kg	180	17.	1
Atrazine	ND		ug/kg	140	63.	1
Benzaldehyde	ND		ug/kg	240	48.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45

Client ID: HVRA-MW100-1.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	54.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	36.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		25-120
Phenol-d6	82		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	62		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/19 18:46
Analyst: MA
Percent Solids: 92%

Extraction Method: EPA 3570
Extraction Date: 08/14/19 22:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	8.58	2.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	109		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 05:48
Analyst: AJ
Percent Solids: 92%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.282	J	ug/kg	1.04	0.024	1
Perfluoropentanoic Acid (PFPeA)	0.767	J	ug/kg	1.04	0.048	1
Perfluorobutanesulfonic Acid (PFBS)	0.103	J	ug/kg	1.04	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.823	J	ug/kg	1.04	0.054	1
Perfluoroheptanoic Acid (PFHpA)	0.243	J	ug/kg	1.04	0.047	1
Perfluorohexanesulfonic Acid (PFHxS)	4.38		ug/kg	1.04	0.063	1
Perfluorooctanoic Acid (PFOA)	0.438	J	ug/kg	1.04	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	4.13		ug/kg	1.04	0.186	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.82		ug/kg	1.04	0.142	1
Perfluorononanoic Acid (PFNA)	0.152	J	ug/kg	1.04	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	369	E	ug/kg	1.04	0.135	1
Perfluorodecanoic Acid (PFDA)	1.37		ug/kg	1.04	0.070	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	42.6		ug/kg	1.04	0.298	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.04	0.209	1
Perfluoroundecanoic Acid (PFUnA)	0.254	J	ug/kg	1.04	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	1.04		ug/kg	1.04	0.159	1
Perfluorooctanesulfonamide (FOSA)	4.71		ug/kg	1.04	0.102	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.279	J	ug/kg	1.04	0.088	1
Perfluorododecanoic Acid (PFDoA)	0.238	J	ug/kg	1.04	0.073	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.04	0.212	1
Perfluorotetradecanoic Acid (PFTA)	0.237	J	ug/kg	1.04	0.056	1
PFOA/PFOS, Total	363	J	ug/kg	1.04	0.043	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45

Client ID: HVRA-MW100-1.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**295**	Q	70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**283**	Q	63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**265**	Q	32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	117		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**305**	Q	25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	117		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	89		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	109		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	121		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 D
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 14:56
Analyst: JW
Percent Solids: 92%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	363		ug/kg	5.18	0.674	5

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		65-151

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-03
Client ID: HVRA-RB02-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 15:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.375	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.89	0.311	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.652	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.477	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.928	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.549	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.761	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.235	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-03 Date Collected: 08/12/19 10:00

Client ID: HVRA-RB02-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	52		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	49		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 14:39
Analyst: MA
Percent Solids: 97%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.24	1.85	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	65		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 06:22
Analyst: AJ
Percent Solids: 97%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.072	J	ug/kg	1.02	0.023	1
Perfluoropentanoic Acid (PFPeA)	0.117	J	ug/kg	1.02	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.02	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.164	J	ug/kg	1.02	0.054	1
Perfluoroheptanoic Acid (PFHpA)	0.105	J	ug/kg	1.02	0.046	1
Perfluorohexanesulfonic Acid (PFHxS)	0.288	J	ug/kg	1.02	0.062	1
Perfluorooctanoic Acid (PFOA)	0.132	J	ug/kg	1.02	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.02	0.184	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.02	0.140	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.02	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	2.27		ug/kg	1.02	0.133	1
Perfluorodecanoic Acid (PFDA)	0.132	J	ug/kg	1.02	0.069	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.02	0.294	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.02	0.206	1
Perfluoroundecanoic Acid (PFUnA)	0.201	J	ug/kg	1.02	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.02	0.157	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.02	0.100	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.02	0.087	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.02	0.072	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.02	0.209	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.02	0.055	1
PFOA/PFOS, Total	2.40	J	ug/kg	1.02	0.043	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04 Date Collected: 08/12/19 10:20

Client ID: HVRA-MW101-1.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	70		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 15:03
Analyst: MA
Percent Solids: 87%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	9.00	2.30	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	80		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 06:57
Analyst: AJ
Percent Solids: 87%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.192	J	ug/kg	1.01	0.023	1
Perfluoropentanoic Acid (PFPeA)	0.509	J	ug/kg	1.01	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.01	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.263	J	ug/kg	1.01	0.053	1
Perfluoroheptanoic Acid (PFHpA)	0.260	J	ug/kg	1.01	0.046	1
Perfluorohexanesulfonic Acid (PFHxS)	0.239	J	ug/kg	1.01	0.061	1
Perfluorooctanoic Acid (PFOA)	0.451	J	ug/kg	1.01	0.042	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.01	0.182	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.01	0.138	1
Perfluorononanoic Acid (PFNA)	0.746	J	ug/kg	1.01	0.076	1
Perfluorooctanesulfonic Acid (PFOS)	11.3		ug/kg	1.01	0.132	1
Perfluorodecanoic Acid (PFDA)	0.156	J	ug/kg	1.01	0.068	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.01	0.291	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.01	0.204	1
Perfluoroundecanoic Acid (PFUnA)	0.071	J	ug/kg	1.01	0.047	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.01	0.155	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.01	0.099	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.01	0.086	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.01	0.071	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.01	0.207	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.01	0.055	1
PFOA/PFOS, Total	11.8	J	ug/kg	1.01	0.042	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05 Date Collected: 08/12/19 10:30

Client ID: HVRA-MW101-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	69		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	66		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**33**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	44		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**22**	Q	26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-06
Client ID: HVRA-RB03-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 16:03
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.01	0.410	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.01	0.398	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.01	0.239	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.01	0.329	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.01	0.226	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.01	0.378	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.01	0.237	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.01	1.34	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.01	0.691	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.01	0.313	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.01	0.506	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.01	0.305	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.01	1.22	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.01	0.651	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.01	0.261	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.01	0.984	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.01	0.582	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.01	0.807	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.01	0.373	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.01	0.328	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.01	0.249	1
PFOA/PFOS, Total	ND		ng/l	2.01	0.237	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-06 Date Collected: 08/12/19 11:00

Client ID: HVRA-RB03-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	48		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	54		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		33-143

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 04:28
Analyst: IM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	ND		ug/kg	110	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	510	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	61.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	ND		ug/kg	110	20.	1
Benzo(a)pyrene	ND		ug/kg	140	43.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15

Client ID: HVRA-MW102-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	110	30.	1
Benzo(k)fluoranthene	ND		ug/kg	110	28.	1
Chrysene	ND		ug/kg	110	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	110	35.	1
Benzo(ghi)perylene	ND		ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	25.	1
Pyrene	ND		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	74.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	59.	1
2-Nitrophenol	ND		ug/kg	380	67.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	850	83.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	85.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Carbazole	ND		ug/kg	180	17.	1
Atrazine	ND		ug/kg	140	62.	1
Benzaldehyde	63	J	ug/kg	230	48.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15

Client ID: HVRA-MW102-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	180	54.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	180	36.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	69		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 15:28
Analyst: MA
Percent Solids: 93%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.70	1.96	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	83		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 07:13
Analyst: AJ
Percent Solids: 93%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.176	J	ug/kg	0.975	0.022	1
Perfluoropentanoic Acid (PFPeA)	0.118	J	ug/kg	0.975	0.045	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.975	0.038	1
Perfluorohexanoic Acid (PFHxA)	0.137	J	ug/kg	0.975	0.051	1
Perfluoroheptanoic Acid (PFHpA)	0.174	J	ug/kg	0.975	0.044	1
Perfluorohexanesulfonic Acid (PFHxS)	0.172	J	ug/kg	0.975	0.059	1
Perfluorooctanoic Acid (PFOA)	0.415	J	ug/kg	0.975	0.041	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	0.975	0.175	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	0.975	0.133	1
Perfluorononanoic Acid (PFNA)	0.146	J	ug/kg	0.975	0.073	1
Perfluorooctanesulfonic Acid (PFOS)	1.29		ug/kg	0.975	0.127	1
Perfluorodecanoic Acid (PFDA)	0.089	J	ug/kg	0.975	0.065	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.975	0.280	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.975	0.196	1
Perfluoroundecanoic Acid (PFUnA)	0.080	J	ug/kg	0.975	0.046	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	0.975	0.149	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.975	0.096	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.975	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	0.975	0.068	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.975	0.199	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	0.975	0.053	1
PFOA/PFOS, Total	1.71	J	ug/kg	0.975	0.041	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15

Client ID: HVRA-MW102-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	64		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	73		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	123		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	70		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	71		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**29**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	40		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 03:38
Analyst: IM
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	170	35.	1
2,6-Dinitrotoluene	ND		ug/kg	170	30.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	60.	1
Butyl benzyl phthalate	ND		ug/kg	170	44.	1
Di-n-butylphthalate	ND		ug/kg	170	33.	1
Di-n-octylphthalate	ND		ug/kg	170	59.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	36.	1
Benzo(a)anthracene	ND		ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	42.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30

Client ID: HVRA-MW102-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	400	40.	1
4-Chloroaniline	ND		ug/kg	170	32.	1
2-Nitroaniline	ND		ug/kg	170	34.	1
3-Nitroaniline	ND		ug/kg	170	33.	1
4-Nitroaniline	ND		ug/kg	170	72.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	170	26.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	170	57.	1
2-Nitrophenol	ND		ug/kg	380	65.	1
4-Nitrophenol	ND		ug/kg	240	71.	1
2,4-Dinitrophenol	ND		ug/kg	840	81.	1
4,6-Dinitro-o-cresol	ND		ug/kg	450	84.	1
Pentachlorophenol	ND		ug/kg	140	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Carbazole	ND		ug/kg	170	17.	1
Atrazine	ND		ug/kg	140	61.	1
Benzaldehyde	ND		ug/kg	230	47.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30

Client ID: HVRA-MW102-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	170	53.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	170	35.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		25-120
Phenol-d6	88		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	73		30-120
2,4,6-Tribromophenol	83		10-136
4-Terphenyl-d14	67		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 15:54
Analyst: MA
Percent Solids: 94%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.53	1.92	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	81		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 07:30
Analyst: AJ
Percent Solids: 94%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.060	J	ug/kg	0.976	0.022	1
Perfluoropentanoic Acid (PFPeA)	0.045	J	ug/kg	0.976	0.045	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.976	0.038	1
Perfluorohexanoic Acid (PFHxA)	0.082	J	ug/kg	0.976	0.051	1
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	0.976	0.044	1
Perfluorohexanesulfonic Acid (PFHxS)	0.063	J	ug/kg	0.976	0.059	1
Perfluorooctanoic Acid (PFOA)	0.127	J	ug/kg	0.976	0.041	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	0.976	0.175	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	0.976	0.133	1
Perfluorononanoic Acid (PFNA)	ND		ug/kg	0.976	0.073	1
Perfluorooctanesulfonic Acid (PFOS)	0.213	J	ug/kg	0.976	0.127	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	0.976	0.065	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.976	0.280	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.976	0.197	1
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	0.976	0.046	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	0.976	0.149	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.976	0.096	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.976	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	0.976	0.068	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.976	0.200	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	0.976	0.053	1
PFOA/PFOS, Total	0.340	J	ug/kg	0.976	0.041	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30

Client ID: HVRA-MW102-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	77		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	5		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**28**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	43		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-09
Client ID: HVRA-FTB01-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 16:19
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.76	0.359	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.76	0.348	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.76	0.210	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.76	0.289	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.76	0.198	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.76	0.331	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.76	0.208	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.76	1.17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.76	0.606	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.76	0.275	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.76	0.444	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	0.268	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.76	1.07	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	0.570	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	0.229	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.76	0.863	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.76	0.510	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	0.708	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	0.327	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	0.288	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	0.218	1
PFOA/PFOS, Total	ND		ng/l	1.76	0.208	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-09 Date Collected: 08/12/19 12:50

Client ID: HVRA-FTB01-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	45		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	55		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-10
Client ID: HVRA-LTB01-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 00:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 16:36
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.364	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.354	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.212	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.293	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.201	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.336	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.614	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.278	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.450	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.271	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	1.08	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.578	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.232	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.875	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.518	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.718	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.332	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.292	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.221	1
PFOA/PFOS, Total	ND		ng/l	1.78	0.211	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-10 Date Collected: 08/12/19 00:00

Client ID: HVRA-LTB01-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	49		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	42		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-11
Client ID: HVRA-RB04-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/23/19 16:52
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.379	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.368	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.221	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	0.305	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.209	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.349	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.219	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.639	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.290	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	0.468	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.602	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.242	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.911	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.539	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.747	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.346	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230	1
PFOA/PFOS, Total	ND		ng/l	1.86	0.219	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-11 Date Collected: 08/12/19 11:45

Client ID: HVRA-RB04-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	38		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	39		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		33-143

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 04:53
Analyst: IM
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	200	26.	1
Hexachlorobenzene	ND		ug/kg	150	28.	1
Bis(2-chloroethyl)ether	ND		ug/kg	230	34.	1
2-Chloronaphthalene	ND		ug/kg	250	25.	1
3,3'-Dichlorobenzidine	ND		ug/kg	250	68.	1
2,4-Dinitrotoluene	ND		ug/kg	250	51.	1
2,6-Dinitrotoluene	ND		ug/kg	250	44.	1
Fluoranthene	39	J	ug/kg	150	29.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	250	27.	1
4-Bromophenyl phenyl ether	ND		ug/kg	250	39.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	300	43.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	270	25.	1
Hexachlorobutadiene	ND		ug/kg	250	37.	1
Hexachlorocyclopentadiene	ND		ug/kg	730	230	1
Hexachloroethane	ND		ug/kg	200	41.	1
Isophorone	ND		ug/kg	230	33.	1
Naphthalene	ND		ug/kg	250	31.	1
Nitrobenzene	ND		ug/kg	230	38.	1
NDPA/DPA	ND		ug/kg	200	29.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	250	39.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	250	88.	1
Butyl benzyl phthalate	ND		ug/kg	250	64.	1
Di-n-butylphthalate	ND		ug/kg	250	48.	1
Di-n-octylphthalate	ND		ug/kg	250	86.	1
Diethyl phthalate	ND		ug/kg	250	24.	1
Dimethyl phthalate	ND		ug/kg	250	53.	1
Benzo(a)anthracene	ND		ug/kg	150	29.	1
Benzo(a)pyrene	ND		ug/kg	200	62.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50

Client ID: HVRA-MW103-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	150	43.	1
Benzo(k)fluoranthene	ND		ug/kg	150	41.	1
Chrysene	ND		ug/kg	150	26.	1
Acenaphthylene	ND		ug/kg	200	39.	1
Anthracene	ND		ug/kg	150	50.	1
Benzo(ghi)perylene	ND		ug/kg	200	30.	1
Fluorene	ND		ug/kg	250	25.	1
Phenanthrene	ND		ug/kg	150	31.	1
Dibenzo(a,h)anthracene	ND		ug/kg	150	29.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	200	35.	1
Pyrene	33	J	ug/kg	150	25.	1
Biphenyl	ND		ug/kg	580	59.	1
4-Chloroaniline	ND		ug/kg	250	46.	1
2-Nitroaniline	ND		ug/kg	250	49.	1
3-Nitroaniline	ND		ug/kg	250	48.	1
4-Nitroaniline	ND		ug/kg	250	100	1
Dibenzofuran	ND		ug/kg	250	24.	1
2-Methylnaphthalene	ND		ug/kg	300	31.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	250	26.	1
Acetophenone	ND		ug/kg	250	31.	1
2,4,6-Trichlorophenol	ND		ug/kg	150	48.	1
p-Chloro-m-cresol	ND		ug/kg	250	38.	1
2-Chlorophenol	ND		ug/kg	250	30.	1
2,4-Dichlorophenol	ND		ug/kg	230	41.	1
2,4-Dimethylphenol	ND		ug/kg	250	84.	1
2-Nitrophenol	ND		ug/kg	550	96.	1
4-Nitrophenol	ND		ug/kg	360	100	1
2,4-Dinitrophenol	ND		ug/kg	1200	120	1
4,6-Dinitro-o-cresol	ND		ug/kg	660	120	1
Pentachlorophenol	ND		ug/kg	200	56.	1
Phenol	ND		ug/kg	250	38.	1
2-Methylphenol	ND		ug/kg	250	39.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	370	40.	1
2,4,5-Trichlorophenol	ND		ug/kg	250	49.	1
Carbazole	ND		ug/kg	250	25.	1
Atrazine	ND		ug/kg	200	89.	1
Benzaldehyde	290	J	ug/kg	340	69.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50

Client ID: HVRA-MW103-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	250	77.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	250	51.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	72		10-136
4-Terphenyl-d14	58		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 16:20
Analyst: MA
Percent Solids: 65%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	10.3	2.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	82		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 07:47
Analyst: AJ
Percent Solids: 65%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.252	J	ug/kg	1.47	0.033	1
Perfluoropentanoic Acid (PFPeA)	0.178	J	ug/kg	1.47	0.068	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.47	0.057	1
Perfluorohexanoic Acid (PFHxA)	0.244	J	ug/kg	1.47	0.077	1
Perfluoroheptanoic Acid (PFHpA)	0.250	J	ug/kg	1.47	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.47	0.089	1
Perfluorooctanoic Acid (PFOA)	0.850	J	ug/kg	1.47	0.062	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.47	0.264	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.47	0.201	1
Perfluorononanoic Acid (PFNA)	0.391	J	ug/kg	1.47	0.110	1
Perfluorooctanesulfonic Acid (PFOS)	0.958	J	ug/kg	1.47	0.191	1
Perfluorodecanoic Acid (PFDA)	0.140	J	ug/kg	1.47	0.099	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.47	0.422	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.47	0.296	1
Perfluoroundecanoic Acid (PFUnA)	0.200	J	ug/kg	1.47	0.069	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.47	0.225	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.47	0.144	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.47	0.124	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.47	0.103	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.47	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.47	0.079	1
PFOA/PFOS, Total	1.81	J	ug/kg	1.47	0.062	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50

Client ID: HVRA-MW103-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	61		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**44**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		26-160

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/19 04:03
Analyst: IM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	34	J	ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00

Client ID: HVRA-MW103-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	31	J	ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	44.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	220	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	400	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	900	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Carbazole	ND		ug/kg	190	18.	1
Atrazine	ND		ug/kg	150	66.	1
Benzaldehyde	140	J	ug/kg	250	51.	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00

Client ID: HVRA-MW103-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Caprolactam	ND		ug/kg	190	57.	1
2,3,4,6-Tetrachlorophenol	ND		ug/kg	190	38.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		25-120
Phenol-d6	70		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	61		18-120

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 16:45
Analyst: MA
Percent Solids: 87%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.67	1.96	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	82		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 08:04
Analyst: AJ
Percent Solids: 87%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.093	J	ug/kg	1.02	0.023	1
Perfluoropentanoic Acid (PFPeA)	0.089	J	ug/kg	1.02	0.047	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.02	0.040	1
Perfluorohexanoic Acid (PFHxA)	0.144	J	ug/kg	1.02	0.053	1
Perfluoroheptanoic Acid (PFHpA)	0.085	J	ug/kg	1.02	0.046	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.02	0.062	1
Perfluorooctanoic Acid (PFOA)	0.570	J	ug/kg	1.02	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.02	0.182	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.02	0.139	1
Perfluorononanoic Acid (PFNA)	0.239	J	ug/kg	1.02	0.076	1
Perfluorooctanesulfonic Acid (PFOS)	0.550	J	ug/kg	1.02	0.132	1
Perfluorodecanoic Acid (PFDA)	0.075	J	ug/kg	1.02	0.068	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.02	0.292	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.02	0.205	1
Perfluoroundecanoic Acid (PFUnA)	0.053	J	ug/kg	1.02	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.02	0.155	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.02	0.100	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.02	0.086	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.02	0.071	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.02	0.208	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.02	0.055	1
PFOA/PFOS, Total	1.12	J	ug/kg	1.02	0.043	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00

Client ID: HVRA-MW103-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	64		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	45		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	37		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-14
Client ID: HVRA-RB05-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:10
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/26/19 12:32
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.95	0.398	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.95	0.387	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.95	0.232	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.95	0.320	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.95	0.220	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.95	0.367	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.95	0.230	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.95	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.95	0.672	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.95	0.305	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.95	0.492	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.95	0.297	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.95	1.18	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.95	0.633	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.95	0.254	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.95	0.957	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.95	0.566	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.95	0.785	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.95	0.363	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.95	0.320	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.95	0.242	1
PFOA/PFOS, Total	ND		ng/l	1.95	0.230	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-14 Date Collected: 08/12/19 12:10

Client ID: HVRA-RB05-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	45		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	105		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-15
Client ID: HVRA-MW104-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 17:10
Analyst: MA
Percent Solids: 93%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.56	1.93	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	83		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-15
Client ID: HVRA-MW104-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 08:21
Analyst: AJ
Percent Solids: 93%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.934	J	ug/kg	1.04	0.024	1
Perfluoropentanoic Acid (PFPeA)	0.954	J	ug/kg	1.04	0.048	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.04	0.041	1
Perfluorohexanoic Acid (PFHxA)	1.91		ug/kg	1.04	0.055	1
Perfluoroheptanoic Acid (PFHpA)	0.431	J	ug/kg	1.04	0.047	1
Perfluorohexanesulfonic Acid (PFHxS)	16.6		ug/kg	1.04	0.063	1
Perfluorooctanoic Acid (PFOA)	2.42		ug/kg	1.04	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.441	J	ug/kg	1.04	0.187	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.428	J	ug/kg	1.04	0.142	1
Perfluorononanoic Acid (PFNA)	1.43		ug/kg	1.04	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	129		ug/kg	1.04	0.136	1
Perfluorodecanoic Acid (PFDA)	0.174	J	ug/kg	1.04	0.070	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.04	0.300	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.04	0.210	1
Perfluoroundecanoic Acid (PFUnA)	0.318	J	ug/kg	1.04	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	2.89		ug/kg	1.04	0.160	1
Perfluorooctanesulfonamide (FOSA)	6.47		ug/kg	1.04	0.102	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.04	0.088	1
Perfluorododecanoic Acid (PFDoA)	0.128	J	ug/kg	1.04	0.073	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.04	0.214	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.04	0.056	1
PFOA/PFOS, Total	131		ug/kg	1.04	0.044	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-15 Date Collected: 08/12/19 12:15

Client ID: HVRA-MW104-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**192**	Q	70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**188**	Q	63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	137		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	148		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	145		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**44**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	86		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-16
Client ID: HVRA-MW104-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 17:35
Analyst: MA
Percent Solids: 94%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	7.43	1.89	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	81		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-16
Client ID: HVRA-MW104-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 22:55
Analyst: AJ
Percent Solids: 94%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.268	J	ug/kg	1.06	0.024	1
Perfluoropentanoic Acid (PFPeA)	0.335	J	ug/kg	1.06	0.049	1
Perfluorobutanesulfonic Acid (PFBS)	0.111	J	ug/kg	1.06	0.041	1
Perfluorohexanoic Acid (PFHxA)	0.795	J	ug/kg	1.06	0.056	1
Perfluoroheptanoic Acid (PFHpA)	0.143	J	ug/kg	1.06	0.048	1
Perfluorohexanesulfonic Acid (PFHxS)	12.1		ug/kg	1.06	0.064	1
Perfluorooctanoic Acid (PFOA)	0.688	J	ug/kg	1.06	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.06	0.190	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.516	J	ug/kg	1.06	0.144	1
Perfluorononanoic Acid (PFNA)	0.398	J	ug/kg	1.06	0.079	1
Perfluorooctanesulfonic Acid (PFOS)	109		ug/kg	1.06	0.137	1
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.06	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.06	0.303	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.06	0.213	1
Perfluoroundecanoic Acid (PFUnA)	0.081	J	ug/kg	1.06	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	0.730	J	ug/kg	1.06	0.162	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.06	0.104	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.06	0.089	1
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.06	0.074	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.06	0.216	1
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.06	0.057	1
PFOA/PFOS, Total	110	J	ug/kg	1.06	0.044	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-16 Date Collected: 08/12/19 12:20

Client ID: HVRA-MW104-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	147		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	69		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	50		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**36**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**41**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	122		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-17
Client ID: HVRA-RB06-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/26/19 12:49
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.91	0.389	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.91	0.378	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.91	0.227	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.91	0.313	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.91	0.215	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.91	0.359	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.91	0.225	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.91	1.27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.91	0.656	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.91	0.298	1
Perfluorooctanesulfonic Acid (PFOS)	0.542	J	ng/l	1.91	0.481	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.91	0.290	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.91	1.16	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.91	0.618	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.91	0.248	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.91	0.935	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.91	0.553	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.91	0.767	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.91	0.355	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.91	0.312	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.91	0.237	1
PFOA/PFOS, Total	0.542	J	ng/l	1.91	0.225	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-17 Date Collected: 08/12/19 12:30

Client ID: HVRA-RB06-190812 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	41		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	49		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-18
Client ID: HVRA-MW105-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:40
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 18:00
Analyst: MA
Percent Solids: 69%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	10.8	2.76	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	79		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-18
Client ID: HVRA-MW105-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:40
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 23:12
Analyst: AJ
Percent Solids: 69%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.46		ug/kg	1.45	0.033	1
Perfluoropentanoic Acid (PFPeA)	2.00		ug/kg	1.45	0.067	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.45	0.057	1
Perfluorohexanoic Acid (PFHxA)	0.964	J	ug/kg	1.45	0.076	1
Perfluoroheptanoic Acid (PFHpA)	0.304	J	ug/kg	1.45	0.065	1
Perfluorohexanesulfonic Acid (PFHxS)	6.16		ug/kg	1.45	0.088	1
Perfluorooctanoic Acid (PFOA)	1.10	J	ug/kg	1.45	0.061	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.45	0.260	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.45	0.198	1
Perfluorononanoic Acid (PFNA)	0.878	J	ug/kg	1.45	0.109	1
Perfluorooctanesulfonic Acid (PFOS)	89.5		ug/kg	1.45	0.188	1
Perfluorodecanoic Acid (PFDA)	0.953	J	ug/kg	1.45	0.097	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.45	0.416	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.45	0.292	1
Perfluoroundecanoic Acid (PFUnA)	0.648	J	ug/kg	1.45	0.068	1
Perfluorodecanesulfonic Acid (PFDS)	2.47		ug/kg	1.45	0.222	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.45	0.142	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.262	J	ug/kg	1.45	0.122	1
Perfluorododecanoic Acid (PFDoA)	0.492	J	ug/kg	1.45	0.102	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.45	0.297	1
Perfluorotetradecanoic Acid (PFTA)	0.137	J	ug/kg	1.45	0.078	1
PFOA/PFOS, Total	90.6	J	ug/kg	1.45	0.061	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-18 Date Collected: 08/12/19 12:40

Client ID: HVRA-MW105-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	77		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	42		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	49		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**40**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**40**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-19
Client ID: HVRA-MW105-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:46
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 08/23/19 18:25
Analyst: MA
Percent Solids: 94%

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/kg	8.24	2.10	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	85		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-19
Client ID: HVRA-MW105-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:46
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 122,537(M)
Analytical Date: 08/21/19 23:29
Analyst: AJ
Percent Solids: 94%

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.807	J	ug/kg	0.953	0.022	1
Perfluoropentanoic Acid (PFPeA)	1.34		ug/kg	0.953	0.044	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	0.953	0.037	1
Perfluorohexanoic Acid (PFHxA)	0.723	J	ug/kg	0.953	0.050	1
Perfluoroheptanoic Acid (PFHpA)	0.185	J	ug/kg	0.953	0.043	1
Perfluorohexanesulfonic Acid (PFHxS)	5.57		ug/kg	0.953	0.058	1
Perfluorooctanoic Acid (PFOA)	0.648	J	ug/kg	0.953	0.040	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	0.953	0.171	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.223	J	ug/kg	0.953	0.130	1
Perfluorononanoic Acid (PFNA)	0.838	J	ug/kg	0.953	0.072	1
Perfluorooctanesulfonic Acid (PFOS)	113		ug/kg	0.953	0.124	1
Perfluorodecanoic Acid (PFDA)	0.529	J	ug/kg	0.953	0.064	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	0.953	0.274	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	0.953	0.192	1
Perfluoroundecanoic Acid (PFUnA)	0.519	J	ug/kg	0.953	0.045	1
Perfluorodecanesulfonic Acid (PFDS)	0.796	J	ug/kg	0.953	0.146	1
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	0.953	0.093	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	0.953	0.081	1
Perfluorododecanoic Acid (PFDoA)	0.279	J	ug/kg	0.953	0.067	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	0.953	0.195	1
Perfluorotetradecanoic Acid (PFTA)	0.071	J	ug/kg	0.953	0.052	1
PFOA/PFOS, Total	114	J	ug/kg	0.953	0.040	1

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-19 Date Collected: 08/12/19 12:46

Client ID: HVRA-MW105-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**49**	Q	60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**59**	Q	65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**57**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**57**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	63		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**25**	Q	32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	64		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**57**	Q	65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	33		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**15**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**16**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	31		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/19 16:24
Analyst: MA

Extraction Method: EPA 3570
Extraction Date: 08/14/19 22:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 02 Batch: WG1272498-1					
1,4-Dioxane	ND		ug/kg	8.00	2.04

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/22/19 12:31
Analyst: MA

Extraction Method: EPA 3570
Extraction Date: 08/15/19 09:43

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 04-05,07-08,12-13,15-16,18-19 Batch: WG1272650-1					
1,4-Dioxane	ND		ug/kg	8.00	2.04

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	82		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/19/19 23:02
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273741-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	22.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	26.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/19/19 23:02
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273741-1					
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	25.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	27.
2,4-Dimethylphenol	ND		ug/kg	160	55.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	68.
2,4-Dinitrophenol	ND		ug/kg	800	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	80.
Pentachlorophenol	ND		ug/kg	130	36.

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/19/19 23:02
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 08/18/19 00:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,07-08,12-13 Batch: WG1273741-1					
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Carbazole	ND		ug/kg	160	16.
Atrazine	ND		ug/kg	130	58.
Benzaldehyde	ND		ug/kg	220	45.
Caprolactam	ND		ug/kg	160	50.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	33.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	95		25-120
Phenol-d6	98		10-120
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	89		10-136
4-Terphenyl-d14	88		18-120

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/21/19 04:23
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,04-05,07-08,12-13,15-16,18-19 Batch: WG1273984-1					
Perfluorobutanoic Acid (PFBA)	0.092	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/21/19 04:23
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,04-05,07-08,12-13,15-16,18-19 Batch: WG1273984-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	84		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	101		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	100		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	103		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	99		26-160

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/23/19 17:09
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,03,06,09-11,14,17 Batch: WG1275389-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/23/19 17:09
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,03,06,09-11,14,17 Batch: WG1275389-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	45		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	43		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02 Batch: WG1272498-2 WG1272498-3								
1,4-Dioxane	97		101		40-140	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	**114**	Q	108		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 04-05,07-08,12-13,15-16,18-19		Batch: WG1272650-2 WG1272650-3					
1,4-Dioxane	103		106		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	88		87		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273741-2 WG1273741-3								
Acenaphthene	69		76		31-137	10		50
Hexachlorobenzene	71		79		40-140	11		50
Bis(2-chloroethyl)ether	74		78		40-140	5		50
2-Chloronaphthalene	68		74		40-140	8		50
3,3'-Dichlorobenzidine	67		74		40-140	10		50
2,4-Dinitrotoluene	83		90		40-132	8		50
2,6-Dinitrotoluene	81		87		40-140	7		50
Fluoranthene	72		78		40-140	8		50
4-Chlorophenyl phenyl ether	69		74		40-140	7		50
4-Bromophenyl phenyl ether	73		77		40-140	5		50
Bis(2-chloroisopropyl)ether	57		61		40-140	7		50
Bis(2-chloroethoxy)methane	73		82		40-117	12		50
Hexachlorobutadiene	66		71		40-140	7		50
Hexachlorocyclopentadiene	61		70		40-140	14		50
Hexachloroethane	71		76		40-140	7		50
Isophorone	79		86		40-140	8		50
Naphthalene	69		76		40-140	10		50
Nitrobenzene	76		81		40-140	6		50
NDPA/DPA	74		80		36-157	8		50
n-Nitrosodi-n-propylamine	79		86		32-121	8		50
Bis(2-ethylhexyl)phthalate	83		93		40-140	11		50
Butyl benzyl phthalate	84		93		40-140	10		50
Di-n-butylphthalate	86		93		40-140	8		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273741-2 WG1273741-3								
Di-n-octylphthalate	92		102		40-140	10		50
Diethyl phthalate	76		81		40-140	6		50
Dimethyl phthalate	72		80		40-140	11		50
Benzo(a)anthracene	75		84		40-140	11		50
Benzo(a)pyrene	65		73		40-140	12		50
Benzo(b)fluoranthene	70		78		40-140	11		50
Benzo(k)fluoranthene	67		77		40-140	14		50
Chrysene	68		75		40-140	10		50
Acenaphthylene	71		78		40-140	9		50
Anthracene	75		82		40-140	9		50
Benzo(ghi)perylene	76		84		40-140	10		50
Fluorene	72		79		40-140	9		50
Phenanthrene	70		77		40-140	10		50
Dibenzo(a,h)anthracene	79		88		40-140	11		50
Indeno(1,2,3-cd)pyrene	76		85		40-140	11		50
Pyrene	69		77		35-142	11		50
Biphenyl	72		80		37-127	11		50
4-Chloroaniline	56		64		40-140	13		50
2-Nitroaniline	82		88		47-134	7		50
3-Nitroaniline	66		69		26-129	4		50
4-Nitroaniline	71		76		41-125	7		50
Dibenzofuran	73		79		40-140	8		50
2-Methylnaphthalene	69		77		40-140	11		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273741-2 WG1273741-3								
1,2,4,5-Tetrachlorobenzene	71		78		40-117	9		50
Acetophenone	78		84		14-144	7		50
2,4,6-Trichlorophenol	75		83		30-130	10		50
p-Chloro-m-cresol	81		89		26-103	9		50
2-Chlorophenol	79		85		25-102	7		50
2,4-Dichlorophenol	78		86		30-130	10		50
2,4-Dimethylphenol	78		87		30-130	11		50
2-Nitrophenol	81		88		30-130	8		50
4-Nitrophenol	84		90		11-114	7		50
2,4-Dinitrophenol	74		78		4-130	5		50
4,6-Dinitro-o-cresol	91		96		10-130	5		50
Pentachlorophenol	73		78		17-109	7		50
Phenol	71		84		26-90	17		50
2-Methylphenol	81		90		30-130.	11		50
3-Methylphenol/4-Methylphenol	79		88		30-130	11		50
2,4,5-Trichlorophenol	80		89		30-130	11		50
Carbazole	75		83		54-128	10		50
Atrazine	84		88		40-140	5		50
Benzaldehyde	80		80		40-140	0		50
Caprolactam	76		82		15-130	8		50
2,3,4,6-Tetrachlorophenol	75		80		40-140	6		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273741-2 WG1273741-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		78		25-120
Phenol-d6	77		84		10-120
Nitrobenzene-d5	74		78		23-120
2-Fluorobiphenyl	64		70		30-120
2,4,6-Tribromophenol	73		78		10-136
4-Terphenyl-d14	67		72		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19		Batch: WG1273984-2 WG1273984-3					
Perfluorobutanoic Acid (PFBA)	108		107		71-135	1		30
Perfluoropentanoic Acid (PFPeA)	108		107		69-132	1		30
Perfluorobutanesulfonic Acid (PFBS)	109		109		72-128	0		30
Perfluorohexanoic Acid (PFHxA)	108		108		70-132	0		30
Perfluoroheptanoic Acid (PFHpA)	108		108		71-131	0		30
Perfluorohexanesulfonic Acid (PFHxS)	106		105		67-130	1		30
Perfluorooctanoic Acid (PFOA)	107		105		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	128		115		64-140	11		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		111		70-132	4		30
Perfluorononanoic Acid (PFNA)	108		103		72-129	5		30
Perfluorooctanesulfonic Acid (PFOS)	113		114		68-136	1		30
Perfluorodecanoic Acid (PFDA)	109		108		69-133	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91		108		65-137	17		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	108		132		63-144	20		30
Perfluoroundecanoic Acid (PFUnA)	104		105		64-136	1		30
Perfluorodecanesulfonic Acid (PFDS)	119		125		59-134	5		30
Perfluorooctanesulfonamide (FOSA)	112		93		67-137	19		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		109		61-139	2		30
Perfluorododecanoic Acid (PFDoA)	110		108		69-135	2		30
Perfluorotridecanoic Acid (PFTrDA)	103		100		66-139	3		30
Perfluorotetradecanoic Acid (PFTA)	116		114		69-133	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 Batch: WG1273984-2 WG1273984-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		83		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		87		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		80		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		81		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		80		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		91		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		85		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	37		35		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		89		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		86		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		84		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		43		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		65		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		81		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		4		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		61		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		78		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		63		26-160

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,06,09-11,14,17 Batch: WG1275389-2 WG1275389-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorobutanoic Acid (PFBA)	104		103		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	106		104		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	108		104		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	105		104		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	107		106		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	108		109		69-177	1		30
Perfluorooctanoic Acid (PFOA)	104		102		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		97		49-187	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	107		107		61-179	0		30
Perfluorononanoic Acid (PFNA)	103		103		68-171	0		30
Perfluorooctanesulfonic Acid (PFOS)	110		109		52-151	1		30
Perfluorodecanoic Acid (PFDA)	107		104		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	123		81		56-173	**41**	Q	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		98		60-166	9		30
Perfluoroundecanoic Acid (PFUnA)	104		101		60-153	3		30
Perfluorodecanesulfonic Acid (PFDS)	95		113		38-156	17		30
Perfluorooctanesulfonamide (FOSA)	110		111		46-170	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	113		109		45-170	4		30
Perfluorododecanoic Acid (PFDoA)	108		109		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	98		98		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	112		112		59-182	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,06,09-11,14,17 Batch: WG1275389-2 WG1275389-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		97		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		93		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		93		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	43		43		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		95		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		84		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	39		44		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		82		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		41		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		66		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		71		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 08/26/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 QC Batch ID: WG1273984-4 QC Sample: L1936143-02 Client ID: HVRA-MW100-1.0												
Perfluorooctanesulfonic Acid (PFOS)	363	4.71	362	**0**	Q	-	-		68-136	-		30

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90				65-151

Lab Duplicate Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 QC Batch ID: WG1273984-5 QC Sample: L1936143-04 Client ID: HVRA-MW101-1.5						
Perfluorobutanoic Acid (PFBA)	0.072J	0.065J	ug/kg	NC		30
Perfluoropentanoic Acid (PFPeA)	0.117J	0.128J	ug/kg	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ug/kg	NC		30
Perfluorohexanoic Acid (PFHxA)	0.164J	0.158J	ug/kg	NC		30
Perfluoroheptanoic Acid (PFHpA)	0.105J	0.077J	ug/kg	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	0.288J	0.318J	ug/kg	NC		30
Perfluorooctanoic Acid (PFOA)	0.132J	0.158J	ug/kg	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ug/kg	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ug/kg	NC		30
Perfluorononanoic Acid (PFNA)	ND	0.109J	ug/kg	NC		30
Perfluorooctanesulfonic Acid (PFOS)	2.27	2.34	ug/kg	3		30
Perfluorodecanoic Acid (PFDA)	0.132J	0.182J	ug/kg	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ug/kg	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ug/kg	NC		30
Perfluoroundecanoic Acid (PFUnA)	0.201J	0.261J	ug/kg	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ug/kg	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ug/kg	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ug/kg	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	0.075J	ug/kg	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ug/kg	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 QC Batch ID: WG1273984-5 QC Sample: L1936143-04 Client ID: HVRA-MW101-1.5						
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ug/kg	NC		30
PFOA/PFOS, Total	2.40J	2.50J	ug/kg	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	77		83		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		94		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		109		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		86		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		91		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		109		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		88		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		90		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		95		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		96		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		98		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	70		78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		78		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		104		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		89		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		98		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		91		26-160

PCBS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 10:51
Analyst: JW
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.9	3.10	1	A
Aroclor 1221	ND		ug/kg	34.9	3.50	1	A
Aroclor 1232	ND		ug/kg	34.9	7.39	1	A
Aroclor 1242	ND		ug/kg	34.9	4.70	1	A
Aroclor 1248	ND		ug/kg	34.9	5.23	1	A
Aroclor 1254	ND		ug/kg	34.9	3.82	1	A
Aroclor 1260	ND		ug/kg	34.9	6.45	1	A
Aroclor 1262	ND		ug/kg	34.9	4.43	1	A
Aroclor 1268	ND		ug/kg	34.9	3.61	1	A
PCBs, Total	ND		ug/kg	34.9	3.10	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	88		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 01:03
Analyst: WR
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.9	3.01	1	A
Aroclor 1221	ND		ug/kg	33.9	3.40	1	A
Aroclor 1232	ND		ug/kg	33.9	7.19	1	A
Aroclor 1242	ND		ug/kg	33.9	4.57	1	A
Aroclor 1248	ND		ug/kg	33.9	5.08	1	A
Aroclor 1254	ND		ug/kg	33.9	3.71	1	A
Aroclor 1260	ND		ug/kg	33.9	6.26	1	A
Aroclor 1262	ND		ug/kg	33.9	4.31	1	A
Aroclor 1268	ND		ug/kg	33.9	3.51	1	A
PCBs, Total	ND		ug/kg	33.9	3.01	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 10:39
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.2	3.21	1	A
Aroclor 1221	ND		ug/kg	36.2	3.63	1	A
Aroclor 1232	ND		ug/kg	36.2	7.67	1	A
Aroclor 1242	ND		ug/kg	36.2	4.88	1	A
Aroclor 1248	ND		ug/kg	36.2	5.43	1	A
Aroclor 1254	ND		ug/kg	36.2	3.96	1	A
Aroclor 1260	ND		ug/kg	36.2	6.69	1	A
Aroclor 1262	ND		ug/kg	36.2	4.60	1	A
Aroclor 1268	ND		ug/kg	36.2	3.75	1	A
PCBs, Total	ND		ug/kg	36.2	3.21	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 11:03
Analyst: JW
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.6	3.16	1	A
Aroclor 1221	ND		ug/kg	35.6	3.56	1	A
Aroclor 1232	ND		ug/kg	35.6	7.54	1	A
Aroclor 1242	ND		ug/kg	35.6	4.80	1	A
Aroclor 1248	ND		ug/kg	35.6	5.34	1	A
Aroclor 1254	ND		ug/kg	35.6	3.89	1	A
Aroclor 1260	ND		ug/kg	35.6	6.58	1	A
Aroclor 1262	ND		ug/kg	35.6	4.52	1	A
Aroclor 1268	ND		ug/kg	35.6	3.69	1	A
PCBs, Total	ND		ug/kg	35.6	3.16	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 11:16
Analyst: JW
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.2	3.13	1	A
Aroclor 1221	ND		ug/kg	35.2	3.53	1	A
Aroclor 1232	ND		ug/kg	35.2	7.46	1	A
Aroclor 1242	ND		ug/kg	35.2	4.75	1	A
Aroclor 1248	ND		ug/kg	35.2	5.28	1	A
Aroclor 1254	ND		ug/kg	35.2	3.85	1	A
Aroclor 1260	ND		ug/kg	35.2	6.51	1	A
Aroclor 1262	ND		ug/kg	35.2	4.47	1	A
Aroclor 1268	ND		ug/kg	35.2	3.65	1	A
PCBs, Total	ND		ug/kg	35.2	3.13	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 11:28
Analyst: JW
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	50.4	4.48	1	A
Aroclor 1221	ND		ug/kg	50.4	5.05	1	A
Aroclor 1232	ND		ug/kg	50.4	10.7	1	A
Aroclor 1242	ND		ug/kg	50.4	6.80	1	A
Aroclor 1248	ND		ug/kg	50.4	7.56	1	A
Aroclor 1254	ND		ug/kg	50.4	5.52	1	A
Aroclor 1260	ND		ug/kg	50.4	9.32	1	A
Aroclor 1262	ND		ug/kg	50.4	6.40	1	A
Aroclor 1268	ND		ug/kg	50.4	5.22	1	A
PCBs, Total	ND		ug/kg	50.4	4.48	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 08/20/19 11:40
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.6	3.34	1	A
Aroclor 1221	ND		ug/kg	37.6	3.77	1	A
Aroclor 1232	ND		ug/kg	37.6	7.98	1	A
Aroclor 1242	ND		ug/kg	37.6	5.07	1	A
Aroclor 1248	ND		ug/kg	37.6	5.65	1	A
Aroclor 1254	ND		ug/kg	37.6	4.12	1	A
Aroclor 1260	ND		ug/kg	37.6	6.96	1	A
Aroclor 1262	ND		ug/kg	37.6	4.78	1	A
Aroclor 1268	ND		ug/kg	37.6	3.90	1	A
PCBs, Total	ND		ug/kg	37.6	3.34	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/20/19 01:15
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 08/17/19 21:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1273727-1						
Aroclor 1016	ND		ug/kg	33.1	2.94	A
Aroclor 1221	ND		ug/kg	33.1	3.31	A
Aroclor 1232	ND		ug/kg	33.1	7.01	A
Aroclor 1242	ND		ug/kg	33.1	4.46	A
Aroclor 1248	ND		ug/kg	33.1	4.96	A
Aroclor 1254	ND		ug/kg	33.1	3.62	A
Aroclor 1260	ND		ug/kg	33.1	6.11	A
Aroclor 1262	ND		ug/kg	33.1	4.20	A
Aroclor 1268	ND		ug/kg	33.1	3.42	A
PCBs, Total	ND		ug/kg	33.1	2.94	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	75		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1273727-2 WG1273727-3									
Aroclor 1016	90		76		40-140	17		50	A
Aroclor 1260	74		62		40-140	18		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		72		30-150	A
Decachlorobiphenyl	63		53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		71		30-150	B
Decachlorobiphenyl	82		69		30-150	B

PESTICIDES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 02:51
Analyst: BM
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.71	0.335	1	A
Lindane	ND		ug/kg	0.713	0.319	1	A
Alpha-BHC	ND		ug/kg	0.713	0.202	1	A
Beta-BHC	ND		ug/kg	1.71	0.649	1	A
Heptachlor	ND		ug/kg	0.856	0.384	1	A
Aldrin	ND		ug/kg	1.71	0.603	1	A
Heptachlor epoxide	ND		ug/kg	3.21	0.963	1	A
Endrin	ND		ug/kg	0.713	0.292	1	A
Endrin aldehyde	ND		ug/kg	2.14	0.749	1	A
Endrin ketone	ND		ug/kg	1.71	0.441	1	A
Dieldrin	ND		ug/kg	1.07	0.535	1	A
4,4'-DDE	1.32	J	ug/kg	1.71	0.396	1	B
4,4'-DDD	ND		ug/kg	1.71	0.610	1	A
4,4'-DDT	1.46	J	ug/kg	3.21	1.38	1	B
Endosulfan I	ND		ug/kg	1.71	0.404	1	A
Endosulfan II	ND		ug/kg	1.71	0.572	1	A
Endosulfan sulfate	ND		ug/kg	0.713	0.340	1	A
Methoxychlor	ND		ug/kg	3.21	0.998	1	A
Toxaphene	ND		ug/kg	32.1	8.99	1	A
cis-Chlordane	ND		ug/kg	2.14	0.596	1	A
trans-Chlordane	ND		ug/kg	2.14	0.565	1	A
Chlordane	ND		ug/kg	13.9	5.67	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02 Date Collected: 08/12/19 09:45

Client ID: HVRA-MW100-1.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	104		30-150	B
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	68		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:04
Analyst: BM
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.321	1	A
Lindane	ND		ug/kg	0.683	0.306	1	A
Alpha-BHC	ND		ug/kg	0.683	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.622	1	A
Heptachlor	ND		ug/kg	0.820	0.368	1	A
Aldrin	ND		ug/kg	1.64	0.578	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.923	1	A
Endrin	ND		ug/kg	0.683	0.280	1	A
Endrin aldehyde	ND		ug/kg	2.05	0.718	1	A
Endrin ketone	ND		ug/kg	1.64	0.422	1	A
Dieldrin	ND		ug/kg	1.02	0.513	1	A
4,4'-DDE	ND		ug/kg	1.64	0.379	1	A
4,4'-DDD	ND		ug/kg	1.64	0.585	1	A
4,4'-DDT	ND		ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	ND		ug/kg	1.64	0.548	1	A
Endosulfan sulfate	ND		ug/kg	0.683	0.325	1	A
Methoxychlor	ND		ug/kg	3.08	0.957	1	A
Toxaphene	ND		ug/kg	30.8	8.61	1	A
cis-Chlordane	ND		ug/kg	2.05	0.571	1	A
trans-Chlordane	ND		ug/kg	2.05	0.541	1	A
Chlordane	ND		ug/kg	13.3	5.43	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04 Date Collected: 08/12/19 10:20

Client ID: HVRA-MW101-1.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	B
Decachlorobiphenyl	112		30-150	B
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	71		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:16
Analyst: BM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.81	0.355	1	A
Lindane	ND		ug/kg	0.755	0.338	1	A
Alpha-BHC	ND		ug/kg	0.755	0.214	1	A
Beta-BHC	ND		ug/kg	1.81	0.687	1	A
Heptachlor	ND		ug/kg	0.906	0.406	1	A
Aldrin	ND		ug/kg	1.81	0.638	1	A
Heptachlor epoxide	ND		ug/kg	3.40	1.02	1	A
Endrin	ND		ug/kg	0.755	0.310	1	A
Endrin aldehyde	ND		ug/kg	2.27	0.793	1	A
Endrin ketone	ND		ug/kg	1.81	0.467	1	A
Dieldrin	ND		ug/kg	1.13	0.566	1	A
4,4'-DDE	ND		ug/kg	1.81	0.419	1	B
4,4'-DDD	ND		ug/kg	1.81	0.647	1	A
4,4'-DDT	ND		ug/kg	3.40	1.46	1	A
Endosulfan I	ND		ug/kg	1.81	0.428	1	A
Endosulfan II	ND		ug/kg	1.81	0.606	1	A
Endosulfan sulfate	ND		ug/kg	0.755	0.360	1	A
Methoxychlor	ND		ug/kg	3.40	1.06	1	A
Toxaphene	ND		ug/kg	34.0	9.52	1	A
cis-Chlordane	ND		ug/kg	2.27	0.632	1	A
trans-Chlordane	ND		ug/kg	2.27	0.598	1	A
Chlordane	ND		ug/kg	14.7	6.00	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05 Date Collected: 08/12/19 10:30

Client ID: HVRA-MW101-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	110		30-150	B
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	68		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:29
Analyst: BM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.72	0.337	1	A
Lindane	ND		ug/kg	0.717	0.320	1	A
Alpha-BHC	ND		ug/kg	0.717	0.204	1	A
Beta-BHC	ND		ug/kg	1.72	0.652	1	A
Heptachlor	ND		ug/kg	0.860	0.386	1	A
Aldrin	ND		ug/kg	1.72	0.606	1	A
Heptachlor epoxide	ND		ug/kg	3.23	0.968	1	A
Endrin	ND		ug/kg	0.717	0.294	1	A
Endrin aldehyde	ND		ug/kg	2.15	0.753	1	A
Endrin ketone	ND		ug/kg	1.72	0.443	1	A
Dieldrin	ND		ug/kg	1.08	0.538	1	A
4,4'-DDE	ND		ug/kg	1.72	0.398	1	A
4,4'-DDD	ND		ug/kg	1.72	0.614	1	A
4,4'-DDT	ND		ug/kg	3.23	1.38	1	B
Endosulfan I	ND		ug/kg	1.72	0.406	1	A
Endosulfan II	ND		ug/kg	1.72	0.575	1	A
Endosulfan sulfate	ND		ug/kg	0.717	0.341	1	A
Methoxychlor	ND		ug/kg	3.23	1.00	1	A
Toxaphene	ND		ug/kg	32.3	9.03	1	A
cis-Chlordane	ND		ug/kg	2.15	0.599	1	A
trans-Chlordane	ND		ug/kg	2.15	0.568	1	A
Chlordane	ND		ug/kg	14.0	5.70	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07 Date Collected: 08/12/19 11:15

Client ID: HVRA-MW102-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	119		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	84		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:41
Analyst: BM
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.328	1	A
Lindane	ND		ug/kg	0.697	0.312	1	A
Alpha-BHC	ND		ug/kg	0.697	0.198	1	A
Beta-BHC	ND		ug/kg	1.67	0.634	1	A
Heptachlor	ND		ug/kg	0.837	0.375	1	A
Aldrin	ND		ug/kg	1.67	0.589	1	A
Heptachlor epoxide	ND		ug/kg	3.14	0.941	1	A
Endrin	ND		ug/kg	0.697	0.286	1	A
Endrin aldehyde	ND		ug/kg	2.09	0.732	1	A
Endrin ketone	ND		ug/kg	1.67	0.431	1	A
Dieldrin	ND		ug/kg	1.04	0.523	1	A
4,4'-DDE	ND		ug/kg	1.67	0.387	1	B
4,4'-DDD	ND		ug/kg	1.67	0.597	1	A
4,4'-DDT	ND		ug/kg	3.14	1.34	1	A
Endosulfan I	ND		ug/kg	1.67	0.395	1	A
Endosulfan II	ND		ug/kg	1.67	0.559	1	A
Endosulfan sulfate	ND		ug/kg	0.697	0.332	1	A
Methoxychlor	ND		ug/kg	3.14	0.976	1	A
Toxaphene	ND		ug/kg	31.4	8.78	1	A
cis-Chlordane	ND		ug/kg	2.09	0.583	1	A
trans-Chlordane	ND		ug/kg	2.09	0.552	1	A
Chlordane	ND		ug/kg	13.6	5.54	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08 Date Collected: 08/12/19 11:30

Client ID: HVRA-MW102-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	119		30-150	B
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	74		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:54
Analyst: BM
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.41	0.471	1	A
Lindane	ND		ug/kg	1.00	0.448	1	A
Alpha-BHC	ND		ug/kg	1.00	0.285	1	A
Beta-BHC	ND		ug/kg	2.41	0.913	1	A
Heptachlor	ND		ug/kg	1.20	0.540	1	A
Aldrin	ND		ug/kg	2.41	0.848	1	A
Heptachlor epoxide	ND		ug/kg	4.51	1.35	1	A
Endrin	ND		ug/kg	1.00	0.411	1	A
Endrin aldehyde	ND		ug/kg	3.01	1.05	1	A
Endrin ketone	ND		ug/kg	2.41	0.620	1	A
Dieldrin	ND		ug/kg	1.50	0.752	1	A
4,4'-DDE	0.886	JP	ug/kg	2.41	0.557	1	A
4,4'-DDD	ND		ug/kg	2.41	0.859	1	A
4,4'-DDT	ND		ug/kg	4.51	1.94	1	B
Endosulfan I	ND		ug/kg	2.41	0.569	1	A
Endosulfan II	ND		ug/kg	2.41	0.804	1	A
Endosulfan sulfate	ND		ug/kg	1.00	0.477	1	A
Methoxychlor	ND		ug/kg	4.51	1.40	1	A
Toxaphene	ND		ug/kg	45.1	12.6	1	A
cis-Chlordane	ND		ug/kg	3.01	0.838	1	A
trans-Chlordane	ND		ug/kg	3.01	0.794	1	A
Chlordane	ND		ug/kg	19.6	7.97	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12 Date Collected: 08/12/19 11:50

Client ID: HVRA-MW103-0.5 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	103		30-150	B
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	72		30-150	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 04:06
Analyst: BM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.80	0.352	1	A
Lindane	ND		ug/kg	0.748	0.334	1	A
Alpha-BHC	ND		ug/kg	0.748	0.212	1	A
Beta-BHC	ND		ug/kg	1.80	0.681	1	A
Heptachlor	ND		ug/kg	0.898	0.402	1	A
Aldrin	ND		ug/kg	1.80	0.632	1	A
Heptachlor epoxide	ND		ug/kg	3.36	1.01	1	A
Endrin	ND		ug/kg	0.748	0.307	1	A
Endrin aldehyde	ND		ug/kg	2.24	0.785	1	A
Endrin ketone	ND		ug/kg	1.80	0.462	1	A
Dieldrin	ND		ug/kg	1.12	0.561	1	A
4,4'-DDE	0.520	J	ug/kg	1.80	0.415	1	A
4,4'-DDD	ND		ug/kg	1.80	0.640	1	A
4,4'-DDT	ND		ug/kg	3.36	1.44	1	B
Endosulfan I	ND		ug/kg	1.80	0.424	1	A
Endosulfan II	ND		ug/kg	1.80	0.600	1	A
Endosulfan sulfate	ND		ug/kg	0.748	0.356	1	A
Methoxychlor	ND		ug/kg	3.36	1.05	1	A
Toxaphene	ND		ug/kg	33.6	9.42	1	A
cis-Chlordane	ND		ug/kg	2.24	0.625	1	A
trans-Chlordane	ND		ug/kg	2.24	0.592	1	A
Chlordane	ND		ug/kg	14.6	5.95	1	A

Project Name: HVRA **Lab Number:** L1936143

Project Number: 18.8090 **Report Date:** 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13 Date Collected: 08/12/19 12:00

Client ID: HVRA-MW103-2.0 Date Received: 08/12/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	110		30-150	B
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	70		30-150	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/19/19 22:53
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1273722-1						
Delta-BHC	ND		ug/kg	1.60	0.313	A
Lindane	ND		ug/kg	0.665	0.297	A
Alpha-BHC	ND		ug/kg	0.665	0.189	A
Beta-BHC	ND		ug/kg	1.60	0.605	A
Heptachlor	ND		ug/kg	0.798	0.358	A
Aldrin	ND		ug/kg	1.60	0.562	A
Heptachlor epoxide	ND		ug/kg	2.99	0.898	A
Endrin	ND		ug/kg	0.665	0.273	A
Endrin aldehyde	ND		ug/kg	2.00	0.699	A
Endrin ketone	ND		ug/kg	1.60	0.411	A
Dieldrin	ND		ug/kg	0.998	0.499	A
4,4'-DDE	ND		ug/kg	1.60	0.369	A
4,4'-DDD	ND		ug/kg	1.60	0.570	A
4,4'-DDT	ND		ug/kg	2.99	1.28	A
Endosulfan I	ND		ug/kg	1.60	0.377	A
Endosulfan II	ND		ug/kg	1.60	0.534	A
Endosulfan sulfate	ND		ug/kg	0.665	0.317	A
Methoxychlor	ND		ug/kg	2.99	0.931	A
Toxaphene	ND		ug/kg	29.9	8.38	A
cis-Chlordane	ND		ug/kg	2.00	0.556	A
trans-Chlordane	ND		ug/kg	2.00	0.527	A
Chlordane	ND		ug/kg	13.0	5.29	A

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 08/19/19 22:53
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1273722-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	97		30-150	B
Decachlorobiphenyl	100		30-150	B
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	96		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1273722-2 WG1273722-3									
Delta-BHC	96		95		30-150	1		30	A
Lindane	94		91		30-150	3		30	A
Alpha-BHC	101		100		30-150	1		30	A
Beta-BHC	100		94		30-150	6		30	A
Heptachlor	98		101		30-150	3		30	A
Aldrin	90		90		30-150	0		30	A
Heptachlor epoxide	92		95		30-150	3		30	A
Endrin	101		104		30-150	3		30	A
Endrin aldehyde	90		94		30-150	4		30	A
Endrin ketone	100		105		30-150	5		30	A
Dieldrin	101		104		30-150	3		30	A
4,4'-DDE	92		94		30-150	2		30	A
4,4'-DDD	101		107		30-150	6		30	A
4,4'-DDT	101		105		30-150	4		30	A
Endosulfan I	84		85		30-150	1		30	A
Endosulfan II	96		98		30-150	2		30	A
Endosulfan sulfate	106		111		30-150	5		30	A
Methoxychlor	91		96		30-150	5		30	A
cis-Chlordane	73		72		30-150	1		30	A
trans-Chlordane	81		84		30-150	4		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1273722-2 WG1273722-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	98		98		30-150	B
Decachlorobiphenyl	95		102		30-150	B
2,4,5,6-Tetrachloro-m-xylene	96		94		30-150	A
Decachlorobiphenyl	71		85		30-150	A

METALS

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11300		mg/kg	8.60	2.32	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Antimony, Total	0.946	J	mg/kg	4.30	0.327	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Arsenic, Total	3.73		mg/kg	0.860	0.179	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Barium, Total	59.6		mg/kg	0.860	0.150	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Beryllium, Total	0.396	J	mg/kg	0.430	0.028	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.860	0.084	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Calcium, Total	809		mg/kg	8.60	3.01	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Chromium, Total	10.6		mg/kg	0.860	0.083	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Cobalt, Total	6.79		mg/kg	1.72	0.143	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Copper, Total	17.3		mg/kg	0.860	0.222	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Iron, Total	19000		mg/kg	4.30	0.777	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Lead, Total	57.8		mg/kg	4.30	0.231	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Magnesium, Total	3320		mg/kg	8.60	1.32	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Manganese, Total	728		mg/kg	0.860	0.137	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Mercury, Total	0.094		mg/kg	0.068	0.044	1	08/17/19 06:20	08/19/19 17:01	EPA 7471B	1,7471B	AL
Nickel, Total	13.8		mg/kg	2.15	0.208	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Potassium, Total	305		mg/kg	215	12.4	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.72	0.222	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.860	0.244	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Sodium, Total	79.8	J	mg/kg	172	2.71	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.72	0.271	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Vanadium, Total	11.7		mg/kg	0.860	0.175	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB
Zinc, Total	76.6		mg/kg	4.30	0.252	2	08/15/19 22:40	08/19/19 15:40	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2130		mg/kg	7.89	2.13	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Antimony, Total	0.363	J	mg/kg	3.94	0.300	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Arsenic, Total	4.27		mg/kg	0.789	0.164	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Barium, Total	10.8		mg/kg	0.789	0.137	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Beryllium, Total	0.126	J	mg/kg	0.394	0.026	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.789	0.077	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Calcium, Total	122000		mg/kg	78.9	27.6	20	08/15/19 22:40	08/19/19 16:49	EPA 3050B	1,6010D	AB
Chromium, Total	3.72		mg/kg	0.789	0.076	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Cobalt, Total	2.80		mg/kg	1.58	0.131	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Copper, Total	8.36		mg/kg	0.789	0.204	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Iron, Total	7120		mg/kg	3.94	0.712	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Lead, Total	4.71		mg/kg	3.94	0.211	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Magnesium, Total	55500		mg/kg	7.89	1.21	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Manganese, Total	185		mg/kg	0.789	0.125	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.065	0.042	1	08/17/19 06:20	08/19/19 17:03	EPA 7471B	1,7471B	AL
Nickel, Total	4.84		mg/kg	1.97	0.191	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Potassium, Total	228		mg/kg	197	11.4	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Selenium, Total	0.497	J	mg/kg	1.58	0.204	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.789	0.223	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Sodium, Total	110	J	mg/kg	158	2.48	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.58	0.248	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Vanadium, Total	6.92		mg/kg	0.789	0.160	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB
Zinc, Total	12.7		mg/kg	3.94	0.231	2	08/15/19 22:40	08/19/19 15:44	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11800		mg/kg	8.91	2.40	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Antimony, Total	1.04	J	mg/kg	4.46	0.339	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Arsenic, Total	2.55		mg/kg	0.891	0.185	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Barium, Total	55.9		mg/kg	0.891	0.155	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Beryllium, Total	0.401	J	mg/kg	0.446	0.029	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.891	0.087	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Calcium, Total	8050		mg/kg	8.91	3.12	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Chromium, Total	12.3		mg/kg	0.891	0.086	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Cobalt, Total	7.60		mg/kg	1.78	0.148	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Copper, Total	13.9		mg/kg	0.891	0.230	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Iron, Total	20000		mg/kg	4.46	0.805	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Lead, Total	11.5		mg/kg	4.46	0.239	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Magnesium, Total	7550		mg/kg	8.91	1.37	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Manganese, Total	568		mg/kg	0.891	0.142	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.073	0.048	1	08/17/19 06:20	08/19/19 17:05	EPA 7471B	1,7471B	AL
Nickel, Total	14.7		mg/kg	2.23	0.216	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Potassium, Total	330		mg/kg	223	12.8	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.78	0.230	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.891	0.252	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Sodium, Total	32.6	J	mg/kg	178	2.81	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.78	0.281	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Vanadium, Total	12.8		mg/kg	0.891	0.181	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB
Zinc, Total	47.7		mg/kg	4.46	0.261	2	08/15/19 22:40	08/19/19 16:01	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	9550		mg/kg	8.59	2.32	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Antimony, Total	0.834	J	mg/kg	4.30	0.326	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Arsenic, Total	3.15		mg/kg	0.859	0.179	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Barium, Total	42.4		mg/kg	0.859	0.150	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Beryllium, Total	0.370	J	mg/kg	0.430	0.028	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.859	0.084	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Calcium, Total	1410		mg/kg	8.59	3.01	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Chromium, Total	10.6		mg/kg	0.859	0.083	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Cobalt, Total	6.46		mg/kg	1.72	0.143	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Copper, Total	20.1		mg/kg	0.859	0.222	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Iron, Total	17400		mg/kg	4.30	0.776	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Lead, Total	13.2		mg/kg	4.30	0.230	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Magnesium, Total	3370		mg/kg	8.59	1.32	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Manganese, Total	415		mg/kg	0.859	0.137	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.068	0.044	1	08/17/19 06:20	08/19/19 17:07	EPA 7471B	1,7471B	AL
Nickel, Total	14.5		mg/kg	2.15	0.208	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Potassium, Total	358		mg/kg	215	12.4	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.72	0.222	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.859	0.243	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Sodium, Total	19.4	J	mg/kg	172	2.71	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.72	0.271	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Vanadium, Total	14.0		mg/kg	0.859	0.174	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB
Zinc, Total	46.1		mg/kg	4.30	0.252	2	08/15/19 22:40	08/19/19 16:05	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11200		mg/kg	8.41	2.27	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Antimony, Total	1.06	J	mg/kg	4.21	0.320	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Arsenic, Total	4.34		mg/kg	0.841	0.175	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Barium, Total	41.2		mg/kg	0.841	0.146	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Beryllium, Total	0.387	J	mg/kg	0.421	0.028	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.841	0.083	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Calcium, Total	8520		mg/kg	8.41	2.94	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Chromium, Total	15.8		mg/kg	0.841	0.081	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Cobalt, Total	9.48		mg/kg	1.68	0.140	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Copper, Total	26.5		mg/kg	0.841	0.217	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Iron, Total	21800		mg/kg	4.21	0.760	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Lead, Total	10.9		mg/kg	4.21	0.226	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Magnesium, Total	5080		mg/kg	8.41	1.30	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Manganese, Total	636		mg/kg	0.841	0.134	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.067	0.044	1	08/17/19 06:20	08/19/19 17:12	EPA 7471B	1,7471B	AL
Nickel, Total	19.9		mg/kg	2.10	0.204	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Potassium, Total	448		mg/kg	210	12.1	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.68	0.217	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.841	0.238	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Sodium, Total	29.2	J	mg/kg	168	2.65	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.68	0.265	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Vanadium, Total	13.2		mg/kg	0.841	0.171	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB
Zinc, Total	57.0		mg/kg	4.21	0.246	2	08/15/19 22:40	08/19/19 16:10	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	15500		mg/kg	12.0	3.26	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Antimony, Total	1.20	J	mg/kg	6.03	0.458	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Arsenic, Total	5.53		mg/kg	1.20	0.251	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Barium, Total	54.7		mg/kg	1.20	0.210	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Beryllium, Total	0.494	J	mg/kg	0.603	0.040	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	1.20	0.118	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Calcium, Total	3610		mg/kg	12.0	4.22	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Chromium, Total	15.8		mg/kg	1.20	0.116	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Cobalt, Total	10.5		mg/kg	2.41	0.200	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Copper, Total	32.0		mg/kg	1.20	0.311	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Iron, Total	29400		mg/kg	6.03	1.09	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Lead, Total	25.5		mg/kg	6.03	0.323	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Magnesium, Total	6400		mg/kg	12.0	1.86	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Manganese, Total	974		mg/kg	1.20	0.192	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.097	0.063	1	08/17/19 06:20	08/19/19 17:14	EPA 7471B	1,7471B	AL
Nickel, Total	22.3		mg/kg	3.01	0.292	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Potassium, Total	519		mg/kg	301	17.4	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	2.41	0.311	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	1.20	0.341	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Sodium, Total	37.1	J	mg/kg	241	3.80	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	2.41	0.380	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Vanadium, Total	20.1		mg/kg	1.20	0.245	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB
Zinc, Total	75.5		mg/kg	6.03	0.353	2	08/15/19 22:40	08/19/19 16:14	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10200		mg/kg	8.91	2.41	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Antimony, Total	0.918	J	mg/kg	4.46	0.339	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Arsenic, Total	3.80		mg/kg	0.891	0.185	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Barium, Total	36.8		mg/kg	0.891	0.155	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Beryllium, Total	0.365	J	mg/kg	0.446	0.029	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Cadmium, Total	ND		mg/kg	0.891	0.087	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Calcium, Total	2360		mg/kg	8.91	3.12	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Chromium, Total	11.6		mg/kg	0.891	0.086	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Cobalt, Total	7.98		mg/kg	1.78	0.148	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Copper, Total	24.0		mg/kg	0.891	0.230	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Iron, Total	19700		mg/kg	4.46	0.805	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Lead, Total	19.7		mg/kg	4.46	0.239	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Magnesium, Total	4280		mg/kg	8.91	1.37	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Manganese, Total	573		mg/kg	0.891	0.142	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Mercury, Total	ND		mg/kg	0.072	0.047	1	08/17/19 06:20	08/19/19 17:15	EPA 7471B	1,7471B	AL
Nickel, Total	17.2		mg/kg	2.23	0.216	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Potassium, Total	376		mg/kg	223	12.8	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Selenium, Total	ND		mg/kg	1.78	0.230	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Silver, Total	ND		mg/kg	0.891	0.252	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Sodium, Total	23.2	J	mg/kg	178	2.81	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Thallium, Total	ND		mg/kg	1.78	0.281	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Vanadium, Total	14.9		mg/kg	0.891	0.181	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB
Zinc, Total	60.3		mg/kg	4.46	0.261	2	08/15/19 22:40	08/19/19 16:18	EPA 3050B	1,6010D	AB

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1272975-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Iron, Total	0.692	J	mg/kg	2.00	0.361	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Sodium, Total	2.74	J	mg/kg	80.0	1.26	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1273559-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/17/19 06:20	08/19/19 15:20	1,7471B	AL

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1272975-2 SRM Lot Number: D105-540								
Aluminum, Total	67		-		51-149	-		
Antimony, Total	133		-		19-249	-		
Arsenic, Total	103		-		70-130	-		
Barium, Total	97		-		75-125	-		
Beryllium, Total	91		-		75-125	-		
Cadmium, Total	92		-		75-125	-		
Calcium, Total	88		-		73-127	-		
Chromium, Total	96		-		70-130	-		
Cobalt, Total	92		-		75-125	-		
Copper, Total	100		-		75-125	-		
Iron, Total	91		-		38-162	-		
Lead, Total	92		-		71-128	-		
Magnesium, Total	81		-		63-137	-		
Manganese, Total	90		-		76-124	-		
Nickel, Total	94		-		70-131	-		
Potassium, Total	82		-		60-140	-		
Selenium, Total	97		-		63-137	-		
Silver, Total	97		-		69-131	-		
Sodium, Total	104		-		37-162	-		
Thallium, Total	94		-		68-132	-		
Vanadium, Total	97		-		65-135	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 08/26/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1272975-2 SRM Lot Number: D105-540					
Zinc, Total	94	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1273559-2 SRM Lot Number: D105-540					
Mercury, Total	100	-	60-141	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 QC Batch ID: WG1272975-3 WG1272975-4 QC Sample: L1936136-08 Client ID: MS Sample												
Aluminum, Total	9050	185	9910	**464**	Q	10400	**698**	Q	75-125	5		20
Antimony, Total	0.935J	46.3	39.5	85		30.9	**64**	Q	75-125	**24**	Q	20
Arsenic, Total	6.09	11.1	16.7	95		19.2	113		75-125	14		20
Barium, Total	57.9	185	224	90		246	97		75-125	9		20
Beryllium, Total	0.477	4.63	4.29	92		4.53	94		75-125	5		20
Cadmium, Total	ND	4.73	3.76	80		3.92	80		75-125	4		20
Calcium, Total	12400	927	10100	**0**	Q	12700	**31**	Q	75-125	**23**	Q	20
Chromium, Total	13.8	18.5	30.4	90		32.3	96		75-125	6		20
Cobalt, Total	8.22	46.3	45.6	81		49.0	84		75-125	7		20
Copper, Total	29.5	23.2	51.6	95		53.0	97		75-125	3		20
Iron, Total	19300	92.7	19100	**0**	Q	21700	**2480**	Q	75-125	13		20
Lead, Total	22.9	47.3	61.3	81		63.4	82		75-125	3		20
Magnesium, Total	5210	927	5330	**13**	Q	5520	**32**	Q	75-125	4		20
Manganese, Total	235	46.3	287	112		491	**530**	Q	75-125	**52**	Q	20
Nickel, Total	24.9	46.3	62.8	82		66.2	85		75-125	5		20
Potassium, Total	517	927	1420	97		1500	102		75-125	5		20
Selenium, Total	ND	11.1	10.1	91		10.7	92		75-125	6		20
Silver, Total	ND	27.8	25.6	92		27.0	93		75-125	5		20
Sodium, Total	71.0J	927	956	103		1020	106		75-125	6		20
Thallium, Total	ND	11.1	8.47	76		8.73	75		75-125	3		20
Vanadium, Total	18.3	46.3	60.5	91		63.9	94		75-125	5		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 QC Batch ID: WG1272975-3 WG1272975-4 QC Sample: L1936136-08 Client ID: MS Sample										
Zinc, Total	95.4	46.3	137	90		147	107	75-125	7	20
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 QC Batch ID: WG1273559-3 QC Sample: L1935237-05 Client ID: MS Sample										
Mercury, Total	0.053J	0.149	0.269	**180**	Q	-	-	80-120	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13 QC Batch ID: WG1273559-4 QC Sample: L1935237-05 Client ID: DUP Sample						
Mercury, Total	0.053J	0.059J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-02
Client ID: HVRA-MW100-1.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 09:45
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.3		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	08/13/19 14:40	08/14/19 11:58	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-04
Client ID: HVRA-MW101-1.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.7		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	08/13/19 14:40	08/14/19 11:59	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-05
Client ID: HVRA-MW101-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 10:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.23	1	08/13/19 14:40	08/14/19 12:00	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-07
Client ID: HVRA-MW102-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.8		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	08/13/19 14:40	08/14/19 12:01	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-08
Client ID: HVRA-MW102-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.8		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.0	0.22	1	08/13/19 14:40	08/14/19 12:02	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.2		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.5	0.32	1	08/13/19 14:40	08/14/19 12:03	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-13
Client ID: HVRA-MW103-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:00
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.1		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI
Cyanide, Total	ND		mg/kg	1.1	0.22	1	08/13/19 14:40	08/14/19 12:04	1,9010C/9012B	LH

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-15
Client ID: HVRA-MW104-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:15
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-16
Client ID: HVRA-MW104-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:20
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.7		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-18
Client ID: HVRA-MW105-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:40
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.6		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

SAMPLE RESULTS

Lab ID: L1936143-19
Client ID: HVRA-MW105-2.0
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:46
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.3		%	0.100	NA	1	-	08/13/19 10:56	121,2540G	RI

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1271656-1										
Cyanide, Total	ND		mg/kg	0.94	0.20	1	08/13/19 14:40	08/14/19 11:31	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 08/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1271656-2 WG1271656-3								
Cyanide, Total	**62**	Q	**71**	Q	80-120	8		35

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 QC Batch ID: WG1271656-4 WG1271656-5 QC Sample: L1935771-05 Client ID: MS Sample												
Cyanide, Total	ND	11	7.6	**69**	Q	9.8	91		75-125	25		35

Lab Duplicate Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 QC Batch ID: WG1271689-1 QC Sample: L1936136-08 Client ID: DUP Sample						
Solids, Total	81.0	83.5	%	3		20

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1936143-01A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-02A	Vial MeOH preserved	B	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1936143-02B	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-02C	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-02D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-02F	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-1,4-DIOXANE-SIM(14),A2-NY-537-ISOTOPE(28)
L1936143-02G	Glass 500ml/16oz unpreserved	B	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-03A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-04A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-04B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-04C	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-04D	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		TCN-9010(14),A2-NY-537-ISOTOPE(28)
L1936143-05A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1936143-05B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-05C	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-05D	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-1,4-DIOXANE-SIM(14),A2-NY-537-ISOTOPE(28)
L1936143-06A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-07A	Vial MeOH preserved	B	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1936143-07B	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-07C	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-07D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-07F	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-1,4-DIOXANE-SIM(14),A2-NY-537-ISOTOPE(28)
L1936143-07G	Glass 500ml/16oz unpreserved	B	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-08A	Vial MeOH preserved	B	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1936143-08B	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-08C	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-08D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-08F	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-1,4-DIOXANE-SIM(14),A2-NY-537-ISOTOPE(28)
L1936143-08G	Glass 500ml/16oz unpreserved	B	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-09A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1936143-10A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-11A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-12A	Vial MeOH preserved	B	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1936143-12B	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-12C	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-12D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-12F	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-1,4-DIOXANE-SIM(14),A2-NY-537-ISOTOPE(28)
L1936143-12G	Glass 500ml/16oz unpreserved	B	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-13A	Vial MeOH preserved	B	NA		2.8	Y	Absent		NYTCL-8260HLW-R2(14)
L1936143-13B	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-13C	Vial water preserved	B	NA		2.8	Y	Absent	13-AUG-19 07:05	NYTCL-8260HLW-R2(14)
L1936143-13D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-13E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1936143-13F	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1936143-13G	Glass 500ml/16oz unpreserved	B	NA		2.8	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8081(14),NYTCL-8082(14)
L1936143-14A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-15A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-15B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1936143-15C	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1936143-16A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-16B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1936143
Report Date: 08/26/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1936143-16C	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1936143-17A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L1936143-18A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-18B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1936143-18C	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)
L1936143-19A	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L1936143-19B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		A2-1,4-DIOXANE-SIM(14)
L1936143-19C	Plastic 8oz unpreserved	A	NA		3.0	Y	Absent		A2-NY-537-ISOTOPE(28)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1936143
Project Number:	18.8090	**Report Date:**	08/26/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1936143
Project Number:	18.8090	**Report Date:**	08/26/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when using acetone as a solvent.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1936143
Project Number:	18.8090	**Report Date:**	08/26/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 8/13/19

ALPHA Job #: L1936143

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HURA
Project Location: Wappingers Falls, NY
Project #: 18.8040
(Use Project name as Project #) ☐
Project Manager: Kurt Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pest	TAL Mtls	PFAs	1,4-Dioxane	CN	Sample Specific Comments	Total Bottle
36143-01	HURA-RB01-190812	8-12	0930	Water	JM						X				1
-02	HURA-MW102-1.0		0945	Soil	JM	X	X	X	X	X	X	X	X		7
-03	HURA-RB02-190812		1000	Water	JM	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	X	~~X~~	~~X~~	JM 08-12	1 ~~4~~
-04	HURA-MW101-0.5		1022	Soil	JM			X	X	X	X	X	X		4
-05	HURA-MW101-2.0		1030	Soil	JM			X	X	X	X	X	X		4
-06	HURA-RB03-190812		1105	Water	JM						X				1
-07	HURA-MW102-0.5		1115	Soil	JM	X	X	X	X	X	X	X	X		7
-08	HURA-MW102-2.0	↓	1130	Soil	JM	X	X	X	X	X	X	X	X		7
-09	HURA-FTB01-190812		1250	Water	JM						X				
-10	HURA-LTB01-190812	↓	—	Water	JM						X				

Container Type: V | G | G | G | G | P | G | G
Preservative: F | A | A | A | A | A | A | A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	08/12/19	[signature] (AAL)	8/12/19 15:28
[signature] (AAL)	8/12/19 17:15	[signature]	8/13/19 1:35
[signature] AAC	8/13/19 0033	[signature]	8/13/19 00:40

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 8/13/19

ALPHA Job #: L1936143

Client Information
Client: C.T. Male Associates
Address: 50 Century Hill Dr.
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.Moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.4090
(Use Project name as Project #) ☐
Project Manager: K.R. Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL Pest	TAL Mtls	TCL PCBs	PFAs	1,4-Dioxane	CN	Sample Specific Comments	Total Bottle
36143-11	HVRA-RB04-190812	8-12	1145	Water	DM						X				1
-12	HVRA-MW03-0.5		1150	Soil	DM	X	X	X	X	X	X	X	X		7
-13	HVRA-MW03-2.0		1200	Soil	DM	X	X	X	X	X	X	X	X		7
-14	HVRA-RB05-190812		1210	Water	DM						X				1
-15	HVRA-MW104-0.5		1215	Soil	DM						X	X			3
-16	HVRA-MW104-2.0		1220	Soil	DM						X	X			3
-17	HVRA-RB06-190812		1230	Water	DM						X				1
-18	HVRA-MW105-0.5		1240	Soil	DM						X	X			3
-19	HVRA-MW105-2.0	↓	1245	Soil	DM						X	X			3

Container Type	V	B	B	B	B	P	B	B
Preservative	F	A	A	A	A	A	A	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Dave Mazza	08/12/19	MEADROS (AAL)	8/12/19 15:28
MEADROS (AAL)	8/12/19 17:15		8/12/19
	8/13/19 0035		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1940308
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Kirk Moline
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	09/20/19

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1940308-01	HVRA-1581_RT_376-190904	WATER	WAPPINGERS FALLS, NY	09/04/19 13:33	09/04/19
L1940308-02	HVRA-7_HACKENSACK_HTS_RD-190904	WATER	WAPPINGERS FALLS, NY	09/04/19 14:00	09/04/19
L1940308-03	HVRA-FTB01-190904	WATER	WAPPINGERS FALLS, NY	09/04/19 14:04	09/04/19
L1940308-04	HVRA-1610_RT_376-190904	WATER	WAPPINGERS FALLS, NY	09/04/19 14:41	09/04/19

Project Name:	HVRA	**Lab Number:**	L1940308
Project Number:	18.8090	**Report Date:**	09/20/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1940308
Project Number:	18.8090	**Report Date:**	09/20/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1286210-1: The continuing calibration standard had the response for 8:2 FTS outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1286210-3: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/20/19

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-01
Client ID: HVRA-1581_RT_376-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 13:33
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 09/08/19 02:27
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/06/19 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	216.		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	48		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-01
Client ID: HVRA-1581_RT_376-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 13:33
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/20/19 01:17
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	12.8		ng/l	1.80	0.367	1
Perfluoropentanoic Acid (PFPeA)	35.5		ng/l	1.80	0.356	1
Perfluorobutanesulfonic Acid (PFBS)	7.48		ng/l	1.80	0.214	1
Perfluorohexanoic Acid (PFHxA)	36.0		ng/l	1.80	0.295	1
Perfluoroheptanoic Acid (PFHpA)	14.2		ng/l	1.80	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	8.31		ng/l	1.80	0.338	1
Perfluorooctanoic Acid (PFOA)	33.2		ng/l	1.80	0.212	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.619	1
Perfluorononanoic Acid (PFNA)	1.10	J	ng/l	1.80	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	42.6		ng/l	1.80	0.453	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.273	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.583	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.234	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.881	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.522	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.723	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.334	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.294	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.223	1
PFOA/PFOS, Total	75.8		ng/l	1.80	0.212	1

Project Name: HVRA **Lab Number:** L1940308

Project Number: 18.8090 **Report Date:** 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-01 Date Collected: 09/04/19 13:33

Client ID: HVRA-1581_RT_376-190904 Date Received: 09/04/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	75		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	62		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	116		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	73		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	140		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	116		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	46		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	62		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		33-143

Project Name: HVRA
Lab Number: L1940308
Project Number: 18.8090
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-02
Client ID: HVRA-7_HACKENSACK_HTS_RD-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:00
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 09/08/19 02:47
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/06/19 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	48		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-02
Client ID: HVRA-7_HACKENSACK_HTS_RD-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:00
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/20/19 01:51
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.38		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	13.8		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	9.01		ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	9.41		ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	3.93		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	2.50		ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	10.4		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	1.19	J	ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	22.1		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	0.524	J	ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	32.5		ng/l	1.84	0.218	1

Project Name: HVRA **Lab Number:** L1940308

Project Number: 18.8090 **Report Date:** 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-02 Date Collected: 09/04/19 14:00

Client ID: HVRA-7_HACKENSACK_HTS_RD-190904 Date Received: 09/04/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	68		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	116		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	67		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	55		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	80		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-03
Client ID: HVRA-FTB01-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:04
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/20/19 02:07
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.94	0.395	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.94	0.384	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.94	0.231	1
Perfluorohexanoic Acid (PFHxA)	0.368	J	ng/l	1.94	0.318	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.94	0.218	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.94	0.364	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.94	0.229	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.94	1.29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.94	0.667	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.302	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.94	0.488	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.294	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.94	1.17	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.628	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.252	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.94	0.950	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.94	0.562	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.779	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.360	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.317	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.94	0.240	1
PFOA/PFOS, Total	ND		ng/l	1.94	0.229	1

Project Name: HVRA **Lab Number:** L1940308

Project Number: 18.8090 **Report Date:** 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-03 Date Collected: 09/04/19 14:04

Client ID: HVRA-FTB01-190904 Date Received: 09/04/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	116		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	104		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	108		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	81		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	92		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-04
Client ID: HVRA-1610_RT_376-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:41
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 09/08/19 03:06
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/06/19 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-04
Client ID: HVRA-1610_RT_376-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:41
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/20/19 02:24
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.33	J	ng/l	1.84	0.375	1
Perfluoropentanoic Acid (PFPeA)	1.12	J	ng/l	1.84	0.364	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	1.18	J	ng/l	1.84	0.301	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.632	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.463	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.596	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.901	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.533	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.739	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.342	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.217	1

Project Name: HVRA **Lab Number:** L1940308

Project Number: 18.8090 **Report Date:** 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-04 Date Collected: 09/04/19 14:41

Client ID: HVRA-1610_RT_376-190904 Date Received: 09/04/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	112		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 09/07/19 20:42
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/06/19 18:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-02,04 Batch: WG1281240-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/19/19 19:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1285457-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.392	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/19/19 19:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1285457-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	107		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	117		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-02,04		Batch: WG1281240-2		WG1281240-3			
1,4-Dioxane	109		110		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	37		39		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1285457-2 WG1285457-3								
Perfluorobutanoic Acid (PFBA)	117		118		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	117		118		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	111		112		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	116		116		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	114		119		58-159	4		30
Perfluorohexanesulfonic Acid (PFHxS)	118		123		69-177	4		30
Perfluorooctanoic Acid (PFOA)	114		117		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	123		118		49-187	4		30
Perfluoroheptanesulfonic Acid (PFHpS)	125		109		61-179	14		30
Perfluorononanoic Acid (PFNA)	121		119		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	130		110		52-151	17		30
Perfluorodecanoic Acid (PFDA)	114		121		63-171	6		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	118		120		56-173	2		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	116		122		60-166	5		30
Perfluoroundecanoic Acid (PFUnA)	112		116		60-153	4		30
Perfluorodecanesulfonic Acid (PFDS)	132		108		38-156	20		30
Perfluorooctanesulfonamide (FOSA)	113		116		46-170	3		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	124		126		45-170	2		30
Perfluorododecanoic Acid (PFDoA)	117		118		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	135		136		48-158	1		30
Perfluorotetradecanoic Acid (PFTA)	113		115		59-182	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1940308

Report Date: 09/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1285457-2 WG1285457-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		102		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		94		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		95		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		113		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		103		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		125		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	83		92		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		97		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	78		82		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		96		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	85		82		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1940308-01A	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-01B	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-01C	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940308-01D	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940308-02A	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-02B	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-02C	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940308-02D	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940308-03A	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-04A	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-04B	Plastic 250ml Trizma preserved	A	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940308-04C	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940308-04D	Amber 250ml unpreserved	B	7	7	2.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1940308
Project Number:	18.8090	**Report Date:**	09/20/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1940308
Project Number:	18.8090	**Report Date:**	09/20/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1940308
Project Number:	18.8090	**Report Date:**	09/20/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 9/5/19

ALPHA Job #: L1940308

Client Information
Client: C.T. Male Assoc
Address: 50 Century Hill Dr
Latham, NY
Phone: 518-786-7400
Fax:
Email: K.moline@ctmale.com

Project Information
Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.8090J
(Use Project name as Project #)
Project Manager: Kirk Moline
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☑ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	1,4 Dioxane							Sample Specific Comments	Total Bottle
40308.01	HVRA-158I_Rt_376-190904	9/4/19	1333		AH	X	X								4
.02	HVRA-7_HackensackHts_Rd-190904	9/4/19	1400		AH	X	X								4
.03	HVRA-FTB01-190904	9/4/19	1404		AH	X									1
.04	HVRA-1610_Rt_376-190904	9/4/19	1441		AH	X	X								4

Container Type: P A
Preservative: O A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	09-04-19/1800		9/4/19 2150
	9/4/19 2150		9/5/19 0150
T. Hurdle	9/5/19 0400		9/5/19 0400

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

*PFAS samples and 1,4 Dioxane samples shipped at same time in different coolers

ANALYTICAL REPORT

Lab Number:	L1940894
Client:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, NY 12603
ATTN:	David Lent
Phone:	(845) 454-4400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	09/25/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1940894-01	HVRA-1601RT376-190906	WATER	WAPPINGERS FALLS, NY	09/06/19 15:15	09/06/19
L1940894-02	HVRA-2HACKENSACK-190906	WATER	WAPPINGERS FALLS, NY	09/06/19 16:00	09/06/19
L1940894-03	LTB01-190906	WATER	WAPPINGERS FALLS, NY	09/06/19 00:00	09/06/19

Project Name:	HVRA	**Lab Number:**	L1940894
Project Number:	18.8090	**Report Date:**	09/25/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L1940894
Project Number:	18.8090	**Report Date:**	09/25/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

The WG1286055-3 LCSD recovery, associated with L1940894-01 through -03, is above the acceptance criteria for perfluorotridecanoic acid (pftrda) (164%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

WG1287384-7: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/25/19

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940894
Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-01
Client ID: HVRA-1601RT376-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 15:15
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 09/12/19 12:47
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/11/19 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	160	36.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	26		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940894
Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-01
Client ID: HVRA-1601RT376-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 15:15
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/24/19 21:39
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.78	J	ng/l	1.85	0.378	1
Perfluoropentanoic Acid (PFPeA)	1.11	J	ng/l	1.85	0.367	1
Perfluorobutanesulfonic Acid (PFBS)	0.407	J	ng/l	1.85	0.220	1
Perfluorohexanoic Acid (PFHxA)	1.27	J	ng/l	1.85	0.304	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.85	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	1.36	J	ng/l	1.85	0.348	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.85	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.85	0.637	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.85	0.289	1
Perfluorooctanesulfonic Acid (PFOS)	0.748	J	ng/l	1.85	0.467	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.85	0.281	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.85	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.85	0.600	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.85	0.241	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.85	0.907	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.85	0.537	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.85	0.744	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.85	0.344	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.85	0.303	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.85	0.230	1
PFOA/PFOS, Total	0.748	J	ng/l	1.85	0.218	1

Project Name: HVRA **Lab Number:** L1940894

Project Number: 18.8090 **Report Date:** 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-01 Date Collected: 09/06/19 15:15

Client ID: HVRA-1601RT376-190906 Date Received: 09/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	64		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	76		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	72		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	22		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940894
Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-02
Client ID: HVRA-2HACKENSACK-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 16:00
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 09/12/19 13:08
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/11/19 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	156	35.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	25		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940894
Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-02
Client ID: HVRA-2HACKENSACK-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 16:00
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/24/19 21:55
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.25		ng/l	1.91	0.389	1
Perfluoropentanoic Acid (PFPeA)	12.0		ng/l	1.91	0.378	1
Perfluorobutanesulfonic Acid (PFBS)	5.92		ng/l	1.91	0.227	1
Perfluorohexanoic Acid (PFHxA)	10.7		ng/l	1.91	0.313	1
Perfluoroheptanoic Acid (PFHpA)	7.27		ng/l	1.91	0.215	1
Perfluorohexanesulfonic Acid (PFHxS)	5.43		ng/l	1.91	0.359	1
Perfluorooctanoic Acid (PFOA)	20.7		ng/l	1.91	0.225	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.91	1.27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.91	0.656	1
Perfluorononanoic Acid (PFNA)	1.19	J	ng/l	1.91	0.298	1
Perfluorooctanesulfonic Acid (PFOS)	22.5		ng/l	1.91	0.481	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.91	0.290	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.91	1.16	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.91	0.618	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.91	0.248	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.91	0.935	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.91	0.553	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.91	0.767	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.91	0.355	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.91	0.312	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.91	0.237	1
PFOA/PFOS, Total	43.2		ng/l	1.91	0.225	1

Project Name: HVRA **Lab Number:** L1940894

Project Number: 18.8090 **Report Date:** 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-02 Date Collected: 09/06/19 16:00

Client ID: HVRA-2HACKENSACK-190906 Date Received: 09/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	67		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	75		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	61		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	71		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	101		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	64		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	43		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	58		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940894
Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-03
Client ID: LTB01-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 00:00
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/24/19 22:12
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.79	0.366	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.79	0.355	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	0.373	J	ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.79	0.337	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.79	0.616	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.79	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.79	0.452	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.79	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.581	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.233	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.878	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.520	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.720	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.333	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.293	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	ND		ng/l	1.79	0.211	1

Project Name: HVRA **Lab Number:** L1940894

Project Number: 18.8090 **Report Date:** 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-03 Date Collected: 09/06/19 00:00

Client ID: LTB01-190906 Date Received: 09/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	56		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	57		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	58		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	71		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	87		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	51		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 09/12/19 08:16
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 09/11/19 12:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-02 Batch: WG1282853-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	26		15-110

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/24/19 15:34
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1286055-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.424	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/24/19 15:34
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1286055-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	99		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-02		Batch: WG1282853-2 WG1282853-3					
1,4-Dioxane	109		110		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	31		29		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1286055-2 WG1286055-3								
Perfluorobutanoic Acid (PFBA)	134		133		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	121		120		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	106		111		65-157	5		30
Perfluorohexanoic Acid (PFHxA)	130		130		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	130		131		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	136		138		69-177	1		30
Perfluorooctanoic Acid (PFOA)	128		124		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	120		149		49-187	22		30
Perfluoroheptanesulfonic Acid (PFHpS)	99		108		61-179	9		30
Perfluorononanoic Acid (PFNA)	130		131		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	123		128		52-151	4		30
Perfluorodecanoic Acid (PFDA)	131		127		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	119		134		56-173	12		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	127		144		60-166	13		30
Perfluoroundecanoic Acid (PFUnA)	126		133		60-153	5		30
Perfluorodecanesulfonic Acid (PFDS)	119		118		38-156	1		30
Perfluorooctanesulfonamide (FOSA)	114		110		46-170	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	109		136		45-170	22		30
Perfluorododecanoic Acid (PFDoA)	132		133		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	158		**164**	Q	48-158	4		30
Perfluorotetradecanoic Acid (PFTA)	134		133		59-182	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1940894

Report Date: 09/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1286055-2 WG1286055-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99		101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	80		75		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		82		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96		86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		82		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		79		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	94		92		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		61		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		78		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35		39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		70		33-143

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1940894-01A	Plastic 250ml Trizma preserved	A	NA		4.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940894-01B	Plastic 250ml Trizma preserved	A	NA		4.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940894-01C	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	4.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940894-01D	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	4.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940894-02A	Plastic 250ml Trizma preserved	A	NA		4.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940894-02B	Plastic 250ml Trizma preserved	A	NA		4.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L1940894-02C	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	4.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940894-02D	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	4.6	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1940894-03A	Plastic 250ml Trizma preserved	A	NA		4.6	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	HVRA	**Lab Number:**	L1940894
Project Number:	18.8090	**Report Date:**	09/25/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1940894
Project Number:	18.8090	**Report Date:**	09/25/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L1940894
Project Number:	18.8090	**Report Date:**	09/25/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab: 9/7/19

ALPHA Job #: L1940894

Client Information

Client: C.T. Male Associates
Address: 50 Hunt Hwe
Poughkeepsie NY
Phone: (845) 454-4400
Fax:
Email: dlent@ctmale.com

Project Information

Project Name: HVRA
Project Location: Wappingers Falls, NY
Project #: 18.8096
(Use Project name as Project #)
Project Manager: David Lent
ALPHAQuote #:

Turn-Around Time

Standard
Rush (only if pre approved)
Due Date:
# of Days:

Deliverables

- ASP-A
- ASP-B
- EQuIS (1 File)
- EQuIS (4 File)
- Other

Billing Information

- Same as Client Info

PO #

Regulatory Requirement

- NY TOGS
- NY Part 375
- AWQ Standards
- NY CP-51
- NY Restricted Use
- Other
- NY Unrestricted Use
- NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
- NJ
- NY
- Other:

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

PFAS
1,4 Dioxane

Sample Filtration
- Done
- Lab to do

Preservation
- Lab to do

(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	1,4 Dioxane	Sample Specific Comments	Total Bottle
40894.01	HVRA-1601 LTB26-190906	9/6/19	1515	W	DL	X	X		4
.02	HVRA-2 Hudson Park-190906	9/6/19	1600	W	DL	X	X		4
.03	LTB01-190906	9/6/19	1610	W	DL	X			1

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	A											
Preservative	D	O,G											

Relinquished By:	Date/Time	Received By:	Date/Time
	9/6/19 1700	DLinnell AAL	9/6/19 1700
DLinnell AAL	9/6/19 1850		9/6/19 2200
	9/7/19 0230		9/7/19 0230
	9/7/19 0645		9/7/19 0645

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTANTS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

APPENDIX G

DATA USABILITY SUMMARY REPORTS

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1931180

Alpha Analytical

Report Date: August 1, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1931180
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of per- and polyfluorinated alkyl substances (PFAS) and total solids data contained within Alpha Analytical report # L1931180 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Laboratory Duplicate
- Extracted internal standards

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blanks.

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on July 16, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA, which is accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing rinse and trip blank sample analysis. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Rinse Blank / Trip Blank

Nine samples labeled "RB" for rinse blank samples and one trip blank sample was collected. The rinse blanks were used to check that equipment being used would not introduce PFAS to the samples being collected. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. No target compounds were detected above the MDL in the rinse and trip blank samples with the exception of rinse blank samples RB01-190716 and RB08-190716; these samples were taken from shop water and macrocore locations respectively as noted on the COC. Since rinse blank samples are intended to verify equipment is PFAS free prior to sampling in the field, they were not used in data evaluation. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1 and ATTACHMENT_PFAS_2.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of perfluorobutanoic acid (PFBA). Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_3. The blank concentration was compared against the project sample analyte concentrations. All sample concentration of PFBA were less than the MDL and were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and laboratory duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the following exceptions. The perfluorooctanesulfonamide (FOSA) LCS recovery and associated RPD exceeded laboratory acceptance criteria indicating a potential high bias; however, no FOSA data were qualified because the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_ PFAS_4.

Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample that is carried through the same sample preparation and analytical procedures as the native sample in order to determine the precision of the method. Laboratory duplicate sample results were evaluated for compounds where both the native and duplicate sample concentrations were greater than five times the reporting limit. The reported laboratory duplicate RPD was within the laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. Some of the extracted internal standard recoveries were outside of laboratory acceptance criteria for the field samples. Where the extracted internal standard exceeded the laboratory acceptance criteria indicating a potential high bias, and the target result was not detected, no qualification was applied. If the target result was detected or when the extracted internal standard was below the laboratory acceptance criteria, the results were qualified in the Table 1 - Qualifier Summary attached. In addition, there was an extraction labeled standard below laboratory acceptance criteria for one of the method blanks and multiple extraction labeled standards below criteria in the LCS/LCSD for PFAS analysis; however, no data were qualified based on the low recoveries in the method blank and LCS/LCSD as the field sample's extraction internal standards were used for qualification. The

extracted internal standard recoveries that were outside of laboratory acceptance criteria are provided in ATTACHMENT_PFAS_5, ATTACHMENT_PFAS_6, ATTACHMENT_PFAS_7, and ATTACHMENT_PFAS_8.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody.

Table 1 - Qualifier Summary

Alpha Report #: L1931180

QC Item	Sample ID	Compound	Qualification	Comment
Extracted Internal Standard	RB03-190716	PFBA	J	Add 'J' to non-detect result
		NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931180

Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931180-01
Client ID: RB01-190716
Sample Location: Not Specified

Date Collected: 07/16/19 11:35
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 07/29/19 11:53
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/26/19 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.63		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	1.77	J	ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	0.646	J	ng/l	1.97	0.234	1
Perfluorohexanoic Acid (PFHxA)	2.26		ng/l	1.97	0.323	1
Perfluoroheptanoic Acid (PFHpA)	1.09	J	ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	1.03	J	ng/l	1.97	0.370	1
Perfluorooctanoic Acid (PFOA)	2.40		ng/l	1.97	0.232	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.97	0.677	1
Perfluorononanoic Acid (PFNA)	0.531	J	ng/l	1.97	0.307	1
Perfluorooctanesulfonic Acid (PFOS)	2.95		ng/l	1.97	0.496	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.299	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.638	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.964	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.571	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.366	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.322	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1
PFOA/PFOS, Total	5.35		ng/l	1.97	0.232	1

Project Name: HVRA **Lab Number:** L1931180

Project Number: 18.8090 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931180-08
Client ID: RB08-190716
Sample Location: Not Specified

Date Collected: 07/16/19 11:27
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 07/29/19 13:16
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/26/19 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.982	J	ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	0.379	J	ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

ATTACHMENT_PFAS_3

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931180
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/01/19 12:01
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 07/29/19 16:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-03 Batch: WG1265835-1					
Perfluorobutanoic Acid (PFBA)	0.094	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

ATTACHMENT_PFAS_4

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931180
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 02-03		Batch: WG1265835-2 WG1265835-3					
Perfluorobutanoic Acid (PFBA)	99		103		71-135	4		30
Perfluoropentanoic Acid (PFPeA)	103		105		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	94		96		72-128	2		30
Perfluorohexanoic Acid (PFHxA)	108		111		70-132	3		30
Perfluoroheptanoic Acid (PFHpA)	99		101		71-131	2		30
Perfluorohexanesulfonic Acid (PFHxS)	107		114		67-130	6		30
Perfluorooctanoic Acid (PFOA)	102		104		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	101		108		64-140	7		30
Perfluoroheptanesulfonic Acid (PFHpS)	100		102		70-132	2		30
Perfluorononanoic Acid (PFNA)	104		107		72-129	3		30
Perfluorooctanesulfonic Acid (PFOS)	86		95		68-136	10		30
Perfluorodecanoic Acid (PFDA)	108		110		69-133	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	89		100		65-137	12		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	94		107		63-144	13		30
Perfluoroundecanoic Acid (PFUnA)	93		97		64-136	4		30
Perfluorodecanesulfonic Acid (PFDS)	102		111		59-134	8		30
Perfluorooctanesulfonamide (FOSA)	**146**	Q	105		67-137	**33**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	88		102		61-139	15		30
Perfluorododecanoic Acid (PFDoA)	98		102		69-135	4		30
Perfluorotridecanoic Acid (PFTrDA)	93		96		66-139	3		30
Perfluorotetradecanoic Acid (PFTA)	112		114		69-133	2		30

ATTACHMENT_PFAS_5

Project Name: HVRA **Lab Number:** L1931180

Project Number: 18.8090 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931180-03 Date Collected: 07/16/19 10:58

Client ID: RB03-190716 Date Received: 07/16/19

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**55**	Q	60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	66		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	67		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	74		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	62		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	68		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**42**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**40**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	47		26-160

Project Name: HVRA **Lab Number:** L1931180

Project Number: 18.8090 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931180-07 Date Collected: 07/16/19 11:15

Client ID: RB07-190716 Date Received: 07/16/19

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	125		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**183**	Q	16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	146		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	135		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	135		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	141		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	138		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	137		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	139		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	123		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	73		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	122		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	108		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	107		33-143

Project Name: HVRA **Lab Number:** L1931180

Project Number: 18.8090 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/01/19 12:01
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 07/29/19 16:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02-03 Batch: WG1265835-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	62		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	69		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	67		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**0**	Q	1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		26-160

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931180

Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03 Batch: WG1265835-2 WG1265835-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	51	Q	58	Q	60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	60	Q	67		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		85		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	61		63		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68		69		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		81		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		73		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		72		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		80		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		85		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		80		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		76		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		63		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		84		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	0	Q	0	Q	1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		58		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		82		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		71		26-160

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Poughkeepsie, New York

Lab Number: L1931312

Alpha Analytical

Report Date: November 6, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

resourceful. naturally.
engineering and environmental consultants

BARR

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1931312
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of semi-volatile organic compounds (SVOCs), SVOC selective ion monitoring (SIM), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), metals (TAL 23), and cyanide data contained within Alpha Analytical report #L1931312 for C.T. Male Associates, Poughkeepsie, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on July 16 and 17, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Field Blank

Two trip blank samples and two field blank samples were collected; however, the trip and field blank samples collected on July 16, 2019 were canceled by C.T. Male since no PFAS sample was collected on that day. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the trip and field blank samples.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of bis(2-ethylhexyl)phthalate, antimony, iron, and thallium. Excerpts from the laboratory report are provided in ATTACHMENT_SVOC_1 and ATTACHMENT_METALS_1. The blank concentrations for these analytes were compared against the project sample analyte concentration. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogate standards, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and MS/MSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the exception of the PCB LCS recoveries for Aroclor 1016 and Aroclor 1260 and the resulting LCS/LCSD RPD that were outside laboratory acceptance criteria. Excerpt from the laboratory report is provided in ATTACHMENT_PCB_1. Since the low recoveries were consistent with low surrogate recoveries in the LCS and the LCSD recoveries were acceptable, no qualification was applied to the PCB sample results since the issue appears to be isolated to the LCS sample only.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. MS/MSD source samples were not specific to this report; therefore, the MS/MSD data were not used in data evaluation.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria with the exception of the low surrogate recoveries in the PCB LCS as noted above. Excerpt from the laboratory report is provided in ATTACHMENT_PCB_1.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic

acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2′-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory that a perfluorohexanesulfonic acid (PFHxS) continuing calibration verification standard was below laboratory acceptance criteria; however, no data were qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1.

Table 1 - Qualifier Summary

Alpha Report #: L1931312

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-AAG-PW01	Bis(2-ethylhexyl)phthalate	UB	Remove 'J' qualifier and change to non-detect
		Antimony		
		Iron		

ATTACHMENT_SVOC_1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 00:44
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/16/19 17:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260590-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	1.6	J	ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Project Name: HVRA **Lab Number:** L1931312

Project Number: 18.8090 **Report Date:** 11/06/19

Case Narrative (continued)

Report Revision

November 06, 2019: The Semivolatile Organics compound list has been amended to include 2-Methylphenol.

Report Submission

July 31, 2019: This final report includes the results of all requested analyses.

July 31, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1931312-01: One container for the PCBs analysis was received broken; however, there was adequate sample remaining to perform the requested analysis.

L1931312-01: The Perfluorinated Alkyl Acids analysis was requested on the Chain of Custody, but a container was not received. This was later received and is reported as L1931312-04.

L1931312-02: A sample identified as "TRIP BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was not analyzed.

L1931312-03: A sample identified as "FIELD BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was not analyzed.

L1931312-04: The sample identified as "HVRA-AAG-PW01" on the chain of custody was identified as "HVRA-ARFF-PW01" on the container label. At the client's request, the sample is reported as "HVRA-AAG-PW01".

Perfluorinated Alkyl Acids by Isotope Dilution

WG1266320-2: The continuing calibration standard had the response for PFHxS is outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931312

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1261777-2 WG1261777-3									
Aroclor 1016	**28**	Q	85		40-140	**100**	Q	50	A
Aroclor 1260	**26**	Q	86		40-140	**108**	Q	50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	**24**	Q	78		30-150	A
Decachlorobiphenyl	31		100		30-150	A
2,4,5,6-Tetrachloro-m-xylene	**24**	Q	75		30-150	B
Decachlorobiphenyl	31		92		30-150	B

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1931312

Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1262436-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Antimony, Total	0.00090	J	mg/l	0.00400	0.00042	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Iron, Total	0.0215	J	mg/l	0.0700	0.0191	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Thallium, Total	0.00028	J	mg/l	0.00050	0.00014	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	07/20/19 11:10	07/22/19 17:35	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1262816-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/22/19 11:22	07/23/19 01:25	1,7470A	GD

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Poughkeepsie, New York

Lab Number: L1932867

Alpha Analytical

Report Date: August 2, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1932867
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), and total solids data contained within Alpha Analytical report #L1932867 for C.T. Male Associates, Poughkeepsie, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes
- Laboratory duplicate
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on July 24, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA, which is accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Field Blank

One trip blank sample and one field blank sample were collected. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the field blank sample with the exception of perfluorooctanoic acid (PFOA). Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_1 (Field Blank) and ATTACHMENT_PFAS_2 (Trip Blank). PFOA was also detected in the method blank at a slightly lower concentration. The higher blank concentration for this analyte was compared against the project sample analyte concentration. The project sample results were compared to the blank detection by calculating the wet-weight corrected result for soil samples. No data was qualified as all sample concentrations were greater than five times this highest blank detection or non-detect for PFOA.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. Target compounds detected above the MDL in the method blanks included for soil samples perfluorobutanoic acid (PFBA), perfluorodecanoic acid (PFDA), and perfluoroundecanoic acid (PFUnA) and for water PFOA only. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_3 and ATTACHMENT_PFAS_4. The higher blank concentration for each analyte, PFOA was also detected in the field and trip blanks at

higher or similar concentrations, was compared against the project sample analyte concentration. Sample concentrations less than or equal to five times the higher blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, surrogates and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria.

Matrix Spike

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. Sample FIRE POND-01-W served as the 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2FTS) and perfluorooctanesulfonic acid (PFOS) MS source sample for water analysis. The MS percent recovery was below the laboratory criteria; however, no data were qualified because the native sample concentration was greater than four times the spike concentration so spike criteria do not apply. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_5.

Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample that is carried through the same sample preparation and analytical procedures as the native sample in order to determine the precision of the method. Laboratory duplicate sample results were evaluated for compounds where both the native and duplicate sample concentrations were greater than five times the reporting limit. Samples OUTFALL-002-S and FIRE POND-02-W served as the PFAS laboratory duplicate source samples and the RPDs were within the laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. Some of the extracted internal standard recoveries were below laboratory acceptance criteria and the associated results were qualified in the Table 1 - Qualifier Summary attached. The extracted internal standard recoveries that were outside of laboratory acceptance criteria are provided in ATTACHMENT_PFAS_6 and ATTACHMENT_PFAS_7.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody.

Table 1 - Qualifier Summary

Alpha Report #: L1932867

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank Detection	OUTFALL-003-S	PFBA	UB	Remove 'J' qualifier and change to non-detect
	OUTFALL-002-S			
	OUTFALL-004-S			
	OUTFALL-006-S			
	FIRE POND-01-S			
	FIRE POND-02-S			
	OUTFALL-002-S	PFDA	UB	Remove 'J' qualifier and change to non-detect
	OUTFALL-005-S			
	FIRE POND-01-S			
	FIRE POND-02-S			
	OUTFALL-002-S	PFUnA	UB	Remove 'J' qualifier and change to non-detect
	OUTFALL-006-S			
	FIRE POND-02-S			
Extracted Internal Standard	OUTFALL-007-S	FOSA	J	Add 'J' to non-detect result
		PFDS		Add 'J' to non-detect result
	FIRE POND-02-S	PFHxA	J	Result already 'J' qualified
		PFHpA		Result already 'J' qualified
		PFDA		Result already 'J' qualified
		NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
		PFTA		Add 'J' to non-detect result
		PFTrDA		Add 'J' to non-detect result

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-11
Client ID: FIELD BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:45
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 04:13
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.08	0.425	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.08	0.412	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.08	0.248	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.08	0.342	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.08	0.234	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.08	0.392	1
Perfluorooctanoic Acid (PFOA)	1.24	J	ng/l	2.08	0.246	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.08	1.39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.08	0.717	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.08	0.325	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.08	0.525	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.08	0.317	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.08	1.26	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.08	0.675	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.08	0.271	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.08	1.02	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.08	0.604	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.08	0.838	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.08	0.388	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.08	0.341	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.08	0.258	1
PFOA/PFOS, Total	1.24	J	ng/l	2.08	0.246	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-12
Client ID: TRIP BLANK
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 07/24/19 14:50
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/01/19 04:30
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.363	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.352	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.212	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.292	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.200	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.334	1
Perfluorooctanoic Acid (PFOA)	0.886	J	ng/l	1.78	0.210	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.612	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.278	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.448	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.270	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	1.08	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.576	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.231	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.872	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.516	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.715	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.331	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.291	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.221	1
PFOA/PFOS, Total	0.886	J	ng/l	1.78	0.210	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 07/31/19 22:42
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 07/30/19 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07,09 Batch: WG1266199-1					
Perfluorobutanoic Acid (PFBA)	0.098	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	0.113	J	ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	0.048	J	ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/01/19 05:03
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 07/30/19 19:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08,10-12 Batch: WG1266495-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	0.876	J	ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	0.876	J	ng/l	2.00	0.236

Matrix Spike Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932867

Report Date: 08/02/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08,10-12 QC Batch ID: WG1266495-4 QC Sample: L1932867-08 Client ID: FIRE POND-01-W												
Perfluorobutanoic Acid (PFBA)	36.2	37.6	69.1	88		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	107	37.6	146	104		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	6.27	37.6	42.9	97		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	70.4	37.6	110	105		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	24.4	37.6	60.4	96		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	83.4	37.6	126	113		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	26.1	37.6	62.2	96		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	292	37.6	301	**24**	Q	-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	2.70	37.6	39.4	98		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	4.46	37.6	42.2	100		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	214	37.6	225	**29**	Q	-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	0.945J	37.6	40.4	107		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.36	37.6	40.7	91		-	-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.6	34.1	91		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.6	32.3	86		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	37.6	30.8	82		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37.6	33.8	90		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37.6	32.1	85		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	37.6	32.6	87		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.6	35.2	94		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.6	39.0	104		-	-		59-182	-		30

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-06 Date Collected: 07/24/19 13:30

Client ID: OUTFALL-007-S Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	69		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	78		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**0**	Q	1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		26-160

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932867

Project Number: 18.8090 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1932867-09 Date Collected: 07/24/19 14:25
Client ID: FIRE POND-02-S Date Received: 07/24/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	61		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	67		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**59**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**60**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	73		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	62		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	50		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	66		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	66		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**62**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**33**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**30**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	59		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**19**	Q	26-160

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Poughkeepsie, New York

Lab Number: L1932869

Alpha Analytical

Report Date: November 6, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical # L1932869
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), SVOC selective ion monitoring (SIM), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals (TAL 23), and cyanide data contained within Alpha Analytical report # L1932869 for C.T. Male Associates, Poughkeepsie, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Laboratory duplicate
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified as noted below. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on July 23, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Field Blank

One trip blank sample and one field blank sample were collected. The trip blank was analyzed to determine the extent of potential VOC contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the blank samples with the exception of chloromethane and acetone detected in the trip blank. Excerpt from the laboratory report is provided in ATTACHMENT_VOC_1. The blank concentration for each analyte was compared against the project sample analyte concentration. The sample concentration less than or equal to five times the blank sample concentration was qualified "UB" in the Table 1 - Qualifier Summary attached. The sample concentration greater than five times the higher blank detection was not qualified.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of bis(2-ethylhexyl)phthalate. Excerpt from the laboratory report are provided in ATTACHMENT_SVOC_1. The blank concentration for this analyte was compared against the project sample analyte concentration. The sample concentration less than or equal to five times the blank sample concentration was qualified "UB" in the Table 1 - Qualifier Summary attached.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogates, and extracted external standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD, MS/MSD, and laboratory duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the exception of SVOC 4-nitrophenol which had an LCSD above criteria. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC_2. Since the associated sample result was non-detect for 4-nitrophenol, no data was qualified. In addition, the calculated RPD was outside of acceptance criteria for PFAS compounds perfluoroheptanesulfonic acid (PFHpS), perfluorooctanesulfonic acid (PFOS), and perfluorodecanesulfonic acid (PFDS). Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1. Since the LCS and LCSD percent recoveries were acceptable, no data was qualified based on the RPD exceedance.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. The MS/MSD sample results reported by the laboratory included both project and non-project specific samples. Results of MS/MSD samples not specific to this project were not evaluated. Where MS/MSD recoveries and/or associated RPDs failed acceptance criteria and where the sample was associated with another laboratory client, evaluation of the sample results was based on the LCS/LCSD data. Samples OUTFALL-004-W and OUTFALL-001-W served as the MS samples for the PFAS and metals analyses respectively. Metals total potassium and total sodium had an MS percent recovery that was above the limits from sample OUTFALL-001-W; however, no total sodium data were qualified because the native sample concentration was greater than four times the spike concentration so spike criteria do not apply. The total potassium MS had a high percent recovery indicating a potential high bias and the associated positive result is considered estimated and qualified "J" in the Table 1 - Qualifier Summary attached. Excerpt from the laboratory report is provided in ATTACHMENT_METALS_1.

Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample that is carried through the same sample preparation and analytical procedures as the native sample in order to determine the precision of the method. Laboratory duplicate sample results were evaluated for compounds where both the native and duplicate sample concentrations were greater than five times the reporting limit. Sample OUTFALL-001-W served as the PFAS and metals laboratory duplicate source sample and the RPDs were within the laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTrDA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria with the exception of 1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS) for sample OUTFALL-004-W. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_2. Since the corresponding target compound (8:2FTS) was non-detect, no data was qualified based on this.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2′-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory multiple instances where the continuing calibration verification (CCV) standard was outside of acceptance criteria. The perfluorooctanesulfonamide (FOSA) CCV standard was below laboratory acceptance criteria; however, no data were qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Also, the laboratory noted that two branched perfluorooctanesulfonic acid (PFOS) CCV) standard were outside laboratory acceptance criteria; however, no data were qualified because the PFOS CCV was within laboratory acceptance criteria. In addition, the CCV for 8:2FTS had a response above the acceptance criteria for the method. However, the associated samples were non-detect; therefore, no further action was taken. Excerpt from the laboratory report discussing CCVs is provided in ATTACHMENT_PFAS_3.

Table 1 - Qualifier Summary

Alpha Report #: L1932869

QC Item	Sample ID	Compound	Qualification	Comment
Trip Blank Detection	OUTFALL-001-W	Acetone	UB	Change to non-detect
Method Blank Detection	OUTFALL-001-W	Bis(2-ethylhexyl)phthalate	UB	Change to non-detect
Matrix Spike	OUTFALL-001-W	Total Potassium	J	Result already 'J' qualified

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Lab Number: L1932869
Project Number: 18.8090
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1932869-09
Client ID: TRIP BLANK
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 07/23/19 16:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/29/19 22:22
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.92	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Lab Number: L1932869
Project Number: 18.8090
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1932869-09
Client ID: TRIP BLANK
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 07/23/19 16:00
Date Received: 07/24/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.7		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	113		70-130

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/01/19 00:24
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 07/30/19 18:35

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1266486-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	2.5	J	ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1266486-2 WG1266486-3								
4-Nitroaniline	70		83		51-143	17		30
Dibenzofuran	68		76		40-140	11		30
1,2,4,5-Tetrachlorobenzene	57		63		2-134	10		30
Acetophenone	70		78		39-129	11		30
2,4,6-Trichlorophenol	69		77		30-130	11		30
p-Chloro-m-cresol	77		92		23-97	18		30
2-Chlorophenol	73		83		27-123	13		30
2,4-Dichlorophenol	74		84		30-130	13		30
2,4-Dimethylphenol	71		79		30-130	11		30
2-Nitrophenol	74		84		30-130	13		30
4-Nitrophenol	76		**90**	Q	10-80	17		30
2,4-Dinitrophenol	74		81		20-130	9		30
4,6-Dinitro-o-cresol	85		98		20-164	14		30
Phenol	55		66		12-110	18		30
2-Methylphenol	74		82		30-130	10		30
3-Methylphenol/4-Methylphenol	77		91		30-130	17		30
2,4,5-Trichlorophenol	67		80		30-130	18		30
Carbazole	74		87		55-144	16		30
Atrazine	94		105		40-140	11		30
Benzaldehyde	70		77		40-140	10		30
Caprolactam	43		50		10-130	15		30
2,3,4,6-Tetrachlorophenol	64		71		40-140	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 Batch: WG1268635-2 WG1268635-3								
Perfluorobutanoic Acid (PFBA)	106		108		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	112		112		63-161	0		30
Perfluorobutanesulfonic Acid (PFBS)	107		108		65-157	1		30
Perfluorohexanoic Acid (PFHxA)	116		119		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	106		116		58-159	9		30
Perfluorohexanesulfonic Acid (PFHxS)	101		104		69-177	3		30
Perfluorooctanoic Acid (PFOA)	115		102		63-159	12		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	104		106		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	108		160		61-179	**39**	Q	30
Perfluorononanoic Acid (PFNA)	116		113		68-171	3		30
Perfluorooctanesulfonic Acid (PFOS)	86		126		52-151	**38**	Q	30
Perfluorodecanoic Acid (PFDA)	111		113		63-171	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	102		93		56-173	9		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	114		138		60-166	19		30
Perfluoroundecanoic Acid (PFUnA)	112		112		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	96		134		38-156	**33**	Q	30
Perfluorooctanesulfonamide (FOSA)	88		98		46-170	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		96		45-170	2		30
Perfluorododecanoic Acid (PFDoA)	89		86		67-153	3		30
Perfluorotridecanoic Acid (PFTrDA)	92		88		48-158	4		30
Perfluorotetradecanoic Acid (PFTA)	119		98		59-182	19		30

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1932869-06 Date Collected: 07/23/19 15:10

Client ID: OUTFALL-004-W Date Received: 07/24/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	229		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**199**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	53		33-143

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1932869
Project Number: 18.8090 **Report Date:** 11/06/19

Case Narrative (continued)

Report Revision

November 06, 2019: The Semivolatile Organics compound list has been amended to include 2-Methylphenol.

Report Submission

August 07, 2019: This final report includes the results of all requested analyses.

August 01, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L1932869-09: The Trip Blank has a result for acetone present above the reporting limit. The sample vial was verified as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

Perfluorinated Alkyl Acids by Isotope Dilution

L1932869-06: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1268635-2/-3 LCS/LCSD RPDs, associated with L1932869-01 through -08, are above the acceptance criteria for perfluoroheptanesulfonic acid (pfhps) (39%), perfluorooctanesulfonic acid (pfos) (38%), and perfluorodecanesulfonic acid (pfds) (33%).

WG1268999-1: The continuing calibration standard had the response for Perfluorooctanesulfonamide (FOSA) outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1268999-5: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

Project Name: HUDSON VALLEY REGIONAL AIRPORT
Project Number: 18.8090
Lab Number: L1932869
Report Date: 11/06/19

Case Narrative (continued)

WG1268999-5: The continuing calibration standard had the response for 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) above the acceptance criteria for the method. The associated samples were non-detect; therefore, no further action was taken.

Total Metals

The WG1264989-3 MS recovery, performed on L1932869-08, is outside the acceptance criteria for potassium (130%). A post digestion spike was performed and yielded an unacceptable recovery of 127%. The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

The WG1264989-3 MS recovery for sodium (167%), performed on L1932869-08, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 11/06/19

Matrix Spike Analysis
Batch Quality Control

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Number: L1932869

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1264989-3 QC Sample: L1932869-08 Client ID: OUTFALL-001-W												
Aluminum, Total	ND	2	2.08	104		-	-		75-125	-		20
Antimony, Total	0.016J	0.5	0.519	104		-	-		75-125	-		20
Arsenic, Total	0.003J	0.12	0.142	118		-	-		75-125	-		20
Barium, Total	0.029	2	2.00	98		-	-		75-125	-		20
Beryllium, Total	ND	0.05	0.050	100		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.055	107		-	-		75-125	-		20
Calcium, Total	44.1	10	55.5	114		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.199	100		-	-		75-125	-		20
Cobalt, Total	ND	0.5	0.492	98		-	-		75-125	-		20
Copper, Total	ND	0.25	0.257	103		-	-		75-125	-		20
Iron, Total	0.588	1	1.66	107		-	-		75-125	-		20
Lead, Total	ND	0.51	0.524	103		-	-		75-125	-		20
Magnesium, Total	10.3	10	20.3	100		-	-		75-125	-		20
Manganese, Total	0.712	0.5	1.21	100		-	-		75-125	-		20
Nickel, Total	ND	0.5	0.490	98		-	-		75-125	-		20
Potassium, Total	2.40J	10	13.0	**130**	Q	-	-		75-125	-		20
Selenium, Total	ND	0.12	0.138	115		-	-		75-125	-		20
Silver, Total	ND	0.05	0.053	105		-	-		75-125	-		20
Sodium, Total	81.3	10	98.0	**167**	Q	-	-		75-125	-		20
Thallium, Total	ND	0.12	0.119	99		-	-		75-125	-		20
Vanadium, Total	ND	0.5	0.515	103		-	-		75-125	-		20

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1934423

Alpha Analytical

Report Date: August 16, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1934423
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of 1,4-dioxane and per- and polyfluorinated alkyl substances (PFAS) data contained within Alpha Analytical report #L1934423 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on July 31 and August 1, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA, which is accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Field Blank

One trip blank sample and one field blank sample were collected. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the trip and field blank samples with the exception of perfluorohexanoic acid (PFHxA) in the trip blank sample. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1. PFHxA was also detected in the method blank at a slightly higher concentration. Data evaluation based on blank detections is addressed under the method blank section.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of PFHxA. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_2. The higher blank concentration for this analyte was compared against the project sample analyte concentration. The sample concentration less than or equal to five times the higher blank sample concentration was qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the higher blank detection were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), surrogate standards, and extracted internal standard to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and MS/MSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chain of custody.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory that two branched perfluorohexanesulfonic acid (br-PFHxS) continuing calibration verification (CCV) standards were outside laboratory acceptance criteria; however, no data were qualified because the PFHxS CCVs were within laboratory acceptance criteria. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_3.

Table 1 - Qualifier Summary

Alpha Report #: L1934423

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-MW-3-190801	PFHxA	UB	Remove 'J' qualifier and change to non-detect

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

SAMPLE RESULTS

Lab ID: L1934423-03
Client ID: HVRA-LTB01-190731
Sample Location: WAPPINGERS FALLS

Date Collected: 07/31/19 00:00
Date Received: 08/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/15/19 03:53
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.375	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.364	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	0.423	J	ng/l	1.84	0.301	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.632	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.463	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.596	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.901	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.533	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.739	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.342	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.217	1

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/14/19 22:30
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/12/19 09:51

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1271287-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.472	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HUDSON VALLEY REGIONAL AIRPORT **Lab Number:** L1934423

Project Number: 18.8090 **Report Date:** 08/16/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1271799-2: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

WG1271799-3: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 08/16/19

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1934623

Alpha Analytical

Report Date: November 13, 2019

Prepared by

Barr Engineering Co.

November 13, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1934623
Date: November 13, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of semi-volatile organic compounds (SVOCs), SVOC selective ion monitoring (SIM), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), pesticides, and polychlorinated biphenyls (PCBs) data contained within Alpha Analytical report #L1934623 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on August 1 and 2, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Field Blank

One trip blank sample and one field blank sample were collected. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the trip and field blank samples with the exception of perfluorohexanoic acid (PFHxA). Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_1 (FTB) and ATTACHMENT_PFAS_2 (LTB). PFHxA was also detected in the method blank. The highest blank concentration for this analyte was compared against the project sample analyte concentrations. No data were qualified since the sample concentrations were greater than five times the highest blank detection.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses with the exception of the SVOC SIM reanalysis for sample HVRA-BFL2S-190801 which Alpha re-extracted due to 2-methylnaphthalene being detected above the reporting limit in the method blank. Since the re-extraction exceeded the holding time, the original results were evaluated in this data review. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blanks with the exception of PFHxA in the PFAS analysis and fluorene, phenanthrene, and 2-methylnaphthalene in the SVOC SIM analysis. Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_3 and ATTACHMENT_SVOC_SIM_1. PFHxA data

evaluation based on blank detections is addressed under the trip blank / field blank section. The method blank concentrations for the SVOC SIM analytes were compared against the project sample analyte concentrations. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogate standards, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and MS/MSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the exception of the p-chloro-3-resol LCS recovery and the 4-nitrophenol LCS/LCSD recoveries in the SVOC analysis that exceeded laboratory acceptance criteria indicating a potential high bias; however, no data were qualified because the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC_1.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. Sample HVRA-DLMW29-190802 served as the MS/MSD source sample. The MS/MSD percent recoveries and RPDs were within laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria with the exception of one of the three acid fraction surrogates in the SVOC SIM analysis that exceeded the laboratory acceptance criteria indicating a potential high bias;

however, no data were qualified since the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC_SIM_2.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria with the exception of the extracted standards associated with 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS) and 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) that exceeded the laboratory acceptance criteria indicating a potential high bias; however, no data were qualified since the associate sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_4.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chain of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2′-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory that a branched perfluorohexanesulfonic acid (br-PFHxS) continuing calibration verification (CCV) standard and a branched perfluorooctanesulfonic acid (br-PFOS) CCV were outside laboratory acceptance criteria; however, no data were qualified because the PFHxS CCV and PFOS CCV were within laboratory acceptance criteria. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_5.

Table 1 - Qualifier Summary

Alpha Report #: L1934623

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-BFL-3S-190801	2-Methylnaphthalene	U	Remove 'J' qualifier, retain 'B', and change to non-detect
	HVRA-BFL2S-190801	Phenanthrene	UB	Remove 'J' qualifier and change to non-detect
		2-Methylnaphthalene	U	Retain 'B' qualifier and change to non-detect
	HVRA-DLMW20-190802	2-Methylnaphthalene	U	Remove 'J' qualifier, retain 'B', and change to non-detect

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934623

Report Date: 11/13/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1269707-2 WG1269707-3								
4-Nitroaniline	87		90		51-143	3		30
Dibenzofuran	80		78		40-140	3		30
1,2,4,5-Tetrachlorobenzene	75		67		2-134	11		30
Acetophenone	72		65		39-129	10		30
2,4,6-Trichlorophenol	94		89		30-130	5		30
p-Chloro-m-cresol	**98**	Q	92		23-97	6		30
2-Chlorophenol	75		66		27-123	13		30
2,4-Dichlorophenol	83		77		30-130	8		30
2,4-Dimethylphenol	71		72		30-130	1		30
2-Nitrophenol	85		75		30-130	13		30
4-Nitrophenol	**87**	Q	**82**	Q	10-80	6		30
2,4-Dinitrophenol	93		90		20-130	3		30
4,6-Dinitro-o-cresol	102		100		20-164	2		30
Phenol	58		53		12-110	9		30
2-Methylphenol	77		70		30-130	10		30
3-Methylphenol/4-Methylphenol	82		75		30-130	9		30
2,4,5-Trichlorophenol	93		88		30-130	6		30
Carbazole	100		101		55-144	1		30
Atrazine	138		136		40-140	1		30
Benzaldehyde	72		60		40-140	18		30
Caprolactam	55		54		10-130	2		30
2,3,4,6-Tetrachlorophenol	87		86		40-140	1		30

ATTACHMENT_SVOC_SIM_1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 11/13/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/19 13:44
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/07/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05 Batch: WG1269717-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.03	J	ug/l	0.10	0.01
Phenanthrene	0.06	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	0.32		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934623

Report Date: 11/13/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1269717-2 WG1269717-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	81		53		21-120
Phenol-d6	66		44		10-120
Nitrobenzene-d5	115		81		23-120
2-Fluorobiphenyl	105		80		15-120
2,4,6-Tribromophenol	**128**	Q	116		10-120
4-Terphenyl-d14	115		111		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 11/13/19

SAMPLE RESULTS

Lab ID: L1934623-06
Client ID: HVRA-FTB01-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 14:30
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 11:13
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	0.376	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.218	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 11/13/19

SAMPLE RESULTS

Lab ID: L1934623-07
Client ID: HVRA-LTB01-190802
Sample Location: WAPPINGERS FALLS

Date Collected: 08/02/19 00:00
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 01:34
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.385	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.374	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.224	1
Perfluorohexanoic Acid (PFHxA)	0.389	J	ng/l	1.89	0.309	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.212	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.355	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.649	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.294	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.475	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.287	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.14	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.611	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.245	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.924	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.547	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.758	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.351	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.309	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.234	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 11/13/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/15/19 13:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/14/19 08:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-02,07 Batch: WG1272147-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.376	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934623
Report Date: 11/13/19

SAMPLE RESULTS

Lab ID: L1934623-03
Client ID: HVRA-DLMW20-190802
Sample Location: WAPPINGERS FALLS
Date Collected: 08/02/19 11:35
Date Received: 08/02/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	67		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**275**	Q	1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**209**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143

ATTACHMENT_PFAS_5

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934623
Report Date: 11/13/19

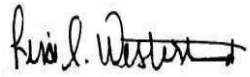
Case Narrative (continued)

analytes. Please refer to the surrogate section of the report for details.

WG1272733-1: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

WG1273283-1: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Lisa Westerlind

Title: Technical Director/Representative Date: 11/13/19

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1934860

Alpha Analytical

Report Date: August 21, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical # L1934860
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals (TAL 23), and cyanide data contained within Alpha Analytical report # L1934860 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified as noted below. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on August 5, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and rinse blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank/ Rinse Blank

Two trip blank sample and one rinse blank sample were collected. The trip blank samples were analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. No target compounds were detected above the MDL in the trip blank sample with the exception of perfluorohexanoic acid (PFHxA) from blank HVRA-FTB01-191805 and PFHxA and perfluorohexanesulfonic acid (PFHxS) from blank HVRA-LTB01-190805. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1 and ATTACHMENT_PFAS_2 respectively. The project sample results were compared to the trip blank detection by calculating the wet-weight corrected result for soil samples. No data was qualified as all sample concentrations were greater than five times the blank detection. The rinse blank was used to check that equipment being used would not introduce PFAS to the samples being collected. There were multiple compounds detected in the rinse blank sample as shown in the laboratory report excerpt included in ATTACHMENT_PFAS_3. The detects were compared to the sample data and no data was qualified based on these blank detections.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. The method blanks were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of PFAS compound Perfluorobutanoic Acid (PFBA) and metals arsenic and sodium in soils. Excerpt from

the laboratory report are provided in ATTACHMENT_PFAS_4 and ATTACHMENT_METALS_1 respectively. The blank concentrations for these analytes were compared against the project sample analyte concentration as discussed above. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogates, and extracted internal standard to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD, MS/MSD, and laboratory duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the following exceptions. The soil SVOC LCS/LCSD RPDs exceeded laboratory acceptance criteria for multiple compounds; however, no data from the SVOC analysis were qualified if the LCS and LCSD percent recoveries were acceptable. The following compounds had an LCS or LCSD with a percent recovery below the acceptance criteria: 3,3'-Dichlorobenzidine and 1,4-Dioxane and the results for sample HVRA-MW100-6.0 were qualified as noted in the Table 1 - Qualifier Summary attached. In addition, the p-chloro-3-resol LCS recovery and the 4-nitrophenol LCS recovery in the SVOC analysis exceeded laboratory acceptance criteria indicating a potential high bias; however, no data were qualified because the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC_1. The LCS and LCSD percent recoveries were below laboratory acceptance criteria for total cyanide and samples HVRA-MW100-6.0 and HVRA-MW101-8.0 were qualified as noted in the Table 1 - Qualifier Summary attached and included in the excerpt from the laboratory report in ATTACHMENT_CYANIDE_1.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. Sample HVRA-MW100-6.0 served as the MS sample for all analysis. There were multiple tested compounds that had percent recovery that were outside the laboratory limits indicating a potential bias. However, the sample results were not evaluated if the sample detection was greater than four times the

spike concentration. A low percent may indicate a potential low bias while a high percent recovery may indicate a potential high bias. For a low percent recovery, positive results are considered estimated and qualified "J" while non-detects are estimated and qualified "UJ". For a high percent recovery, positive results are considered estimated and qualified "J" and non-detects are not qualified. The HVRA-MW100-6.0 sample data that was qualified is noted in the Table 1 – Qualifier Summary attached. The associated laboratory report excerpts are provided as ATTACHMENT_VOC_1, ATTACHMENT_PFAS_5, ATTACHMENT_SVOC_2, and ATTACHMENT_METALS_2.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Laboratory Duplicate

A laboratory duplicate is an additional sample typically taken from an existing sample bottle that is carried through the same sample preparation and analytical procedures as the project sample. The results from the duplicate analyses are used to evaluate analytical precision by the calculation of the RPD. The RPDs were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTrDA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria with the exception of N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA) for sample HVRA-MW100-6.0 and multiple for sample HVRA-MW101-8.0 that were below acceptance criteria. The associated sample data that was qualified is noted in the Table 1 – Qualifier Summary attached. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_6 and ATTACHMENT_PFAS_7 respectively.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2'-oxybis(1-chloropropane). This revised name was included in EPA method

8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory multiple instances where the continuing calibration verification (CCV) standard was outside of acceptance criteria. The 8:2FTS, PFDS, and NEtFOSAA CCV standards were outside of laboratory acceptance criteria as noted in the report; however, no data were qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Also, the laboratory noted that two branched PFHxS CCV standard were outside laboratory acceptance criteria; however, no data were qualified because the PFHxS CCV was within laboratory acceptance criteria. Excerpt from the laboratory report discussing CCVs is provided in ATTACHMENT_PFAS_8.

Table 1 - Qualifier Summary

Alpha Report #: L1934860

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank Detection	HVRA-MW100-6.0	PFBA	UB	Remove 'J' qualifier and change to non-detect
LCS/LCSD	HVRA-MW100-6.0	3,3'-Dichlorobenzidine	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,4-Dioxane (SVOC)	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Total Cyanide	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	Total Cyanide	J	Add 'J' to non-detect result
MS/MSD	HVRA-MW100-6.0	Dibromochloromethane	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,1,2-Trichloroethane	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Tetrachloroethene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Chlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	trans-1,3-Dichloropropene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Bromoform	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,1,2,2-Tetrachloroethane	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Toluene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Ethylbenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,2-Dichlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,3-Dichlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,4-Dichlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	p/m-Xylene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	o-Xylene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Styrene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	4-Methyl-2-pentanone	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	2-Hexanone	J	Add 'J' to non-detect result

Table 1 - Qualifier Summary

Alpha Report #: L1934860

QC Item	Sample ID	Compound	Qualification	Comment
MS/MSD (cont.)	HVRA-MW100-6.0	1,2-Dibromoethane	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,2-Dibromo-3-chloropropane	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Isopropylbenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,2,3-Trichlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	1,2,4-Trichlorobenzene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	FOSA	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	3,3'-Dichlorobenzidine	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Hexachlorocyclopentadiene	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	2,4-Dinitrophenol	J	Add 'J' to non-detect result
	HVRA-MW100-6.0	Total Cadmium	J	Add 'J' to detected result
	HVRA-MW100-6.0	Total Chromium	J	Add 'J' to detected result
	HVRA-MW100-6.0	Total Copper	J	Add 'J' to detected result
	HVRA-MW100-6.0	Total Lead	J	Add 'J' to detected result
	HVRA-MW100-6.0	Total Zinc	J	Add 'J' to detected result
	HVRA-MW100-6.0	Total Mercury	J	Add 'J' to detected result
Extracted Internal Standard	HVRA-MW100-6.0	NMeFOSAA	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	PFUnA	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	NEtFOSAA	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	PFDoA	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	PFTA	J	Add 'J' to non-detect result
	HVRA-MW101-8.0	PFTrA	J	Add 'J' to non-detect result

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Methylene chloride	ND	87.9	79	90		100	106		70-130	23		30
1,1-Dichloroethane	ND	87.9	86	98		110	115		70-130	23		30
Chloroform	ND	87.9	82	93		100	110		70-130	24		30
Carbon tetrachloride	ND	87.9	80	91		100	107		70-130	23		30
1,2-Dichloropropane	ND	87.9	79	89		100	107		70-130	25		30
Dibromochloromethane	ND	87.9	51	**58**	Q	69	74		70-130	**31**	Q	30
1,1,2-Trichloroethane	ND	87.9	56	**63**	Q	75	80		70-130	30		30
Tetrachloroethene	ND	87.9	42	**47**	Q	58	**62**	Q	70-130	**33**	Q	30
Chlorobenzene	ND	87.9	38	**44**	Q	54	**57**	Q	70-130	**34**	Q	30
Trichlorofluoromethane	ND	87.9	90	102		110	117		70-139	20		30
1,2-Dichloroethane	ND	87.9	71	81		91	97		70-130	25		30
1,1,1-Trichloroethane	ND	87.9	86	98		110	115		70-130	22		30
Bromodichloromethane	ND	87.9	75	85		97	103		70-130	26		30
trans-1,3-Dichloropropene	ND	87.9	45	**51**	Q	61	**65**	Q	70-130	**31**	Q	30
cis-1,3-Dichloropropene	ND	87.9	66	75		86	91		70-130	27		30
Bromoform	ND	87.9	40	**46**	Q	60	**63**	Q	70-130	**40**	Q	30
1,1,2,2-Tetrachloroethane	ND	87.9	44	**50**	Q	65	**69**	Q	70-130	**38**	Q	30
Benzene	ND	87.9	79	90		100	106		70-130	23		30
Toluene	ND	87.9	49	**56**	Q	66	70		70-130	30		30
Ethylbenzene	ND	87.9	40	**45**	Q	57	**60**	Q	70-130	**35**	Q	30
Chloromethane	ND	87.9	70	80		91	96		52-130	25		30
Bromomethane	ND	87.9	94	107		120	128		57-147	25		30
Vinyl chloride	ND	87.9	85	96		100	108		67-130	19		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Chloroethane	ND	87.9	89	101		110	117		50-151	21		30
1,1-Dichloroethene	ND	87.9	89	102		110	118		65-135	22		30
trans-1,2-Dichloroethene	ND	87.9	79	90		99	105		70-130	22		30
Trichloroethene	ND	87.9	70	79		89	95		70-130	24		30
1,2-Dichlorobenzene	ND	87.9	20	**23**	Q	35	**37**	Q	70-130	**55**	Q	30
1,3-Dichlorobenzene	ND	87.9	19	**22**	Q	33	**35**	Q	70-130	**55**	Q	30
1,4-Dichlorobenzene	ND	87.9	18	**20**	Q	31	**33**	Q	70-130	**55**	Q	30
Methyl tert butyl ether	ND	87.9	81	92		110	112		66-130	26		30
p/m-Xylene	ND	176	71	**41**	Q	100	**55**	Q	70-130	**37**	Q	30
o-Xylene	ND	176	76	**43**	Q	110	**58**	Q	70-130	**36**	Q	30
cis-1,2-Dichloroethene	ND	87.9	77	88		97	103		70-130	23		30
Styrene	ND	176	67	**38**	Q	97	**51**	Q	70-130	**37**	Q	30
Dichlorodifluoromethane	ND	87.9	63	72		79	84		30-146	22		30
Acetone	8.2J	87.9	67	76		99	105		54-140	**38**	Q	30
Carbon disulfide	ND	87.9	77	88		97	103		59-130	22		30
2-Butanone	ND	87.9	65	74		81	86		70-130	22		30
4-Methyl-2-pentanone	ND	87.9	55	**62**	Q	74	79		70-130	30		30
2-Hexanone	ND	87.9	51	**58**	Q	68	72		70-130	29		30
Bromochloromethane	ND	87.9	72	82		92	98		70-130	24		30
1,2-Dibromoethane	ND	87.9	48	**54**	Q	64	**68**	Q	70-130	30		30
1,2-Dibromo-3-chloropropane	ND	87.9	34	**39**	Q	51	**54**	Q	68-130	**39**	Q	30
Isopropylbenzene	ND	87.9	32	**36**	Q	52	**55**	Q	70-130	**48**	Q	30
1,2,3-Trichlorobenzene	ND	87.9	11	**12**	Q	22	**23**	Q	70-130	**69**	Q	30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1271219-6 WG1271219-7 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
1,2,4-Trichlorobenzene	ND	87.9	11	**12**	Q	22	**23**	Q	70-130	**67**	Q	30
Methyl Acetate	ND	87.9	100	118		140	**150**	Q	51-146	30		30
Cyclohexane	ND	87.9	82	93		100	110		59-142	24		30
1,4-Dioxane	ND	4400	4100	94		4900	103		65-136	16		30
Freon-113	ND	87.9	90	102		110	117		50-139	20		30
Methyl cyclohexane	ND	87.9	75	85		100	107		70-130	30		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		93		70-130
4-Bromofluorobenzene	103		109		70-130
Dibromofluoromethane	104		103		70-130
Toluene-d8	90		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
Acenaphthene	90		53		31-137	**52**	Q	50
Hexachlorobenzene	94		55		40-140	**52**	Q	50
Bis(2-chloroethyl)ether	78		49		40-140	46		50
2-Chloronaphthalene	97		58		40-140	50		50
3,3'-Dichlorobenzidine	59		**39**	Q	40-140	41		50
2,4-Dinitrotoluene	115		68		40-132	**51**	Q	50
2,6-Dinitrotoluene	117		69		40-140	**52**	Q	50
Fluoranthene	98		57		40-140	**53**	Q	50
4-Chlorophenyl phenyl ether	96		56		40-140	**53**	Q	50
4-Bromophenyl phenyl ether	94		55		40-140	**52**	Q	50
Bis(2-chloroisopropyl)ether	68		44		40-140	43		50
Bis(2-chloroethoxy)methane	82		52		40-117	45		50
Hexachlorobutadiene	90		58		40-140	43		50
Hexachlorocyclopentadiene	74		42		40-140	**55**	Q	50
Hexachloroethane	81		56		40-140	36		50
Isophorone	86		53		40-140	47		50
Naphthalene	87		53		40-140	49		50
Nitrobenzene	92		56		40-140	49		50
NDPA/DPA	97		58		36-157	50		50
n-Nitrosodi-n-propylamine	89		52		32-121	**52**	Q	50
Bis(2-ethylhexyl)phthalate	107		66		40-140	47		50
Butyl benzyl phthalate	109		66		40-140	49		50
Di-n-butylphthalate	102		61		40-140	50		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
Di-n-octylphthalate	108		65		40-140	50		50
Diethyl phthalate	102		60		40-140	**52**	Q	50
Dimethyl phthalate	103		61		40-140	**51**	Q	50
Benzo(a)anthracene	99		58		40-140	**52**	Q	50
Benzo(a)pyrene	94		56		40-140	**51**	Q	50
Benzo(b)fluoranthene	100		58		40-140	**53**	Q	50
Benzo(k)fluoranthene	96		60		40-140	46		50
Chrysene	93		56		40-140	50		50
Acenaphthylene	101		60		40-140	**51**	Q	50
Anthracene	96		55		40-140	**54**	Q	50
Benzo(ghi)perylene	100		60		40-140	50		50
Fluorene	94		56		40-140	**51**	Q	50
Phenanthrene	90		53		40-140	**52**	Q	50
Dibenzo(a,h)anthracene	94		57		40-140	49		50
Indeno(1,2,3-cd)pyrene	96		58		40-140	49		50
Pyrene	98		57		35-142	**53**	Q	50
Biphenyl	99		58		37-127	**52**	Q	50
4-Chloroaniline	63		43		40-140	38		50
2-Nitroaniline	124		73		47-134	**52**	Q	50
3-Nitroaniline	82		56		26-129	38		50
4-Nitroaniline	101		60		41-125	**51**	Q	50
Dibenzofuran	96		58		40-140	49		50
2-Methylnaphthalene	90		54		40-140	50		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 Batch: WG1271080-2 WG1271080-3								
1,2,4,5-Tetrachlorobenzene	94		55		40-117	**52**	Q	50
Acetophenone	87		55		14-144	45		50
2,4,6-Trichlorophenol	102		61		30-130	50		50
p-Chloro-m-cresol	**108**	Q	63		26-103	**53**	Q	50
2-Chlorophenol	87		56		25-102	43		50
2,4-Dichlorophenol	97		60		30-130	47		50
2,4-Dimethylphenol	102		62		30-130	49		50
2-Nitrophenol	114		74		30-130	43		50
4-Nitrophenol	**120**	Q	70		11-114	**53**	Q	50
2,4-Dinitrophenol	105		56		4-130	**61**	Q	50
4,6-Dinitro-o-cresol	125		73		10-130	**53**	Q	50
Pentachlorophenol	91		50		17-109	**58**	Q	50
Phenol	86		53		26-90	47		50
2-Methylphenol	88		56		30-130.	44		50
3-Methylphenol/4-Methylphenol	97		59		30-130	49		50
2,4,5-Trichlorophenol	111		63		30-130	**55**	Q	50
Carbazole	96		56		54-128	**53**	Q	50
Atrazine	102		62		40-140	49		50
Benzaldehyde	86		56		40-140	42		50
Caprolactam	97		58		15-130	50		50
2,3,4,6-Tetrachlorophenol	101		57		40-140	**56**	Q	50
1,4-Dioxane	56		**39**	Q	40-140	36		50

ATTACHMENT_SVOC_2

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Acenaphthene	ND	1420	1200	85		1100	78		31-137	9		50
Hexachlorobenzene	ND	1420	1200	85		1000	71		40-140	18		50
Bis(2-chloroethyl)ether	ND	1420	1200	85		1000	71		40-140	18		50
2-Chloronaphthalene	ND	1420	1300	92		1200	85		40-140	8		50
3,3'-Dichlorobenzidine	ND	1420	550	**39**	Q	530	**37**	Q	40-140	4		50
2,4-Dinitrotoluene	ND	1420	1500	110		1300	92		40-132	14		50
2,6-Dinitrotoluene	ND	1420	1500	110		1300	92		40-140	14		50
Fluoranthene	130	1420	1200	76		1200	75		40-140	0		50
4-Chlorophenyl phenyl ether	ND	1420	1200	85		1100	78		40-140	9		50
4-Bromophenyl phenyl ether	ND	1420	1200	85		1100	78		40-140	9		50
Bis(2-chloroisopropyl)ether	ND	1420	1000	71		990	70		40-140	1		50
Bis(2-chloroethoxy)methane	ND	1420	1200	85		1100	78		40-117	9		50
Hexachlorobutadiene	ND	1420	1200	85		1100	78		40-140	9		50
Hexachlorocyclopentadiene	ND	1420	610	43		330J	**23**	Q	40-140	**60**	Q	50
Hexachloroethane	ND	1420	1200	85		1000	71		40-140	18		50
Isophorone	ND	1420	1200	85		1200	85		40-140	0		50
Naphthalene	ND	1420	1200	85		1100	78		40-140	9		50
Nitrobenzene	ND	1420	1300	92		1300	92		40-140	0		50
NDPA/DPA	ND	1420	1300	92		1200	85		36-157	8		50
n-Nitrosodi-n-propylamine	ND	1420	1200	85		1200	85		32-121	0		50
Bis(2-ethylhexyl)phthalate	ND	1420	1400	99		1300	92		40-140	7		50
Butyl benzyl phthalate	ND	1420	1300	92		1200	85		40-140	8		50
Di-n-butylphthalate	ND	1420	1200	85		1200	85		40-140	0		50

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05 QC Batch ID: WG1271080-4 WG1271080-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
1,2,4,5-Tetrachlorobenzene	ND	1420	1300	92		1200	85		40-117	8		50
Acetophenone	ND	1420	1200	85		1200	85		14-144	0		50
2,4,6-Trichlorophenol	ND	1420	1500	110		1400	99		30-130	7		50
p-Chloro-m-cresol	ND	1420	1500	**110**	Q	1300	92		26-103	14		50
2-Chlorophenol	ND	1420	1300	92		1200	85		25-102	8		50
2,4-Dichlorophenol	ND	1420	1400	99		1300	92		30-130	7		50
2,4-Dimethylphenol	ND	1420	1300	92		1300	92		30-130	0		50
2-Nitrophenol	ND	1420	1600	110		1400	99		30-130	13		50
4-Nitrophenol	ND	1420	1500	110		1400	99		11-114	7		50
2,4-Dinitrophenol	ND	1420	330J	23		ND	**0**	Q	4-130	NC		50
4,6-Dinitro-o-cresol	ND	1420	470	33		160J	11		10-130	**98**	Q	50
Pentachlorophenol	ND	1420	1400	99		1200	85		17-109	15		50
Phenol	ND	1420	1100	78		1100	78		26-90	0		50
2-Methylphenol	ND	1420	1200	85		1200	85		30-130.	0		50
3-Methylphenol/4-Methylphenol	ND	1420	1300	92		1200	85		30-130	8		50
2,4,5-Trichlorophenol	ND	1420	1600	110		1400	99		30-130	13		50
Carbazole	ND	1420	1200	85		1100	78		54-128	9		50
Atrazine	ND	1420	1400	99		1200	85		40-140	15		50
Benzaldehyde	ND	1420	1300	92		1200	85		40-140	8		50
Caprolactam	ND	1420	1200	85		1200	85		15-130	0		50
2,3,4,6-Tetrachlorophenol	ND	1420	1400	99		1300	92		40-140	7		50
1,4-Dioxane	ND	1420	700	49		660	47		40-140	6		50

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-02
Client ID: HVRA-FTB01-191805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 13:40
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:24
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.99	0.406	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.99	0.394	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.99	0.237	1
Perfluorohexanoic Acid (PFHxA)	0.370	J	ng/l	1.99	0.327	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.99	0.224	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.99	0.374	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.99	0.235	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.99	1.33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.99	0.685	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.99	0.311	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.99	0.502	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.99	0.303	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.99	1.21	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.99	0.645	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.99	0.259	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.99	0.976	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.99	0.578	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.99	0.801	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.99	0.370	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.99	0.326	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.99	0.247	1
PFOA/PFOS, Total	ND		ng/l	1.99	0.235	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-03
Client ID: HVRA-LTB01-190805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 00:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:41
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.220	1
Perfluorohexanoic Acid (PFHxA)	0.321	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	0.439	J	ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.635	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.742	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.218	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-04
Client ID: HVRA-RB01-190805
Sample Location: WAPPINGER'S FALLS, NY

Date Collected: 08/05/19 14:25
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/16/19 16:57
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/15/19 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.959	J	ng/l	2.26	0.462	1
Perfluoropentanoic Acid (PFPeA)	0.665	J	ng/l	2.26	0.448	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.26	0.269	1
Perfluorohexanoic Acid (PFHxA)	1.66	J	ng/l	2.26	0.371	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.26	0.255	1
Perfluorohexanesulfonic Acid (PFHxS)	1.22	J	ng/l	2.26	0.425	1
Perfluorooctanoic Acid (PFOA)	0.792	J	ng/l	2.26	0.267	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.26	1.51	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.26	0.778	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.26	0.353	1
Perfluorooctanesulfonic Acid (PFOS)	3.72		ng/l	2.26	0.570	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.26	0.344	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.39	J	ng/l	2.26	1.37	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.26	0.733	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.26	0.294	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.26	1.11	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.26	0.656	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.26	0.910	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.26	0.421	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.26	0.370	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.26	0.280	1
PFOA/PFOS, Total	4.51	J	ng/l	2.26	0.267	1

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/13/19 16:05
Analyst: JW

Extraction Method: EPA 537(M)
Extraction Date: 08/09/19 00:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,05 Batch: WG1270274-1					
Perfluorobutanoic Acid (PFBA)	0.097	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

ATTACHMENT_PFAS_5

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270274-4 WG1270274-5 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Perfluorobutanoic Acid (PFBA)	0.138J	5.1	5.22	102		5.38	105		71-135	3		30
Perfluoropentanoic Acid (PFPeA)	0.416J	5.1	5.23	103		5.32	104		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.52	4.27	95		4.32	95		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	0.442J	5.1	5.62	110		5.59	109		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	0.275J	5.1	5.43	106		5.54	108		71-131	2		30
Perfluorohexanesulfonic Acid (PFHxS)	1.64	4.65	6.84	112		6.93	113		67-130	1		30
Perfluorooctanoic Acid (PFOA)	0.287J	5.1	5.40	106		5.65	110		69-133	5		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	4.85	5.15	106		5.67	116		64-140	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.143J	4.85	5.83	120		5.50	113		70-132	6		30
Perfluorononanoic Acid (PFNA)	0.182J	5.1	5.09	100		5.34	104		72-129	5		30
Perfluorooctanesulfonic Acid (PFOS)	36.8	4.72	41.6	102		42.5	120		68-136	2		30
Perfluorodecanoic Acid (PFDA)	0.164J	5.1	5.44	107		5.49	107		69-133	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.9	4.80	98		5.16	105		65-137	7		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	5.1	5.78	113		5.93	116		63-144	3		30
Perfluoroundecanoic Acid (PFUnA)	0.088J	5.1	5.18	102		5.34	104		64-136	3		30
Perfluorodecanesulfonic Acid (PFDS)	0.190J	4.93	5.74	116		5.45	110		59-134	5		30
Perfluorooctanesulfonamide (FOSA)	ND	5.1	2.58	**51**	Q	2.61	**51**	Q	67-137	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	5.1	4.96	97		5.23	102		61-139	5		30
Perfluorododecanoic Acid (PFDoA)	0.124J	5.1	5.50	108		5.62	110		69-135	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	5.1	5.27	103		5.67	111		66-139	7		30
Perfluorotetradecanoic Acid (PFTA)	0.074J	5.1	5.30	104		5.56	108		69-133	5		30

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1934860
Report Date: 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-01
Client ID: HVRA-MW100-6.0
Sample Location: WAPPINGER'S FALLS, NY
Date Collected: 08/05/19 13:00
Date Received: 08/05/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	72		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**43**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		26-160

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

SAMPLE RESULTS

Lab ID: L1934860-05 Date Collected: 08/05/19 15:00

Client ID: HVRA-MW101-8.0 Date Received: 08/05/19

Sample Location: WAPPINGER'S FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	61		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	80		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	66		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	78		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	55		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	69		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	65		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**27**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**62**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**25**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**50**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**16**	Q	26-160

Project Name: HVRA **Lab Number:** L1934860
Project Number: 18.8090 **Report Date:** 08/21/19

Case Narrative (continued)

Report Submission

August 21, 2019: This final report includes the results of all requested analyses.

August 14, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L1934860-05: The sample identified as "HVRA-MW101-8.5" on the chain of custody was identified as "HVRA-MW101-8.0" on the container label. At the client's request, the sample is reported as "HVRA-MW101-8.0".

Perfluorinated Alkyl Acids by Isotope Dilution

L1934860-01 and -05: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

WG1271296-1: The continuing calibration standard had the response for 8:2FTS and PFDoS outside the acceptance criteria for the method. These values represent less than 10% of all compounds; therefore, the calibration was accepted.

WG1271296-3: The continuing calibration standard had the response for NEtFOSAA outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1273283-1: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

WG1273283-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

Project Name: HVRA **Lab Number:** L1934860

Project Number: 18.8090 **Report Date:** 08/21/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,05 Batch: WG1270290-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Arsenic, Total	0.148	J	mg/kg	0.400	0.083	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Iron, Total	ND		mg/kg	2.00	0.361	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Sodium, Total	1.42	J	mg/kg	80.0	1.26	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	08/08/19 20:25	08/09/19 14:38	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,05 Batch: WG1270413-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/09/19 05:00	08/12/19 12:49	1,7471B	GD

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270290-3 WG1270290-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Aluminum, Total	9240	168	9310	**42**	Q	11100	**1110**	Q	75-125	18		20
Antimony, Total	1.18J	41.9	39.2	93		38.2	91		75-125	3		20
Arsenic, Total	3.38	10.1	12.7	92		12.3	89		75-125	3		20
Barium, Total	39.3	168	195	93		213	104		75-125	9		20
Beryllium, Total	0.346J	4.19	4.15	99		4.14	99		75-125	0		20
Cadmium, Total	1.73	4.28	4.85	**73**	Q	5.24	82		75-125	8		20
Calcium, Total	3720	839	12400	**1030**	Q	6660	**351**	Q	75-125	**60**	Q	20
Chromium, Total	17.8	16.8	27.0	**55**	Q	28.7	**65**	Q	75-125	6		20
Cobalt, Total	8.24	41.9	42.9	83		44.7	87		75-125	4		20
Copper, Total	66.8	21	42.1	**0**	Q	49.5	**0**	Q	75-125	16		20
Iron, Total	51300	83.9	24300	**0**	Q	36500	**0**	Q	75-125	**40**	Q	20
Lead, Total	70.0	42.8	97.2	**64**	Q	151	**190**	Q	75-125	**43**	Q	20
Magnesium, Total	5480	839	10700	**622**	Q	7850	**283**	Q	75-125	**31**	Q	20
Manganese, Total	721	41.9	607	**0**	Q	1360	**1520**	Q	75-125	**77**	Q	20
Nickel, Total	19.2	41.9	53.0	80		57.3	91		75-125	8		20
Potassium, Total	225	839	1010	94		1010	94		75-125	0		20
Selenium, Total	0.806J	10.1	10.0	99		10.1	100		75-125	1		20
Silver, Total	ND	25.2	24.7	98		24.2	96		75-125	2		20
Sodium, Total	76.7J	839	871	104		848	101		75-125	3		20
Thallium, Total	0.572J	10.1	8.30	82		8.55	85		75-125	3		20
Vanadium, Total	12.8	41.9	52.4	94		54.4	99		75-125	4		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1934860

Report Date: 08/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270290-3 WG1270290-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Zinc, Total	138	41.9	156	**43**	Q	202	**153**	Q	75-125	**26**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,05 QC Batch ID: WG1270413-3 WG1270413-4 QC Sample: L1934860-01 Client ID: HVRA-MW100-6.0												
Mercury, Total	0.178	0.134	0.277	**74**	Q	0.337	119		80-120	20		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1934860
Report Date: 08/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,05 Batch: WG1269984-2 WG1269984-3								
Cyanide, Total	58	Q	62	Q	80-120	15		35

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1935085

Alpha Analytical

Report Date: November 6, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1935085
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of volatile, organic compounds (VOCs), semi-volatile organic compounds (SVOCs), SVOC selective ion monitoring (SIM), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals (TAL 23), cyanide, and total solids/moisture data contained within Alpha Analytical report #L1935085 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Field duplicate
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Laboratory duplicate
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on August 6, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Rinse Blank / Trip Blank / Field Blank / Equipment Blank

Four rinse blank samples, one trip blank sample, one field blank sample, and one equipment blank were collected. The rinse blanks were used to check that equipment being used would not introduce PFAS to the samples being collected. The trip blank was analyzed to determine the extent of potential VOC and PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. The equipment blank was collected from a Ziploc® bag to measure the potential sample contamination. No target compounds were detected above the MDL in the rinse, trip, field, and equipment blank samples with the following exceptions. Perfluorohexanoic acid (PFHxA) was detected in the four rinse blanks, trip blank, field blank, and equipment blank. Perfluorooctanesulfonic acid (PFOS) was detected in all four rinse blanks. Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_1 (RB01), ATTACHMENT_PFAS_2 (RB02), ATTACHMENT_PFAS_3 (RB03), ATTACHMENT_PFAS_4 (RB04), ATTACHMENT_PFAS_5 (LTB), ATTACHMENT_PFAS_6 (FTB), and ATTACHMENT_PFAS_7 (EB). Since rinse blank samples are intended to verify equipment is PFAS free prior to sampling in the field, they were not used in data evaluation. Naphthalene, phenanthrene and 2-methylnaphthalene were detected in the SVOC SIM analysis; however, no data were qualified since the project soil samples were not analyzed by SVOC SIM. Acetone was detected in the VOC trip blank and equipment blank. Excerpts from the laboratory report are provided in ATTACHMENT_VOC_1 (LTB) and ATTACHMENT_VOC_2 (EB). Manganese was detected in the equipment blank. Excerpt from the laboratory report is provided in ATTACHMENT_METALS_1. Sample concentrations less than or equal to five times the highest blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified.

Field Duplicate

A field duplicate is a second sample generated in the field that is used to demonstrate acceptable precision and reproducibility of the field and laboratory procedures. The sample identification is typically kept blind from the laboratory. Field duplicate sample results measure the reproducibility of measurements under a given set of conditions and were evaluated by calculating the Relative Percent

Difference (RPD) values for compounds where both the native and field duplicate sample concentrations were greater than five times the reporting limit. The RPD formula is as follows:

$$RPD = \frac{|S - D|}{(S + D)/2} \; x \; 100$$

Where: RPD = relative percent difference
S = native sample result
D = duplicate sample result

Sample HVRA-MW102-4.5 served as the field duplicate sample. The field duplicate data met the RPD criteria (30%) for precision with the exception of calcium which was qualified "J" in the Table 1 - Qualifier Summary attached.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blanks with the exceptions of PFHxA and perfluorooctanoic acid (PFOA) in the PFAS water analysis, perfluorobutanoic acid (PFBA) in the PFAS soil analysis, fluorene, phenanthrene, and 2-methylnaphthalene in the SVOC SIM analysis, and chromium, iron, and sodium in the soil metals analysis. No data were qualified for the PFAS water analysis or the SVOC SIM analysis since the project soil samples were not analyzed by these analyses. Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_8 and ATTACHMENT_SVOC_SIM_2. The PFAS and metals soil blank concentrations were compared against the project sample analyte concentrations. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection or results less than the MDL were not qualified. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_9.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogate standards, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the RPD of the LCS/LCSD and MS/MSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the following exceptions. The LCS/LCSD RPDs for 1,4-dioxane in the water VOC analysis, perfluorooctanesulfonamide (FOSA) in the soil PFAS analysis, 4-chloroaniline in the SVOC water analysis, pentachlorophenol in the SVOC SIM water analysis, and 11 of 20 parameters in the water pesticides analysis exceeded laboratory acceptance criteria; however, no data were qualified because the LCS and LCSD percent recoveries were acceptable. Excerpts from the laboratory report are provided in ATTACHMENT_VOC_3, ATTACHMENT_PFAS_10, ATTACHMENT_SVOC_1, ATTACHMENT_SVOC_SIM_3, and ATTACHMENT_PESTICIDES_1. The soil acetone LCSD recovery, the soil cyanide LCS and LCSD recoveries, and the 1,4-dioxane LCS and LCSD percent recoveries in the soil SVOC analysis were below laboratory acceptance criteria indicating a potential low bias. The results were qualified as noted in the Table 1 - Qualifier Summary attached. Excerpts from the laboratory report are provided in ATTACHMENT_VOC_4, ATTACHMENT_CYANIDE_1, and ATTACHMENT_SVOC_2.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. MS/MSD source samples were not specific to this report; therefore, the MS/MSD data were not used in data evaluation.

Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample that is carried through the same sample preparation and analytical procedures as the native sample in order to determine the precision of the method. Laboratory duplicate sample results were evaluated for compounds where both the native and duplicate sample concentrations were greater than five times the reporting limit. Sample HVRA-MW102-

4.5 served as the total solids/moisture laboratory duplicate source sample and the RPDs were within the laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria with the exception of the extracted standards associated with PFHxA, perfluoroheptanoic acid (PFHpA), perfluorodecanoic acid (PFDA), N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA), perfluoroundecanoic acid (PFUnA), N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA), and perfluorododecanoic acid (PFDoA) for some samples that were below the laboratory acceptance criteria indicating a potential low bias. The results were qualified in the Table 1 - Qualifier Summary attached. Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_11, ATTACHMENT_PFAS_12 ATTACHMENT_PFAS_13 ATTACHMENT_PFAS_14.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2′-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory that a 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2FTS) continuing calibration verification standard was outside laboratory acceptance criteria; however, no data were

qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_15.

Table 1 - Qualifier Summary

Alpha Report #: L1935085

QC Item	Sample ID	Compound	Qualification	Comment
Trip Blank	HVRA-MW102-4.5	Acetone	UB	Change to non-detect
Method Blank	HVRA-MW105-4.0	PFBA	UB	Remove 'J' qualifier and change to non-detect
LCS/LCSD	HVRA-MW102-4.5	Acetone, cyanide	J	Add 'J' to detect and non-detect results
	HVRA-FD01-190806			
	HVRA-MW103-10.0			
	HVRA-MW103-10.0	1,4-Dioxane		
Extracted Internal Standard	HVRA-MW102-4.5	NMeFOSAA	J	Add 'J' to non-detect result
		PFUnA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
		PFDoA		Add 'J' to non-detect result
	HVRA-FD01-190806	NMeFOSAA		Add 'J' to non-detect result
	HVRA-MW104-9.5	PFHxA		Result already 'J' qualified
		PFDA		Add 'J' to non-detect result
		NMeFOSAA		Add 'J' to non-detect result
		PFUnA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
		PFDoA		Add 'J' to non-detect result

Table 1 - Qualifier Summary

Alpha Report #: L1935085

QC Item	Sample ID	Compound	Qualification	Comment
Extracted Internal Standard (cont.)	HVRA-MW105-4.0	PFHxA	J	Result already 'J' qualified
		PFHpA		Add 'J' to non-detect result
		PFDA		Add 'J' to non-detect result
		NMeFOSAA		Add 'J' to non-detect result
		PFUnA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
		PFDoA		Add 'J' to non-detect result
Field Duplicate	HVRA-MW102-4.5	Calcium	J	RPD > 30%

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-02
Client ID: HVRA-LTB01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.0		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	111		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.6	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,10 Batch: WG1272181-3 WG1272181-4								
1,2,4-Trichlorobenzene	83		82		70-130	1		20
Methyl Acetate	120		110		70-130	9		20
Cyclohexane	100		120		70-130	18		20
1,4-Dioxane	100		80		56-162	**22**	Q	20
Freon-113	100		120		70-130	18		20
Methyl cyclohexane	92		100		70-130	8		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		90		70-130
Toluene-d8	107		106		70-130
4-Bromofluorobenzene	88		91		70-130
Dibromofluoromethane	106		108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06 Batch: WG1273158-3 WG1273158-4								
Chloroethane	92		93		50-151	1		30
1,1-Dichloroethene	88		91		65-135	3		30
trans-1,2-Dichloroethene	91		93		70-130	2		30
Trichloroethene	90		92		70-130	2		30
1,2-Dichlorobenzene	88		89		70-130	1		30
1,3-Dichlorobenzene	89		91		70-130	2		30
1,4-Dichlorobenzene	89		90		70-130	1		30
Methyl tert butyl ether	87		88		66-130	1		30
p/m-Xylene	92		94		70-130	2		30
o-Xylene	92		95		70-130	3		30
cis-1,2-Dichloroethene	90		92		70-130	2		30
Styrene	93		95		70-130	2		30
Dichlorodifluoromethane	60		61		30-146	2		30
Acetone	66		**51**	Q	54-140	26		30
Carbon disulfide	77		80		59-130	4		30
2-Butanone	86		80		70-130	7		30
4-Methyl-2-pentanone	89		83		70-130	7		30
2-Hexanone	89		83		70-130	7		30
Bromochloromethane	86		86		70-130	0		30
1,2-Dibromoethane	84		85		70-130	1		30
1,2-Dibromo-3-chloropropane	73		72		68-130	1		30
Isopropylbenzene	96		97		70-130	1		30
1,2,3-Trichlorobenzene	83		85		70-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 10 Batch: WG1271094-2 WG1271094-3								
Bis(2-chloroethyl)ether	70		74		40-140	6		30
3,3'-Dichlorobenzidine	54		51		40-140	6		30
2,4-Dinitrotoluene	63		70		48-143	11		30
2,6-Dinitrotoluene	72		82		40-140	13		30
4-Chlorophenyl phenyl ether	63		70		40-140	11		30
4-Bromophenyl phenyl ether	67		71		40-140	6		30
Bis(2-chloroisopropyl)ether	82		92		40-140	11		30
Bis(2-chloroethoxy)methane	74		81		40-140	9		30
Hexachlorocyclopentadiene	64		72		40-140	12		30
Isophorone	79		87		40-140	10		30
Nitrobenzene	69		77		40-140	11		30
NDPA/DPA	66		67		40-140	2		30
n-Nitrosodi-n-propylamine	81		90		29-132	11		30
Bis(2-ethylhexyl)phthalate	84		99		40-140	16		30
Butyl benzyl phthalate	91		99		40-140	8		30
Di-n-butylphthalate	80		93		40-140	15		30
Di-n-octylphthalate	96		110		40-140	14		30
Diethyl phthalate	72		78		40-140	8		30
Dimethyl phthalate	77		88		40-140	13		30
Biphenyl	65		72		40-140	10		30
4-Chloroaniline	56		80		40-140	**35**	Q	30
2-Nitroaniline	74		86		52-143	15		30
3-Nitroaniline	52		58		25-145	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1273919-2 WG1273919-3								
1,2,4,5-Tetrachlorobenzene	69		62		40-117	11		50
Acetophenone	82		76		14-144	8		50
2,4,6-Trichlorophenol	84		71		30-130	17		50
p-Chloro-m-cresol	93		76		26-103	20		50
2-Chlorophenol	74		68		25-102	8		50
2,4-Dichlorophenol	88		79		30-130	11		50
2,4-Dimethylphenol	91		82		30-130	10		50
2-Nitrophenol	83		75		30-130	10		50
4-Nitrophenol	81		59		11-114	31		50
2,4-Dinitrophenol	74		58		4-130	24		50
4,6-Dinitro-o-cresol	86		67		10-130	25		50
Pentachlorophenol	83		65		17-109	24		50
Phenol	78		70		26-90	11		50
2-Methylphenol	80		71		30-130.	12		50
3-Methylphenol/4-Methylphenol	91		82		30-130	10		50
2,4,5-Trichlorophenol	87		68		30-130	25		50
Carbazole	78		62		54-128	23		50
Atrazine	90		70		40-140	25		50
Benzaldehyde	70		62		40-140	12		50
Caprolactam	92		70		15-130	27		50
2,3,4,6-Tetrachlorophenol	80		63		40-140	24		50
1,4-Dioxane	**29**	Q	**34**	Q	40-140	16		50

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/12/19 13:29
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.06	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/12/19 12:07
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/11/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1271095-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.02	J	ug/l	0.10	0.01
Phenanthrene	0.05	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1271095-2 WG1271095-3								
Acenaphthene	90		66		40-140	31		40
2-Chloronaphthalene	92		70		40-140	27		40
Fluoranthene	90		65		40-140	32		40
Hexachlorobutadiene	82		63		40-140	26		40
Naphthalene	85		65		40-140	27		40
Benzo(a)anthracene	94		69		40-140	31		40
Benzo(a)pyrene	98		72		40-140	31		40
Benzo(b)fluoranthene	93		69		40-140	30		40
Benzo(k)fluoranthene	97		72		40-140	30		40
Chrysene	88		65		40-140	30		40
Acenaphthylene	97		72		40-140	30		40
Anthracene	95		70		40-140	30		40
Benzo(ghi)perylene	85		62		40-140	31		40
Fluorene	92		67		40-140	31		40
Phenanthrene	90		66		40-140	31		40
Dibenzo(a,h)anthracene	96		69		40-140	33		40
Indeno(1,2,3-cd)pyrene	93		67		40-140	33		40
Pyrene	89		65		40-140	31		40
2-Methylnaphthalene	94		71		40-140	28		40
Pentachlorophenol	69		41		40-140	**51**	Q	40
Hexachlorobenzene	97		73		40-140	28		40
Hexachloroethane	74		56		40-140	28		40

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-03
Client ID: HVRA-RB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 08:35
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:25
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	0.234	1
Perfluorohexanoic Acid (PFHxA)	0.583	J	ng/l	1.97	0.323	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	0.370	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	0.232	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.97	0.677	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	0.307	1
Perfluorooctanesulfonic Acid (PFOS)	0.524	J	ng/l	1.97	0.496	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.299	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.638	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.964	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.571	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.791	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.366	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.322	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1
PFOA/PFOS, Total	0.524	J	ng/l	1.97	0.232	1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-07
Client ID: HVRA-RB02-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 11:30
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:42
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	0.404	J	ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	0.960	J	ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.884	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	0.960	J	ng/l	1.80	0.213	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-08
Client ID: HVRA-RB03-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 12:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:59
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.379	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.368	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.221	1
Perfluorohexanoic Acid (PFHxA)	0.416	J	ng/l	1.86	0.305	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.209	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.349	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.219	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.639	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.290	1
Perfluorooctanesulfonic Acid (PFOS)	2.23		ng/l	1.86	0.468	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.602	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.242	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.911	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.539	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.747	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.346	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230	1
PFOA/PFOS, Total	2.23		ng/l	1.86	0.219	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-11
Client ID: HVRA-RB04-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 14:45
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 14:16
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.93	0.394	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.93	0.382	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.93	0.230	1
Perfluorohexanoic Acid (PFHxA)	0.448	J	ng/l	1.93	0.317	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.93	0.217	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.93	0.363	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.93	0.228	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.93	1.28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.93	0.664	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.93	0.301	1
Perfluorooctanesulfonic Acid (PFOS)	3.22		ng/l	1.93	0.486	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.93	0.293	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.93	1.17	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.93	0.625	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.93	0.251	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.93	0.946	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.93	0.560	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.93	0.776	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.93	0.359	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.93	0.316	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.93	0.239	1
PFOA/PFOS, Total	3.22		ng/l	1.93	0.228	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-02
Client ID: HVRA-LTB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 12:51
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.96	0.400	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.96	0.388	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.96	0.233	1
Perfluorohexanoic Acid (PFHxA)	0.396	J	ng/l	1.96	0.322	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.96	0.221	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.96	0.369	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.96	0.231	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.96	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.96	0.674	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.96	0.306	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.96	0.494	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.96	0.298	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.96	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.96	0.635	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.96	0.255	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.96	0.961	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.96	0.569	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.96	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.96	0.365	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.96	0.321	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.96	0.243	1
PFOA/PFOS, Total	ND		ng/l	1.96	0.231	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-01
Client ID: HVRA-FTB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 10:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 12:34
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.02	0.413	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.02	0.401	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.02	0.241	1
Perfluorohexanoic Acid (PFHxA)	0.364	J	ng/l	2.02	0.332	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.02	0.228	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.02	0.380	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.02	0.239	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.02	1.35	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.02	0.696	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.02	0.316	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.02	0.510	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.02	0.308	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.02	1.23	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.02	0.656	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.02	0.263	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.02	0.992	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.02	0.587	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.02	0.814	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.02	0.376	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.02	0.331	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.02	0.251	1
PFOA/PFOS, Total	ND		ng/l	2.02	0.239	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-10
Client ID: HVRA-EB01-190806
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/06/19 13:20
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/19/19 13:08
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.375	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	0.409	J	ng/l	1.89	0.311	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.652	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.477	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.928	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.549	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.761	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.235	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 11:09
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 08/15/19 11:17

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03,07-08,10-11 Batch: WG1272715-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.380	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	0.276	J	ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	0.276	J	ng/l	2.00	0.236

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/11/19 15:02
Analyst: PB

Extraction Method: EPA 537(M)
Extraction Date: 08/08/19 13:52

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04-06,09,12 Batch: WG1270181-1					
Perfluorobutanoic Acid (PFBA)	0.077	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04-06,09,12 Batch: WG1270181-2 WG1270181-3								
Perfluorobutanoic Acid (PFBA)	91		88		71-135	3		30
Perfluoropentanoic Acid (PFPeA)	90		88		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	82		83		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	89		88		70-132	1		30
Perfluoroheptanoic Acid (PFHpA)	94		89		71-131	5		30
Perfluorohexanesulfonic Acid (PFHxS)	81		77		67-130	5		30
Perfluorooctanoic Acid (PFOA)	91		89		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	102		92		64-140	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	86		87		70-132	1		30
Perfluorononanoic Acid (PFNA)	87		91		72-129	4		30
Perfluorooctanesulfonic Acid (PFOS)	84		83		68-136	1		30
Perfluorodecanoic Acid (PFDA)	91		90		69-133	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	85		84		65-137	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	98		89		63-144	10		30
Perfluoroundecanoic Acid (PFUnA)	91		85		64-136	7		30
Perfluorodecanesulfonic Acid (PFDS)	86		91		59-134	6		30
Perfluorooctanesulfonamide (FOSA)	88		124		67-137	**34**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	88		81		61-139	8		30
Perfluorododecanoic Acid (PFDoA)	94		91		69-135	3		30
Perfluorotridecanoic Acid (PFTrDA)	94		92		66-139	2		30
Perfluorotetradecanoic Acid (PFTA)	96		94		69-133	2		30

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-04 Date Collected: 08/06/19 09:45

Client ID: HVRA-MW102-4.5 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	64		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	69		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	69		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	65		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	57		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**36**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	61		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**33**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**54**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	34		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-05
Client ID: HVRA-FD01-190806
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 00:00
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	61		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**42**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-09
Client ID: HVRA-MW104-9.5
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 13:25
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	64		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	73		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	73		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**60**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	62		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	74		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	64		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	54		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	65		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	65		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**63**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	61		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**27**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	41		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**29**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**52**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	32		26-160

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935085
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-12
Client ID: HVRA-MW105-4.0
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/06/19 15:50
Date Received: 08/06/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	63		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**60**	Q	61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**59**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	80		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	63		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	63		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	66		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**62**	Q	65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**61**	Q	64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**26**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**51**	Q	56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	28		26-160

Project Name: HVRA **Lab Number:** L1935085
Project Number: 18.8090 **Report Date:** 11/06/19

Case Narrative (continued)

Report Revision

November 06, 2019: The Semivolatile Organics compound list has been amended to include 2-Methylphenol on L1935085-10.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1935085-13: A sample identified as "TRIP BLANK" was received, but not listed on the Chain of Custody and was not analyzed.

Volatile Organics

L1935085-02: The Trip Blank has a result for acetone present above the reporting limit. The sample was verified as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

Perfluorinated Alkyl Acids by Isotope Dilution

L1935085-04, -05, -09, and -12: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1270181-2/-3 LCS/LCSD RPD, associated with L1935085-04, -05, -06, -09, and -12, is above the acceptance criteria for perfluorooctanesulfonamide (fosa) (34%).

WG1271296-1: The continuing calibration standard had the response for 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 10 Batch: WG1271187-2 WG1271187-3									
Delta-BHC	75		94		30-150	**23**	Q	20	A
Lindane	83		95		30-150	14		20	A
Alpha-BHC	85		96		30-150	12		20	A
Beta-BHC	79		93		30-150	16		20	A
Heptachlor	80		95		30-150	18		20	A
Aldrin	76		89		30-150	15		20	A
Heptachlor epoxide	88		106		30-150	19		20	A
Endrin	87		108		30-150	**22**	Q	20	A
Endrin aldehyde	69		89		30-150	**25**	Q	20	A
Endrin ketone	87		111		30-150	**25**	Q	20	A
Dieldrin	88		108		30-150	20		20	A
4,4'-DDE	83		103		30-150	**22**	Q	20	A
4,4'-DDD	84		110		30-150	**27**	Q	20	A
4,4'-DDT	86		113		30-150	**27**	Q	20	A
Endosulfan I	78		92		30-150	17		20	A
Endosulfan II	78		102		30-150	**26**	Q	20	A
Endosulfan sulfate	87		116		30-150	**28**	Q	20	A
Methoxychlor	80		106		30-150	**28**	Q	20	A
cis-Chlordane	74		84		30-150	13		20	A
trans-Chlordane	79		97		30-150	**21**	Q	20	A

ATTACHMENT_METALS_1

Project Name: HVRA **Lab Number:** L1935085

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935085-10 Date Collected: 08/06/19 13:20

Client ID: HVRA-EB01-190806 Date Received: 08/06/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Iron, Total	ND		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Manganese, Total	0.00113		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/14/19 12:05	08/14/19 16:32	EPA 7470A	1,7470A	GD
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:43	EPA 3005A	1,6020B	AM

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935085

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1269546-2 WG1269546-3								
Cyanide, Total	**73**	Q	**72**	Q	80-120	0		35
General Chemistry - Westborough Lab Associated sample(s): 10 Batch: WG1269575-2 WG1269575-3								
Cyanide, Total	93		96		85-115	3		20

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1935927

Alpha Analytical

Report Date: November 6, 2019

Prepared by

Barr Engineering Co.

November 11, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical # L1935927
Date: November 11, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals (TAL 23), and cyanide data contained within Alpha Analytical report # L1935927 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Field duplicate
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Laboratory duplicate
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on August 7-9, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip and equipment blank samples and field duplicate samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank / Equipment Blank

Two trip blank samples and one equipment blank sample was collected. One trip blank (LTB) was analyzed to determine the extent of potential VOC and PFAS contamination introduced during sample transport and handling and another tested for PFAS only (FTB). The equipment blank (EB01) was collected from the peristaltic pump to measure the potential for sample contamination and was tested for all target compounds. No target compounds were detected above the MDL in the trip and equipment blank samples with the following exceptions. Acetone and chloromethane was detected in the VOC trip blank and equipment blank. Excerpts from the laboratory report are provided in ATTACHMENT_VOC_1 (LTB) and ATTACHMENT_VOC_2 (EB). SVOC bis(2-ethylhexyl)phthalate and SVOC SIM naphthalene and 2-methylnaphthalene were detected in the equipment blank. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC_1 and ATTACHMENT_SVOC SIM_1 respectively. Metals calcium and iron were also detected in the equipment blank. Excerpt from the laboratory report is provided in ATTACHMENT_METALS_1. Sample concentrations less than or equal to five times the highest blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached.

Field Duplicate

A field duplicate is a second sample generated in the field that is used to demonstrate acceptable precision and reproducibility of the field and laboratory procedures. The sample identification is typically kept blind from the laboratory. Field duplicate sample results measure the reproducibility of measurements under a given set of conditions and were evaluated by calculating the Relative Percent Difference (RPD) values for compounds where both the native and field duplicate sample concentrations were greater than five times the reporting limit. The RPD formula is as follows:

$$RPD = \frac{|S - D|}{(S + D)/2} \; x \; 100$$

Where: RPD = relative percent difference
S = native sample result
D = duplicate sample result

Samples HVRA-MAINTBLDG-190807 (HVRA-FD01-190807), HVRA-MW100-190808 (HVRA-FD01-190808), and HVRA-OF1-190808 (HVRA-FD02-190808) served as the field duplicate samples. The field duplicate data met the RPD criteria (30%) for precision with the exception of HVRA-OF1-190808 (HVRA-FD02-190808 tested for total calcium, total copper, and total manganese. The native and field duplicate sample results were qualified "J" in the Table 1 - Qualifier Summary attached.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses with the following exceptions. The results from sample HVRA-MW100-190808 for 8:2FTS and HVRA-MW104-190809 for PFHxS and PFOS are reported as a reanalysis outside of hold as the initial run was outside of the calibration range; the sample results were qualified "J" in the Table 1 - Qualifier Summary attached. The sample was re-extracted on dilution outside the recommended holding time and the result within the calibration curve is reported for this compound. Excerpt is included in ATTACHMENT_PFAS_1 and ATTACHMENT_PFAS_2. Also, the laboratory report narrative states that for sample L1935927-10/ HVRA-NW102-190809, the PCBs extraction holding time was exceeded. However, the report noted it was extracted in eight days and the method does not set a requirement for extraction. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of VOC bromomethane, perfluorobutanoic acid (PFBA), and arsenic in soil and SVOC bis(2-ethylhexyl)phthalate, perfluorohexanoic acid (PFHxA), Aroclor 1260, and multiple SVOC SIM compounds tested in water.

Excerpt from the laboratory report are provided in ATTACHMENT_VOC_3, ATTACHMENT_PFAS_3, ATTACHMENT_METAL_2, ATTACHMENT_SVOC_2, ATTACHMENT_PFAS_4, ATTACHMENT_PCB_1, and ATTACHMENT_SVOC SIM_2 respectively. The blank concentrations for these analytes were compared against the project sample analyte concentration as discussed above. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations greater than five times the blank detection were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogates, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the RPD of the LCS/LCSD, MS/MSD, and laboratory duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the following exceptions. The soil SVOC LCS had multiple compounds that exceeded the acceptance criteria, as shown as excerpt ATTACHMENT_SVOC_3, however all samples were non-detect for those compounds and therefore unaffected by the potential high bias. The soil PFAS had 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2FTS) and FOSA that had an RPD that exceed acceptance criteria, however 6:2FTS had acceptable percent recoveries in the LCS and LCSD and therefore was accepted. The soil FOSA and total cyanide LCS and LCSD had percent recoveries outside of laboratory acceptance criteria and the results for samples HVRA-OF1-190808 and its field duplicate HVRA-FD02-190808 were qualified as noted in the Table 1 - Qualifier Summary attached. The excerpt from the laboratory report is provided in ATTACHMENT_PFAS_5 and ATTACHMENT_CYANIDE_1 respectively. In addition, the water pesticide LCS/LCSD analysis had multiple compounds with RPDs that exceeded acceptance criteria, as shown in the laboratory report excerpt ATTACHMENT_PESTICIDE_1, however since all of the percent recoveries were acceptable, the data is accepted without qualification.

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. Samples HVRA-MW100-190808 and HVRA-MAINTBLDG-190807 served as the MS samples for the water analysis and sample HVRA-OF1-190808 served as the soil MS. There were multiple tested compounds that had percent recoveries that were outside the laboratory limits indicating a potential bias. However, the sample results were not evaluated if the sample detection was greater than four times the spike concentration. A low percent recovery may indicate a potential low bias while a high percent recovery may indicate a potential high bias. For a low percent recovery, positive results are considered estimated and qualified "J" while non-detects are estimated and qualified "UJ". For a high percent recovery, positive results are considered estimated and qualified "J" and non-detects are not qualified. Also, data was not qualified if only the RPD was outside of laboratory acceptance but both MS and MSD

percent recoveries were acceptable. The sample data that is qualified is noted in the Table 1 – Qualifier Summary attached. The associated laboratory report excerpts are provided as ATTACHMENT_VOC_4, ATTACHMENT_VOC_5, ATTACHMENT_SVOC_4, ATTACHMENT_SVOC_5, ATTACHMENT_SVOC_6, ATTACHMENT_PFAS_6 ATTACHMENT_PFAS_7, ATTACHMENT_PFAS_8, ATTACHMENT_PESTICIDE_2, ATTACHMENT_METALS_3, ATTACHMENT_METALS_4, and ATTACHMENT_METALS_5.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria with one exception. There was one surrogate above acceptance criteria for the SVOC SIM analysis from sample HVRA-MAINTBLDG-190807, however no data was qualified as all SVOC SIM results are non-detect. Excerpt from the laboratory report is provided in ATTACHMENT_SVOC SIM_3.

Laboratory Duplicate

A laboratory duplicate is an additional sample typically taken from an existing sample bottle that is carried through the same sample preparation and analytical procedures as the project sample. The results from the duplicate analyses are used to evaluate analytical precision by the calculation of the RPD. The RPDs were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. Some of the extracted internal standard recoveries were outside of laboratory acceptance criteria for the field samples. Where the extracted internal standard exceeded the laboratory acceptance criteria indicating a potential high bias, and the target result was not detected, no qualification was applied. If the target result was detected or when the extracted internal standard was below the laboratory acceptance criteria, the results were qualified in the Table 1 - Qualifier Summary attached. In addition, there was an extraction labeled standard above laboratory acceptance criteria for an LCS/LCSD for the extraction labeled standards for NEtFOSAA analysis; however, no data were qualified based on the high recoveries in the LCS/LCSD as the percent recoveries were acceptable. The extracted internal standard recoveries that were outside of laboratory acceptance criteria are provided in ATTACHMENT_PFAS_9, ATTACHMENT_PFAS_10, and ATTACHMENT_PFAS_11.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. Samples HVRA-MAINTBLDG-190807 and HVRA-FD01-190807 were labeled on the COC as Drinking Water samples. The samples were tested the same as all other samples and did not following Drinking Water methods, specifically for PFAS. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2'-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Diluted Sample

Endrin aldehyde for sample HVRA-OF1-190808 was analyzed at a 2x dilution. The laboratory also reported the 1x dilution PFOS result for this sample with an 'E' qualifier indicating that the concentration exceeded the laboratory's calibration range. The 2x dilution result should be used and the 'E' qualified, 1x dilution result should be considered unusable. The endrin aldehyde 1x dilution result was qualified 'R' in the Table 1 – Qualifier Summary attached. Excerpt from the laboratory report is provided in ATTACHMENT_PESTICIDE_3.

Continuing Calibration Verification

It was noted by the laboratory multiple instances where the continuing calibration verification (CCV) standard was outside of acceptance criteria. The 8:2FTS CCV standard was outside laboratory acceptance criteria; however, no data were qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Excerpt from the laboratory report discussing this is provided in ATTACHMENT_PFAS_12.

Table 1 - Qualifier Summary

Alpha Report #: L1935927

QC Item	Sample ID	Compound	Qualification	Comment
Trip Blank	HVRA-MW100-190808	Chloromethane	UB	Remove 'J' qualifier and change to non-detect
	HVRA-FD01-190808	Chloromethane		Remove 'J' qualifier and change to non-detect
	HVRA-MW100-190808	Acetone		Change to non-detect
	HVRA-FD01-190808	Acetone		Change to non-detect
	HVRA-OF1-190808	Acetone		Change to non-detect
	HVRA-NW102-190809	Acetone		Change to non-detect
	HVRA-MW103-190809	Acetone		Change to non-detect
Equipment Blank/Method Blank	HVRA-MAINTBLDG-190807	Bis(2-ethylhexyl)phthalate	UB	Remove 'J' qualifier and change to non-detect
Equipment Blank	HVRA-MAINTBLDG-190807	Naphthalene (SIM)	UB	Remove 'J' qualifier and change to non-detect
	HVRA-MW100-190808	Total Iron		
	HVRA-FD01-190808	Total Iron		
Field Duplicate	HVRA-OF1-190808	Total Calcium	J	RPD > 30%
	HVRA-FD02-190808	Total Calcium		
	HVRA-OF1-190808	Total Copper		
	HVRA-FD02-190808	Total Copper		
	HVRA-OF1-190808	Total Manganese		
	HVRA-FD02-190808	Total Manganese		
Holding Time	HVRA-MW100-190808	8:2FTS	J	Add 'J' qualifier
	HVRA-MW104-190809	PFHxS		
	HVRA-MW104-190809	PFOS		

Table 1 - Qualifier Summary

Alpha Report #: L1935927

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-MW100-190808	Phenanthrene	UB	Remove 'J' qualifier and change to non-detect
	HVRA-MAINTBLDG-190807	Perfluorohexanoic Acid (PFHxA)		
	HVRA-FD01-190807	Perfluorohexanoic Acid (PFHxA)		
	HVRA-NW102-190809	Perfluorohexanoic Acid (PFHxA)		
	HVRA-MW103-190809	Perfluorohexanoic Acid (PFHxA)		
LCS/LCSD	HVRA-OF1-190808	Perfluorooctanesulfonamide (FOSA)	J	Add 'J' to non-detect results
	HVRA-FD02-190808	Perfluorooctanesulfonamide (FOSA)	J	
	HVRA-OF1-190808	Total Cyanide	J	
	HVRA-FD02-190808	Total Cyanide	J	
MS/MSD	HVRA-MW100-190808	Chloromethane	J	Result already 'J' qualified
		3,3'-Dichlorobenzidine		Add 'J' to non-detect results
		4-Chloroaniline		Add 'J' to non-detect results
		2,4-Dimethylphenol		Add 'J' to non-detect results
		8:2FTS		Add 'J'
		Total Calcium		Add 'J'

Table 1 - Qualifier Summary

Alpha Report #: L1935927

QC Item	Sample ID	Compound	Qualification	Comment
MS/MSD (cont.)	HVRA-OF1-190808	1,1,2,2-Tetrachloroethane	J	Add 'J' to non-detect results
		1,2-Dichlorobenzene		Add 'J' to non-detect results
		1,3-Dichlorobenzene		Add 'J' to non-detect results
		1,4-Dichlorobenzene		Add 'J' to non-detect results
		1,2-Dibromo-3-chloropropane		Add 'J' to non-detect results
		1,2,3-Trichlorobenzene		Add 'J' to non-detect results
		1,2,4-Trichlorobenzene		Add 'J' to non-detect results
		Hexachlorocyclopentadiene		Add 'J' to non-detect results
		Total Lead		Add 'J' qualifier
Sample Dilution	HVRA-OF1-190808	Endrin aldehyde - 1x dilution	R	Remove 'E' qualifier, use 2x dilution result
Extracted Internal Standard	HVRA-MW104-190809	PFBS	J	Add 'J' qualifier
		PFTrDA		Add 'J' to non-detect results
		PFTA		Add 'J' to non-detect results

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-01 Date Collected: 08/07/19 00:00
Client ID: HVRA-LTB01-190807 Date Received: 08/09/19
Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 15:13
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	1.1	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-01
Client ID: HVRA-LTB01-190807
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/07/19 00:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.2		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/14/19 16:39
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.96	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	9.1		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/19 19:24
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1273127-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	2.0		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 QC Batch ID: WG1272314-6 WG1272314-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Methylene chloride	ND	10	12	120		12	120		70-130	0		20
1,1-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
Chloroform	ND	10	12	120		12	120		70-130	0		20
Carbon tetrachloride	ND	10	11	110		12	120		63-132	9		20
1,2-Dichloropropane	ND	10	12	120		12	120		70-130	0		20
Dibromochloromethane	ND	10	11	110		12	120		63-130	9		20
1,1,2-Trichloroethane	ND	10	12	120		12	120		70-130	0		20
Tetrachloroethene	ND	10	10	100		10	100		70-130	0		20
Chlorobenzene	ND	10	11	110		11	110		75-130	0		20
Trichlorofluoromethane	ND	10	11	110		12	120		62-150	9		20
1,2-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
1,1,1-Trichloroethane	ND	10	11	110		12	120		67-130	9		20
Bromodichloromethane	ND	10	12	120		12	120		67-130	0		20
trans-1,3-Dichloropropene	ND	10	11	110		11	110		70-130	0		20
cis-1,3-Dichloropropene	ND	10	11	110		12	120		70-130	9		20
Bromoform	ND	10	9.9	99		10	100		54-136	1		20
1,1,2,2-Tetrachloroethane	ND	10	12	120		12	120		67-130	0		20
Benzene	ND	10	12	120		12	120		70-130	0		20
Toluene	ND	10	11	110		11	110		70-130	0		20
Ethylbenzene	ND	10	10	100		11	110		70-130	10		20
Chloromethane	1.4J	10	15	**150**	Q	16	**160**	Q	64-130	6		20
Bromomethane	ND	10	6.8	68		7.9	79		39-139	15		20
Vinyl chloride	ND	10	12	120		12	120		55-140	0		20

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,05-07,10,12 QC Batch ID: WG1272314-6 WG1272314-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Chloroethane	ND	10	12	120		12	120		55-138	0		20
1,1-Dichloroethene	ND	10	12	120		12	120		61-145	0		20
trans-1,2-Dichloroethene	ND	10	11	110		12	120		70-130	9		20
Trichloroethene	ND	10	11	110		12	120		70-130	9		20
1,2-Dichlorobenzene	ND	10	11	110		11	110		70-130	0		20
1,3-Dichlorobenzene	ND	10	10	100		11	110		70-130	10		20
1,4-Dichlorobenzene	ND	10	10	100		11	110		70-130	10		20
Methyl tert butyl ether	ND	10	11	110		12	120		63-130	9		20
p/m-Xylene	ND	20	21	105		22	110		70-130	5		20
o-Xylene	ND	20	22	110		22	110		70-130	0		20
cis-1,2-Dichloroethene	ND	10	12	120		12	120		70-130	0		20
Styrene	ND	20	20	100		22	110		70-130	10		20
Dichlorodifluoromethane	ND	10	11	110		11	110		36-147	0		20
Acetone	13	10	25	120		23	100		58-148	8		20
Carbon disulfide	ND	10	11	110		12	120		51-130	9		20
2-Butanone	ND	10	13	130		14	**140**	Q	63-138	7		20
4-Methyl-2-pentanone	ND	10	12	120		12	120		59-130	0		20
2-Hexanone	ND	10	13	130		14	**140**	Q	57-130	7		20
Bromochloromethane	ND	10	12	120		12	120		70-130	0		20
1,2-Dibromoethane	ND	10	11	110		12	120		70-130	9		20
1,2-Dibromo-3-chloropropane	ND	10	11	110		12	120		41-144	9		20
Isopropylbenzene	ND	10	10	100		11	110		70-130	10		20
1,2,3-Trichlorobenzene	ND	10	12	120		13	130		70-130	8		20

ATTACHMENT_VOC_4 (cont.)

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Client ID: HVRA-MW100-190808	Associated sample(s): 01,05-07,10,12			QC Batch ID: WG1272314-6		WG1272314-7			QC Sample: L1935927-05			
1,2,4-Trichlorobenzene	ND	10	11	110		12	120		70-130	9		20
Methyl Acetate	ND	10	12	120		13	130		70-130	8		20
Cyclohexane	ND	10	11	110		11	110		70-130	0		20
1,4-Dioxane	ND	500	830	**166**	Q	980	**196**	Q	56-162	17		20
Freon-113	ND	10	10	100		11	110		70-130	10		20
Methyl cyclohexane	ND	10	9.9J	99		10	100		70-130	1		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		103		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	99		100		70-130
Toluene-d8	98		98		70-130

ATTACHMENT_VOC_5

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Methylene chloride	ND	109	110	101		110	98		70-130	5		30
1,1-Dichloroethane	ND	109	120	108		110	104		70-130	6		30
Chloroform	ND	109	110	101		100	97		70-130	7		30
Carbon tetrachloride	ND	109	130	115		120	112		70-130	5		30
1,2-Dichloropropane	ND	109	110	104		100	98		70-130	8		30
Dibromochloromethane	ND	109	96	88		88	82		70-130	9		30
1,1,2-Trichloroethane	ND	109	93	85		86	81		70-130	7		30
Tetrachloroethene	0.66	109	99	90		93	87		70-130	5		30
Chlorobenzene	ND	109	89	81		80	75		70-130	11		30
Trichlorofluoromethane	ND	109	140	128		130	124		70-139	6		30
1,2-Dichloroethane	ND	109	110	98		100	94		70-130	7		30
1,1,1-Trichloroethane	ND	109	120	113		120	108		70-130	7		30
Bromodichloromethane	ND	109	110	99		99	93		70-130	9		30
trans-1,3-Dichloropropene	ND	109	96	88		90	84		70-130	7		30
cis-1,3-Dichloropropene	ND	109	110	103		100	97		70-130	8		30
Bromoform	ND	109	87	79		76	71		70-130	13		30
1,1,2,2-Tetrachloroethane	ND	109	77	70		68	**64**	Q	70-130	12		30
Benzene	ND	109	110	103		110	98		70-130	6		30
Toluene	ND	109	100	91		92	86		70-130	8		30
Ethylbenzene	ND	109	99	91		91	85		70-130	9		30
Chloromethane	ND	109	120	111		120	110		52-130	3		30
Bromomethane	ND	109	120	106		130	118		57-147	8		30
Vinyl chloride	ND	109	130	117		130	119		67-130	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Chloroethane	ND	109	150	138		140	130		50-151	8		30
1,1-Dichloroethene	ND	109	120	112		120	112		65-135	2		30
trans-1,2-Dichloroethene	ND	109	110	104		110	102		70-130	4		30
Trichloroethene	ND	109	110	100		100	95		70-130	8		30
1,2-Dichlorobenzene	ND	109	71	**66**	Q	59	**55**	Q	70-130	20		30
1,3-Dichlorobenzene	ND	109	73	**67**	Q	62	**58**	Q	70-130	17		30
1,4-Dichlorobenzene	ND	109	69	**64**	Q	58	**54**	Q	70-130	18		30
Methyl tert butyl ether	ND	109	110	99		100	97		66-130	5		30
p/m-Xylene	ND	218	200	90		180	83		70-130	10		30
o-Xylene	ND	218	190	89		170	82		70-130	11		30
cis-1,2-Dichloroethene	ND	109	110	103		110	99		70-130	6		30
Styrene	ND	218	190	87		170	78		70-130	13		30
Dichlorodifluoromethane	ND	109	130	121		130	121		30-146	2		30
Acetone	31	109	150	111		130	91		54-140	17		30
Carbon disulfide	ND	109	120	108		110	105		59-130	5		30
2-Butanone	ND	109	99	91		93	88		70-130	6		30
4-Methyl-2-pentanone	ND	109	97	89		90	85		70-130	7		30
2-Hexanone	ND	109	85	78		80	75		70-130	7		30
Bromochloromethane	ND	109	110	101		100	97		70-130	7		30
1,2-Dibromoethane	ND	109	95	87		87	82		70-130	8		30
1,2-Dibromo-3-chloropropane	ND	109	79	73		68	**64**	Q	68-130	16		30
Isopropylbenzene	ND	109	95	87		87	82		70-130	8		30
1,2,3-Trichlorobenzene	ND	109	50	**45**	Q	36	**34**	Q	70-130	**31**	Q	30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273127-6 WG1273127-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
1,2,4-Trichlorobenzene	ND	109	51	**47**	Q	40	**37**	Q	70-130	25		30
Methyl Acetate	ND	109	210	**188**	Q	200	**188**	Q	51-146	2		30
Cyclohexane	ND	109	140	124		130	121		59-142	5		30
1,4-Dioxane	ND	5450	6100	112		6200	117		65-136	2		30
Freon-113	ND	109	130	118		130	117		50-139	3		30
Methyl cyclohexane	ND	109	120	110		120	111		70-130	2		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	103		102		70-130
Toluene-d8	94		94		70-130

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/16/19 22:39
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.7	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/14/19 01:58
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1271251-1					
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Isophorone	ND		ug/l	5.0	1.2
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	3.5		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1273531-2 WG1273531-3								
1,2,4,5-Tetrachlorobenzene	96		90		40-117	6		50
Acetophenone	107		97		14-144	10		50
2,4,6-Trichlorophenol	101		95		30-130	6		50
p-Chloro-m-cresol	**108**	Q	97		26-103	11		50
2-Chlorophenol	**108**	Q	98		25-102	10		50
2,4-Dichlorophenol	103		93		30-130	10		50
2,4-Dimethylphenol	104		96		30-130	8		50
2-Nitrophenol	111		103		30-130	7		50
4-Nitrophenol	109		100		11-114	9		50
2,4-Dinitrophenol	92		86		4-130	7		50
4,6-Dinitro-o-cresol	117		107		10-130	9		50
Pentachlorophenol	92		86		17-109	7		50
Phenol	**97**	Q	88		26-90	10		50
2-Methylphenol	110		100		30-130.	10		50
3-Methylphenol/4-Methylphenol	104		95		30-130	9		50
2,4,5-Trichlorophenol	103		94		30-130	9		50
Carbazole	98		90		54-128	9		50
Atrazine	103		97		40-140	6		50
Benzaldehyde	107		86		40-140	22		50
Caprolactam	98		91		15-130	7		50
2,3,4,6-Tetrachlorophenol	97		89		40-140	9		50
1,4-Dioxane	75		71		40-140	5		50

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-6 WG1271251-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Bis(2-chloroethyl)ether	ND	18.2	13	72		12	66		40-140	8		30
3,3'-Dichlorobenzidine	ND	18.2	2.9J	**16**	Q	3.2J	**18**	Q	40-140	10		30
2,4-Dinitrotoluene	ND	18.2	15	83		14	77		48-143	7		30
2,6-Dinitrotoluene	ND	18.2	17	94		16	88		40-140	6		30
4-Chlorophenyl phenyl ether	ND	18.2	15	83		14	77		40-140	7		30
4-Bromophenyl phenyl ether	ND	18.2	15	83		14	77		40-140	7		30
Bis(2-chloroisopropyl)ether	ND	18.2	16	88		15	83		40-140	6		30
Bis(2-chloroethoxy)methane	ND	18.2	15	83		14	77		40-140	7		30
Hexachlorocyclopentadiene	ND	18.2	14.J	77		14.J	77		40-140	0		30
Isophorone	ND	18.2	16	88		15	83		40-140	6		30
Nitrobenzene	ND	18.2	15	83		14	77		40-140	7		30
NDPA/DPA	ND	18.2	14	77		13	72		40-140	7		30
n-Nitrosodi-n-propylamine	ND	18.2	16	88		16	88		29-132	0		30
Bis(2-ethylhexyl)phthalate	ND	18.2	18	99		17	94		40-140	6		30
Butyl benzyl phthalate	ND	18.2	20	110		18	99		40-140	11		30
Di-n-butylphthalate	ND	18.2	18	99		17	94		40-140	6		30
Di-n-octylphthalate	ND	18.2	21	120		20	110		40-140	5		30
Diethyl phthalate	ND	18.2	16	88		15	83		40-140	6		30
Dimethyl phthalate	ND	18.2	18	99		17	94		40-140	6		30
Biphenyl	ND	18.2	14	77		14	77		40-140	0		30
4-Chloroaniline	ND	18.2	7.0	**39**	Q	8.0	44		40-140	13		30
2-Nitroaniline	ND	18.2	17	94		16	88		52-143	6		30
3-Nitroaniline	ND	18.2	9.1	50		8.6	47		25-145	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-6 WG1271251-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
4-Nitroaniline	ND	18.2	11	61		11	61		51-143	0		30
Dibenzofuran	ND	18.2	14	77		13	72		40-140	7		30
1,2,4,5-Tetrachlorobenzene	ND	18.2	14	77		13	72		2-134	7		30
Acetophenone	ND	18.2	12	66		12	66		39-129	0		30
2,4,6-Trichlorophenol	ND	18.2	15	83		14	77		30-130	7		30
p-Chloro-m-cresol	ND	18.2	18	**99**	Q	16	88		23-97	12		30
2-Chlorophenol	ND	18.2	14	77		13	72		27-123	7		30
2,4-Dichlorophenol	ND	18.2	14	77		14	77		30-130	0		30
2,4-Dimethylphenol	ND	18.2	3.7J	**20**	Q	3.8J	**21**	Q	30-130	3		30
2-Nitrophenol	ND	18.2	15	83		14	77		30-130	7		30
4-Nitrophenol	ND	18.2	14	77		17	**94**	Q	10-80	19		30
2,4-Dinitrophenol	ND	18.2	16.J	88		16.J	88		20-130	0		30
4,6-Dinitro-o-cresol	ND	18.2	17	94		16	88		20-164	6		30
Phenol	ND	18.2	11	61		11	61		12-110	0		30
2-Methylphenol	ND	18.2	12	66		11	61		30-130	9		30
3-Methylphenol/4-Methylphenol	ND	18.2	13	72		12	66		30-130	8		30
2,4,5-Trichlorophenol	ND	18.2	18	99		16	88		30-130	12		30
Carbazole	ND	18.2	17	94		16	88		55-144	6		30
Atrazine	ND	18.2	23	130		22	120		40-140	4		30
Benzaldehyde	ND	18.2	13	72		12	66		40-140	8		30
Caprolactam	ND	18.2	11	61		12	66		10-130	9		30
2,3,4,6-Tetrachlorophenol	ND	18.2	15	83		14	77		40-140	7		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1271251-4 WG1271251-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
4-Nitroaniline	ND	18.2	17	94		16	88		51-143	6		30
Dibenzofuran	ND	18.2	16	88		15	83		40-140	6		30
1,2,4,5-Tetrachlorobenzene	ND	18.2	16	88		16	88		2-134	0		30
Acetophenone	ND	18.2	14	77		15	83		39-129	7		30
2,4,6-Trichlorophenol	ND	18.2	18	99		18	99		30-130	0		30
p-Chloro-m-cresol	ND	18.2	20	**110**	Q	20	**110**	Q	23-97	0		30
2-Chlorophenol	ND	18.2	16	88		16	88		27-123	0		30
2,4-Dichlorophenol	ND	18.2	17	94		17	94		30-130	0		30
2,4-Dimethylphenol	ND	18.2	8.4	46		8.2	45		30-130	2		30
2-Nitrophenol	ND	18.2	18	99		18	99		30-130	0		30
4-Nitrophenol	ND	18.2	16	**88**	Q	16	**88**	Q	10-80	0		30
2,4-Dinitrophenol	ND	18.2	17.J	94		16.J	88		20-130	6		30
4,6-Dinitro-o-cresol	ND	18.2	20	110		19	100		20-164	5		30
Phenol	ND	18.2	14	77		13	72		12-110	7		30
2-Methylphenol	ND	18.2	15	83		15	83		30-130	0		30
3-Methylphenol/4-Methylphenol	ND	18.2	17	94		16	88		30-130	6		30
2,4,5-Trichlorophenol	ND	18.2	21	120		20	110		30-130	5		30
Carbazole	ND	18.2	20	110		19	100		55-144	5		30
Atrazine	ND	18.2	27	**150**	Q	25	140		40-140	8		30
Benzaldehyde	ND	18.2	15	83		15	83		40-140	0		30
Caprolactam	ND	18.2	14	77		14	77		10-130	0		30
2,3,4,6-Tetrachlorophenol	ND	18.2	18	99		17	94		40-140	6		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Acenaphthene	ND	1560	1300	83		1300	83		31-137	0		50
Hexachlorobenzene	ND	1560	1300	83		1300	83		40-140	0		50
Bis(2-chloroethyl)ether	ND	1560	1500	96		1400	89		40-140	7		50
2-Chloronaphthalene	ND	1560	1300	83		1200	77		40-140	8		50
3,3'-Dichlorobenzidine	ND	1560	980	63		1200	77		40-140	20		50
2,4-Dinitrotoluene	ND	1560	1500	96		1500	96		40-132	0		50
2,6-Dinitrotoluene	ND	1560	1500	96		1400	89		40-140	7		50
Fluoranthene	550	1560	2000	93		2200	110		40-140	10		50
4-Chlorophenyl phenyl ether	ND	1560	1200	77		1200	77		40-140	0		50
4-Bromophenyl phenyl ether	ND	1560	1300	83		1300	83		40-140	0		50
Bis(2-chloroisopropyl)ether	ND	1560	1200	77		1100	70		40-140	9		50
Bis(2-chloroethoxy)methane	ND	1560	1500	96		1400	89		40-117	7		50
Hexachlorobutadiene	ND	1560	1300	83		1300	83		40-140	0		50
Hexachlorocyclopentadiene	ND	1560	650	42		280J	**18**	Q	40-140	**80**	Q	50
Hexachloroethane	ND	1560	1400	89		1200	77		40-140	15		50
Isophorone	ND	1560	1600	100		1600	100		40-140	0		50
Naphthalene	ND	1560	1400	89		1400	89		40-140	0		50
Nitrobenzene	ND	1560	1600	100		1500	96		40-140	6		50
NDPA/DPA	ND	1560	1300	83		1300	83		36-157	0		50
n-Nitrosodi-n-propylamine	ND	1560	1600	100		1500	96		32-121	6		50
Bis(2-ethylhexyl)phthalate	ND	1560	1400	89		1500	96		40-140	7		50
Butyl benzyl phthalate	ND	1560	1500	96		1500	96		40-140	0		50
Di-n-butylphthalate	ND	1560	1500	96		1500	96		40-140	0		50

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273531-4 WG1273531-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
1,2,4,5-Tetrachlorobenzene	ND	1560	1400	89		1300	83		40-117	7		50
Acetophenone	ND	1560	1600	100		1500	96		14-144	6		50
2,4,6-Trichlorophenol	ND	1560	1500	96		1400	89		30-130	7		50
p-Chloro-m-cresol	ND	1560	1500	96		1600	100		26-103	6		50
2-Chlorophenol	ND	1560	1600	100		1600	100		25-102	0		50
2,4-Dichlorophenol	ND	1560	1600	100		1500	96		30-130	6		50
2,4-Dimethylphenol	ND	1560	1600	100		1500	96		30-130	6		50
2-Nitrophenol	ND	1560	1700	110		1600	100		30-130	6		50
4-Nitrophenol	ND	1560	1400	89		1600	100		11-114	13		50
2,4-Dinitrophenol	ND	1560	370J	24		360J	23		4-130	3		50
4,6-Dinitro-o-cresol	ND	1560	1100	70		780	50		10-130	34		50
Pentachlorophenol	ND	1560	1400	89		1400	89		17-109	0		50
Phenol	ND	1560	1600	**100**	Q	1400	89		26-90	13		50
2-Methylphenol	ND	1560	1700	110		1600	100		30-130.	6		50
3-Methylphenol/4-Methylphenol	ND	1560	1600	100		1500	96		30-130	6		50
2,4,5-Trichlorophenol	ND	1560	1500	96		1500	96		30-130	0		50
Carbazole	49J	1560	1400	89		1500	96		54-128	7		50
Atrazine	ND	1560	1500	96		1500	96		40-140	0		50
Benzaldehyde	ND	1560	1700	110		1600	100		40-140	6		50
Caprolactam	ND	1560	1300	83		1300	83		15-130	0		50
2,3,4,6-Tetrachlorophenol	ND	1560	1400	89		1400	89		40-140	0		50
1,4-Dioxane	ND	1560	1000	64		1000	64		40-140	0		50

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-07
Client ID: HVRA-EB01-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 14:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/15/19 14:45
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 08/14/19 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.08	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/13/19 12:52
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/12/19 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03-06 Batch: WG1271253-1					
Acenaphthene	0.03	J	ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	0.03	J	ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	0.06	J	ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02
Benzo(b)fluoranthene	0.04	J	ug/l	0.10	0.01
Benzo(k)fluoranthene	0.03	J	ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	0.03	J	ug/l	0.10	0.01
Anthracene	0.04	J	ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	0.05	J	ug/l	0.10	0.01
Phenanthrene	0.06	J	ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	0.03	J	ug/l	0.10	0.02
2-Methylnaphthalene	0.06	J	ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-03
Client ID: HVRA-MAINTBLDG-190807
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/07/19 15:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		21-120
Phenol-d6	63		10-120
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	100		15-120
2,4,6-Tribromophenol	**122**	Q	10-120
4-Terphenyl-d14	110		41-149

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-05 RE
Client ID: HVRA-MW100-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 13:20
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/28/19 20:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	331		ng/l	10.0	6.06	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	44		7-170

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-11 RE
Client ID: HVRA-MW104-190809
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/09/19 09:25
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/28/19 21:02
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/27/19 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	5420		ng/l	20.0	3.76	1
Perfluorooctanesulfonic Acid (PFOS)	2280		ng/l	20.0	5.04	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	79		47-153
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		42-146

ATTACHMENT_PFAS_3

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/20/19 23:52
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08-09 Batch: WG1273269-1					
Perfluorobutanoic Acid (PFBA)	0.091	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/19/19 19:58
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/16/19 09:48

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,04 Batch: WG1273199-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.336	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 08-09		Batch: WG1273269-2 WG1273269-3					
Perfluorobutanoic Acid (PFBA)	106		106		71-135	0		30
Perfluoropentanoic Acid (PFPeA)	105		105		69-132	0		30
Perfluorobutanesulfonic Acid (PFBS)	105		106		72-128	1		30
Perfluorohexanoic Acid (PFHxA)	104		108		70-132	4		30
Perfluoroheptanoic Acid (PFHpA)	109		110		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	108		110		67-130	2		30
Perfluorooctanoic Acid (PFOA)	112		110		69-133	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	88		127		64-140	**36**	Q	30
Perfluoroheptanesulfonic Acid (PFHpS)	125		118		70-132	6		30
Perfluorononanoic Acid (PFNA)	95		107		72-129	12		30
Perfluorooctanesulfonic Acid (PFOS)	125		113		68-136	10		30
Perfluorodecanoic Acid (PFDA)	101		105		69-133	4		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		102		65-137	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	116		111		63-144	4		30
Perfluoroundecanoic Acid (PFUnA)	112		107		64-136	5		30
Perfluorodecanesulfonic Acid (PFDS)	122		116		59-134	5		30
Perfluorooctanesulfonamide (FOSA)	**51**	Q	**150**	Q	67-137	**99**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	103		110		61-139	7		30
Perfluorododecanoic Acid (PFDoA)	93		90		69-135	3		30
Perfluorotridecanoic Acid (PFTrDA)	98		94		66-139	4		30
Perfluorotetradecanoic Acid (PFTA)	94		93		69-133	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-6 WG1274408-7 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
Perfluorobutanoic Acid (PFBA)	75.9	36.1	114	106		122	126		67-148	7		30
Perfluoropentanoic Acid (PFPeA)	258	36.1	293	97		310	142		63-161	6		30
Perfluorobutanesulfonic Acid (PFBS)	15.2	32	50.1	109		52.4	115		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	222	36.1	262	111		277	150		69-168	6		30
Perfluoroheptanoic Acid (PFHpA)	102	36.1	145	119		148	126		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	368	32.9	393	76		411	129		69-177	4		30
Perfluorooctanoic Acid (PFOA)	47.1	36.1	87.9	113		91.2	120		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.0	34.3	80.9	122		93.6	157		49-187	15		30
Perfluoroheptanesulfonic Acid (PFHpS)	7.56	34.3	61.1	156		58.2	146		61-179	5		30
Perfluorononanoic Acid (PFNA)	8.67	36.1	47.9	109		50.3	114		68-171	5		30
Perfluorooctanesulfonic Acid (PFOS)	595	33.4	745	**449**	Q	712	**345**	Q	52-151	5		30
Perfluorodecanoic Acid (PFDA)	28.9	36.1	64.4	98		82.7	147		63-171	25		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.628J	36.1	36.2	100		40.0	109		60-166	10		30
Perfluoroundecanoic Acid (PFUnA)	2.09	36.1	40.8	107		41.6	108		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	2.64	34.9	50.7	138		46.8	125		38-156	8		30
Perfluorooctanesulfonamide (FOSA)	23.8	36.1	55.5	88		63.4	108		46-170	13		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.1	39.4	109		37.4	102		45-170	5		30
Perfluorododecanoic Acid (PFDoA)	0.487J	36.1	33.1	92		38.9	106		67-153	16		30
Perfluorotridecanoic Acid (PFTrDA)	ND	36.1	35.8	99		39.7	108		48-158	10		30
Perfluorotetradecanoic Acid (PFTA)	ND	36.1	35.8	99		36.5	100		59-182	2		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 05,11 QC Batch ID: WG1277357-4 WG1277357-5 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	331	192	434	**54**	Q	490	83		56-173	12		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		59		7-170

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 QC Batch ID: WG1274408-4 WG1274408-5 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Perfluorobutanoic Acid (PFBA)	2.34	37.2	44.3	113		43.5	109		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	1.03J	37.2	42.9	115		42.5	113		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	32.9	36.7	111		36.7	110		65-157	0		30
Perfluorohexanoic Acid (PFHxA)	0.830J	37.2	43.8	118		42.7	114		69-168	3		30
Perfluoroheptanoic Acid (PFHpA)	ND	37.2	45.7	123		41.1	109		58-159	11		30
Perfluorohexanesulfonic Acid (PFHxS)	1.18J	33.9	37.8	111		36.6	107		69-177	3		30
Perfluorooctanoic Acid (PFOA)	ND	37.2	42.3	114		43.6	116		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35.3	41.2	117		51.4	144		49-187	22		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.3	44.7	127		42.9	120		61-179	4		30
Perfluorononanoic Acid (PFNA)	ND	37.2	43.1	116		43.2	115		68-171	0		30
Perfluorooctanesulfonic Acid (PFOS)	ND	34.4	38.4	112		37.1	107		52-151	3		30
Perfluorodecanoic Acid (PFDA)	ND	37.2	39.9	107		37.0	98		63-171	8		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.7	37.8	106		41.7	116		56-173	10		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.2	38.4	103		38.1	101		60-166	1		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.2	42.3	114		39.6	105		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.9	36.7	102		32.0	88		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	37.2	66.8	**180**	Q	34.7	92		46-170	**63**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37.2	46.8	126		36.2	96		45-170	26		30
Perfluorododecanoic Acid (PFDoA)	ND	37.2	37.1	100		35.4	94		67-153	5		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.2	47.3	127		41.5	110		48-158	13		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.2	37.7	101		37.4	100		59-182	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1273269-4 WG1273269-5 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Perfluorobutanoic Acid (PFBA)	ND	5.6	5.97	107		6.03	106		71-135	1		30
Perfluoropentanoic Acid (PFPeA)	ND	5.6	6.01	107		6.08	107		69-132	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.96	5.31	107		5.41	107		72-128	2		30
Perfluorohexanoic Acid (PFHxA)	0.069J	5.6	6.02	108		6.14	108		70-132	2		30
Perfluoroheptanoic Acid (PFHpA)	ND	5.6	6.44	115		6.48	114		71-131	1		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	5.1	5.60	110		6.10	118		67-130	9		30
Perfluorooctanoic Acid (PFOA)	ND	5.6	5.94	106		5.92	104		69-133	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	5.32	6.60	124		6.06	112		64-140	9		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	5.32	6.08	114		6.80	126		70-132	11		30
Perfluorononanoic Acid (PFNA)	ND	5.6	6.11	109		6.15	108		72-129	1		30
Perfluorooctanesulfonic Acid (PFOS)	0.356J	5.18	6.20	120		6.67	127		68-136	7		30
Perfluorodecanoic Acid (PFDA)	ND	5.6	5.98	107		5.49	97		69-133	9		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	5.37	6.11	114		6.50	119		65-137	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	5.6	5.21	93		5.08	89		63-144	3		30
Perfluoroundecanoic Acid (PFUnA)	ND	5.6	6.58	118		6.06	107		64-136	8		30
Perfluorodecanesulfonic Acid (PFDS)	ND	5.4	6.19	115		6.77	123		59-134	9		30
Perfluorooctanesulfonamide (FOSA)	ND	5.6	7.05	126		4.26	75		67-137	**49**	Q	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	5.6	6.28	112		6.11	107		61-139	3		30
Perfluorododecanoic Acid (PFDoA)	ND	5.6	5.38	96		5.60	98		69-135	4		30
Perfluorotridecanoic Acid (PFTrDA)	ND	5.6	5.91	106		6.50	114		66-139	10		30
Perfluorotetradecanoic Acid (PFTA)	ND	5.6	5.99	107		6.12	108		69-133	2		30

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-11
Client ID: HVRA-MW104-190809
Sample Location: WAPPINGERS FALLS, NY
Date Collected: 08/09/19 09:25
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**190**	Q	31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	118		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	40		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	60		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	37		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**21**	Q	33-143

ATTACHMENT_PFAS_10

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/20/19 23:52
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/16/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 08-09 Batch: WG1273269-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		70-151
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	106		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	127		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	118		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	5		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**138**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	105		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	118		26-160

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02-03,05-07,10-13 Batch: WG1274408-2 WG1274408-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		108		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98		88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		60		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		96		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	64		49		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	139		143		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	141		131		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		44		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**161**	Q	**184**	Q	23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	112		109		33-143

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

Case Narrative (continued)

the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.
WG1277821-1: The continuing calibration standard had the response for M2-8:2FTS outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.
WG1277821-2: The continuing calibration standard had the response for M2-8:2FTS outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.
WG1277821-2: The continuing calibration standard had the response for 8:2FTS outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

PCBs
L1935927-10 was extracted with the method required holding time exceeded.

Pesticides
The WG1273532-6/-7 MS/MSD recoveries, performed on L1935927-08, are outside the acceptance criteria for endrin aldehyde (0%/0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Total Metals
L1935927-08 and -09: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1271502-3/-4 MS/MSD recoveries for calcium (0%/0%), magnesium (MS at 72%) and sodium (28%/46%), performed on L1935927-03, do not apply because the sample concentration is greater than four times the spike amounts added.
The WG1271502-7 MS recovery, performed on L1935927-05, is outside the acceptance criteria for calcium

ATTACHMENT_PCB_1

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 08/14/19 12:19
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 08/13/19 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 08/14/19
Cleanup Method: EPA 3660B
Cleanup Date: 08/14/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 05-07 Batch: WG1271946-1						
Aroclor 1016	ND		ug/l	0.083	0.034	A
Aroclor 1221	ND		ug/l	0.083	0.067	A
Aroclor 1232	ND		ug/l	0.083	0.046	A
Aroclor 1242	ND		ug/l	0.083	0.039	A
Aroclor 1248	ND		ug/l	0.083	0.049	A
Aroclor 1254	ND		ug/l	0.083	0.039	A
Aroclor 1262	ND		ug/l	0.083	0.035	A
Aroclor 1268	ND		ug/l	0.083	0.034	A
Aroclor 1260	0.035	J	ug/l	0.083	0.032	B
PCBs, Total	0.035	J	ug/l	0.083	0.032	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	90		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 05-07,10,12-13 Batch: WG1272050-2 WG1272050-3									
Delta-BHC	73		88		30-150	18		20	A
Lindane	74		88		30-150	18		20	A
Alpha-BHC	73		85		30-150	15		20	A
Beta-BHC	75		90		30-150	19		20	A
Heptachlor	69		84		30-150	19		20	A
Aldrin	64		75		30-150	15		20	A
Heptachlor epoxide	75		89		30-150	18		20	A
Endrin	76		93		30-150	**21**	Q	20	A
Endrin aldehyde	56		73		30-150	**26**	Q	20	A
Endrin ketone	73		95		30-150	**26**	Q	20	A
Dieldrin	74		91		30-150	20		20	A
4,4'-DDE	75		90		30-150	18		20	A
4,4'-DDD	78		96		30-150	**21**	Q	20	A
4,4'-DDT	78		95		30-150	20		20	A
Endosulfan I	66		80		30-150	19		20	A
Endosulfan II	71		88		30-150	**22**	Q	20	A
Endosulfan sulfate	66		83		30-150	**23**	Q	20	A
Methoxychlor	71		88		30-150	**22**	Q	20	A
cis-Chlordane	71		82		30-150	14		20	A
trans-Chlordane	70		84		30-150	18		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 08-09 QC Batch ID: WG1273532-6 WG1273532-7 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808													
Delta-BHC	ND	37.5	35.3	94		20.3	54		30-150	**54**	Q	50	A
Lindane	ND	37.5	37.0	99		21.2	56		30-150	**54**	Q	50	A
Alpha-BHC	ND	37.5	37.4	100		21.9	58		30-150	**52**	Q	50	A
Beta-BHC	ND	37.5	37.4	100		25.5	67		30-150	38		50	A
Heptachlor	ND	37.5	28.8	77		17.6	47		30-150	48		50	A
Aldrin	ND	37.5	29.5	79		17.4	46		30-150	**52**	Q	50	A
Heptachlor epoxide	ND	37.5	32.6	87		19.4	51		30-150	**51**	Q	50	A
Endrin	ND	37.5	35.6	95		21.4	57		30-150	50		50	A
Endrin aldehyde	207E	37.5	29.0	**0**	Q	16.0	**0**	Q	30-150	**58**	Q	50	B
Endrin ketone	ND	37.5	31.4	84		16.8	44		30-150	**61**	Q	50	A
Dieldrin	ND	37.5	34.1	91		19.9	53		30-150	**53**	Q	50	A
4,4'-DDE	1.65J	37.5	41.2	110		23.2	61		30-150	**56**	Q	50	B
4,4'-DDD	ND	37.5	37.2	99		21.4	57		30-150	**54**	Q	50	B
4,4'-DDT	ND	37.5	36.8	98		22.3	59		30-150	49		50	A
Endosulfan I	ND	37.5	28.7	77		17.6	47		30-150	48		50	A
Endosulfan II	ND	37.5	32.2	86		18.2	48		30-150	**56**	Q	50	A
Endosulfan sulfate	ND	37.5	25.3	68		12.5	33		30-150	**68**	Q	50	A
Methoxychlor	ND	37.5	29.0	77		17.2	45		30-150	**51**	Q	50	A
cis-Chlordane	ND	37.5	27.5	73		19.1	51		30-150	36		50	A
trans-Chlordane	ND	37.5	36.6	98		22.4	59		30-150	48		50	A

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1935927
Report Date: 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-08
Client ID: HVRA-OF1-190808
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/08/19 16:00
Date Received: 08/09/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/19/19 13:53
Analyst: AMC
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 02:18
Cleanup Method: EPA 3620B
Cleanup Date: 08/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.85	0.362	1	A
Lindane	ND		ug/kg	0.770	0.344	1	A
Alpha-BHC	ND		ug/kg	0.770	0.219	1	A
Beta-BHC	ND		ug/kg	1.85	0.701	1	A
Heptachlor	ND		ug/kg	0.924	0.414	1	A
Aldrin	ND		ug/kg	1.85	0.651	1	A
Heptachlor epoxide	ND		ug/kg	3.47	1.04	1	A
Endrin	ND		ug/kg	0.770	0.316	1	A
Endrin aldehyde	207	E	ug/kg	2.31	0.809	1	B
Endrin ketone	ND		ug/kg	1.85	0.476	1	A
Dieldrin	ND		ug/kg	1.16	0.578	1	A
4,4'-DDE	1.65	J	ug/kg	1.85	0.428	1	B
4,4'-DDD	ND		ug/kg	1.85	0.659	1	B
4,4'-DDT	ND		ug/kg	3.47	1.49	1	A
Endosulfan I	ND		ug/kg	1.85	0.437	1	A
Endosulfan II	ND		ug/kg	1.85	0.618	1	A
Endosulfan sulfate	ND		ug/kg	0.770	0.367	1	A
Methoxychlor	ND		ug/kg	3.47	1.08	1	A
Toxaphene	ND		ug/kg	34.7	9.70	1	A
cis-Chlordane	ND		ug/kg	2.31	0.644	1	A
trans-Chlordane	ND		ug/kg	2.31	0.610	1	A
Chlordane	ND		ug/kg	15.0	6.12	1	A

Project Name: HVRA **Lab Number:** L1935927

Project Number: 18.8090 **Report Date:** 11/06/19

SAMPLE RESULTS

Lab ID: L1935927-07 Date Collected: 08/08/19 14:20

Client ID: HVRA-EB01-190808 Date Received: 08/09/19

Sample Location: WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Calcium, Total	0.202		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Iron, Total	0.0210	J	mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	08/15/19 14:42	08/15/19 23:43	EPA 7470A	1,7470A	MG
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 15:56	EPA 3005A	1,6020B	AM

ATTACHMENT_METALS_2

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1935927
Report Date: 11/06/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-07,10,12-13 Batch: WG1271502-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Antimony, Total	ND		mg/l	0.00400	0.00042	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Calcium, Total	ND		mg/l	0.100	0.0394	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Iron, Total	ND		mg/l	0.0500	0.0191	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	0.00044	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Potassium, Total	ND		mg/l	0.100	0.0309	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Sodium, Total	ND		mg/l	0.100	0.0293	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Thallium, Total	ND		mg/l	0.00050	0.00014	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	08/12/19 22:45	08/13/19 14:26	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-09 Batch: WG1272465-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB
Arsenic, Total	0.100	J	mg/kg	0.400	0.083	1	08/14/19 21:28	08/15/19 15:49	1,6010D	AB

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-7 WG1271502-8 QC Sample: L1935927-05 Client ID: HVRA-MW100-190808											
Aluminum, Total	0.0100	2	1.99	99		2.22	110		75-125	11	20
Antimony, Total	ND	0.5	0.4019	80		0.4579	92		75-125	13	20
Arsenic, Total	0.00032J	0.12	0.1248	104		0.1283	107		75-125	3	20
Barium, Total	0.01562	2	2.012	100		2.147	106		75-125	6	20
Beryllium, Total	ND	0.05	0.05898	118		0.05549	111		75-125	6	20
Cadmium, Total	ND	0.051	0.05334	104		0.05600	110		75-125	5	20
Calcium, Total	37.4	10	41.4	**40**	Q	45.0	76		75-125	8	20
Chromium, Total	0.00069J	0.2	0.1996	100		0.2156	108		75-125	8	20
Cobalt, Total	ND	0.5	0.5023	100		0.5347	107		75-125	6	20
Copper, Total	0.00095J	0.25	0.2401	96		0.2516	101		75-125	5	20
Iron, Total	0.0211J	1	1.12	112		1.14	114		75-125	2	20
Lead, Total	ND	0.51	0.5286	104		0.5648	111		75-125	7	20
Magnesium, Total	7.72	10	17.1	94		18.5	108		75-125	8	20
Manganese, Total	0.03920	0.5	0.5259	97		0.5702	106		75-125	8	20
Nickel, Total	0.00057J	0.5	0.5061	101		0.5414	108		75-125	7	20
Potassium, Total	3.16	10	12.7	95		13.7	105		75-125	8	20
Selenium, Total	ND	0.12	0.131	109		0.142	118		75-125	8	20
Silver, Total	ND	0.05	0.05033	101		0.05215	104		75-125	4	20
Sodium, Total	135.	10	127	**0**	Q	137	**20**	Q	75-125	8	20
Thallium, Total	ND	0.12	0.1241	103		0.1337	111		75-125	7	20
Vanadium, Total	ND	0.5	0.5003	100		0.5506	110		75-125	10	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-07,10,12-13 QC Batch ID: WG1271502-3 WG1271502-4 QC Sample: L1935927-03 Client ID: HVRA-MAINTBLDG-190807												
Aluminum, Total	ND	2	2.09	104		2.16	108		75-125	3		20
Antimony, Total	0.00125J	0.5	0.4393	88		0.4867	97		75-125	10		20
Arsenic, Total	0.00810	0.12	0.1390	109		0.1377	108		75-125	1		20
Barium, Total	0.1521	2	2.260	105		2.359	110		75-125	4		20
Beryllium, Total	ND	0.05	0.05027	100		0.05284	106		75-125	5		20
Cadmium, Total	ND	0.051	0.05822	114		0.06010	118		75-125	3		20
Calcium, Total	148.	10	142	**0**	Q	147	**0**	Q	75-125	3		20
Chromium, Total	ND	0.2	0.2105	105		0.2185	109		75-125	4		20
Cobalt, Total	ND	0.5	0.5412	108		0.5532	111		75-125	2		20
Copper, Total	0.00093J	0.25	0.2577	103		0.2587	103		75-125	0		20
Iron, Total	0.434	1	1.58	115		1.58	115		75-125	0		20
Lead, Total	ND	0.51	0.5548	109		0.5836	114		75-125	5		20
Magnesium, Total	42.7	10	49.9	**72**	Q	51.1	84		75-125	2		20
Manganese, Total	0.2582	0.5	0.7640	101		0.7783	104		75-125	2		20
Nickel, Total	0.00112J	0.5	0.5324	106		0.5666	113		75-125	6		20
Potassium, Total	3.04	10	13.3	103		13.8	108		75-125	4		20
Selenium, Total	ND	0.12	0.125	104		0.138	115		75-125	10		20
Silver, Total	ND	0.05	0.05292	106		0.05378	108		75-125	2		20
Sodium, Total	86.9	10	89.7	**28**	Q	91.5	**46**	Q	75-125	2		20
Thallium, Total	0.00018J	0.12	0.1297	108		0.1353	113		75-125	4		20
Vanadium, Total	ND	0.5	0.5446	109		0.5554	111		75-125	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery		Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1272465-3 WG1272465-4 QC Sample: L1935927-08 Client ID: HVRA-OF1-190808												
Aluminum, Total	8980	186	8440	0	Q	8490	0	Q	75-125	1		20
Antimony, Total	0.777J	46.6	45.7	98		46.5	101		75-125	2		20
Arsenic, Total	5.14	11.2	16.3	100		17.1	108		75-125	5		20
Barium, Total	64.5	186	220	83		226	88		75-125	3		20
Beryllium, Total	0.253J	4.66	4.59	98		4.46	97		75-125	3		20
Cadmium, Total	0.641J	4.76	4.99	105		4.79	102		75-125	4		20
Calcium, Total	19600	932	6690	0	Q	33000	1460	Q	75-125	133	Q	20
Chromium, Total	9.22	18.6	25.8	89		24.4	83		75-125	6		20
Cobalt, Total	6.50	46.6	45.5	84		43.1	80		75-125	5		20
Copper, Total	16.4	23.3	40.0	101		37.8	93		75-125	6		20
Iron, Total	18600	93.2	22000	3640	Q	18400	0	Q	75-125	18		20
Lead, Total	21.9	47.6	56.4	72	Q	56.8	74	Q	75-125	1		20
Magnesium, Total	13000	932	6630	0	Q	17000	435	Q	75-125	88	Q	20
Manganese, Total	891	46.6	516	0	Q	616	0	Q	75-125	18		20
Nickel, Total	13.9	46.6	52.2	82		49.4	77		75-125	6		20
Potassium, Total	283	932	1160	94		1180	98		75-125	2		20
Selenium, Total	ND	11.2	10.8	96		10.8	98		75-125	0		20
Silver, Total	ND	28	28.2	101		29.4	107		75-125	4		20
Sodium, Total	87.5J	932	1050	112		1080	118		75-125	3		20
Thallium, Total	ND	11.2	8.73	78		8.41	76		75-125	4		20
Vanadium, Total	10.4	46.6	54.4	94		54.5	96		75-125	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1935927

Report Date: 11/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 08-09 Batch: WG1271126-2 WG1271126-3								
Cyanide, Total	**75**	Q	**70**	Q	80-120	0		35
General Chemistry - Westborough Lab Associated sample(s): 03-04,06-07,10,12-13 Batch: WG1271313-2 WG1271313-3								
Cyanide, Total	109		108		85-115	1		20
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1271717-2 WG1271717-3								
Cyanide, Total	106		106		85-115	0		20

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Poughkeepsie, New York

Lab Number: L1940894

Alpha Analytical

Report Date: September 25, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1940894
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of 1,4-dioxane and per- and polyfluorinated alkyl substances (PFAS) data contained within Alpha Analytical report #L1940894 for C.T. Male Associates, Poughkeepsie, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on September 6, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA, which is accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip blank sample analysis. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank

One trip blank sample was collected and it was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. No target compounds were detected above the MDL in the trip blank sample with the exception of perfluorohexanoic acid (PFHxA). Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1. PFHxA was also detected in the method blank at a slightly higher concentration. Data evaluation based on blank detections is addressed under the method blank section.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of PFHxA. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_2. The higher blank concentration for this analyte was compared against the project sample analyte concentrations. Sample concentrations less than or equal to five times the higher blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentration greater than five times the higher blank detection were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), surrogate standards, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD and MS/MSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the exception of the perfluorotridecanoic acid (PFTA) LCSD recovery that exceeded laboratory acceptance criteria indicating a potential high bias; however, no data were qualified because the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_3.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chain of custody.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory that the branched perfluorohexanesulfonic acid (br-PFHxS) continuing calibration verification (CCV) standard was outside laboratory acceptance criteria; however, no data were qualified because the PFHxS CCV was within laboratory acceptance criteria. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_4.

Table 1 - Qualifier Summary

Alpha Report #: L1940894

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-1601RT376-190906	PFHxA	UB	Remove 'J' qualifier and change to non-detect

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1940894

Report Date: 09/25/19

SAMPLE RESULTS

Lab ID: L1940894-03
Client ID: LTB01-190906
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/06/19 00:00
Date Received: 09/06/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/24/19 22:12
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.79	0.366	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.79	0.355	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	0.373	J	ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.79	0.337	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.79	0.616	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.79	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.79	0.452	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.79	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.581	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.233	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.878	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.520	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.720	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.333	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.293	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	ND		ng/l	1.79	0.211	1

ATTACHMENT_PFAS_2

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/24/19 15:34
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/19/19 15:11

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1286055-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.424	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

ATTACHMENT_PFAS_3

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940894
Report Date: 09/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1286055-2 WG1286055-3								
Perfluorobutanoic Acid (PFBA)	134		133		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	121		120		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	106		111		65-157	5		30
Perfluorohexanoic Acid (PFHxA)	130		130		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	130		131		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	136		138		69-177	1		30
Perfluorooctanoic Acid (PFOA)	128		124		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	120		149		49-187	22		30
Perfluoroheptanesulfonic Acid (PFHpS)	99		108		61-179	9		30
Perfluorononanoic Acid (PFNA)	130		131		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	123		128		52-151	4		30
Perfluorodecanoic Acid (PFDA)	131		127		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	119		134		56-173	12		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	127		144		60-166	13		30
Perfluoroundecanoic Acid (PFUnA)	126		133		60-153	5		30
Perfluorodecanesulfonic Acid (PFDS)	119		118		38-156	1		30
Perfluorooctanesulfonamide (FOSA)	114		110		46-170	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	109		136		45-170	22		30
Perfluorododecanoic Acid (PFDoA)	132		133		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	158		**164**	Q	48-158	4		30
Perfluorotetradecanoic Acid (PFTA)	134		133		59-182	1		30

Project Name: HVRA **Lab Number:** L1940894

Project Number: 18.8090 **Report Date:** 09/25/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

The WG1286055-3 LCSD recovery, associated with L1940894-01 through -03, is above the acceptance criteria for perfluorotridecanoic acid (pftrda) (164%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

WG1287384-7: The continuing calibration standard had the response for Perfluorohexanesulfonic Acid-Branched (br-PFHxS), outside of acceptance criteria. The response for Perfluorohexanesulfonic Acid (PFHxS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/25/19

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1931643

Alpha Analytical

Report Date: November 4, 2019

Prepared by

Barr Engineering Co.

November 12, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1936143
Date: November 12, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of volatile, organic compounds (VOCs), semi-volatile organic compounds (SVOCs), 1,4-dioxane, per- and polyfluorinated alkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals (TAL 23), cyanide, and total solids data contained within Alpha Analytical report #L1936143 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Laboratory duplicate
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/tao

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on August 12, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA and Alpha Analytical in Westborough, MA as indicated within the laboratory report. Each of these Alpha locations are accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing rinse, trip, and field blank samples analyses. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Rinse Blank / Trip Blank / Field Blank

Six rinse blank samples, one trip blank sample and one field blank sample were collected. The rinse blanks were used to check that equipment being used for the investigation would not introduce PFAS to the samples being collected. The trip blank was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. The field blank sample was collected to monitor PFAS contamination from any or all the following sources: sampling activities, sample transport, and storage. No target compounds were detected above the MDL in the rinse, trip, and field blank samples with the exception of perfluorooctanesulfonic acid (PFOS) that was detected in rinse blank HVRA-RB06-190812. Since rinse blank samples are intended to verify equipment is PFAS free prior to sampling in the field, they were not used in data evaluation. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of perfluorobutanoic acid (PFBA), iron, and sodium. The blank concentrations were compared against the project sample analyte concentrations. Sample concentrations less than or equal to five times the blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentrations

greater than five times the blank detection were not qualified. Excerpts from the laboratory report are provided in ATTACHMENT_PFAS_2 and ATTACHMENT_METALS_1.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), matrix spike (MS) samples, matrix spike duplicate (MSD) samples, surrogate standards, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD, MS/MSD, and laboratory duplicate sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria with the following exceptions. The carbon disulfide LCS percent recovery exceeded laboratory acceptance criteria indicating a potential high bias; however, no carbon disulfide data were qualified because the associated sample results were non-detects. Excerpt from the laboratory report is provided in ATTACHMENT_VOC_1. The 1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS) LCS/LCSD RPD exceeded laboratory acceptance criteria; however, no 8:2 FTS data were qualified because the LCS and LCSD percent recoveries were acceptable. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_3. The cyanide LCS and LCSD percent recoveries were below laboratory acceptance criteria. The cyanide results were qualified 'J' in the Table 1 – Qualifier Summary attached. Excerpts from the laboratory report are provided in ATTACHMENT_CYANIDE_1.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

An MS is a sample spiked with known concentrations of target analytes that is carried through the sample preparation and analytical procedures in order to assess the accuracy of a method in a given sample matrix. The MS/MSD sample results reported by the laboratory included both project and non-project specific samples. Results of MS/MSD samples not specific to this project were not evaluated. Where MS/MSD recoveries and/or associated RPDs failed acceptance criteria and where the sample was associated with another laboratory client, evaluation of the sample results was based on the LCS/LCSD data. Sample HVRA-MW101-1.0 served as the PFOS MS source sample. The MS percent recovery was below the laboratory acceptance criteria; however, no data were qualified because the native sample concentration was greater than four times the spike concentration so spike criteria do not apply. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_4.

Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample that is carried through the same sample preparation and analytical procedures as the native sample in order to determine the precision of the method. Laboratory duplicate sample results were evaluated for compounds where both the native and duplicate sample concentrations were greater than five times the reporting limit. Sample HVRA-MW101-0.5 served as the PFAS laboratory duplicate source sample and the RPDs were within the laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria with the exception of a low surrogate recovery in the 1,4-dioxane LCS; however, no data were qualified since the 1,4-dioxane LCS and LCSD recoveries were within laboratory acceptance criteria. Excerpt from the laboratory report is provided in ATTACHMENT_1,4-DIOXANE_1.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. Some of the extracted internal standard recoveries were outside of laboratory acceptance criteria. Where the extracted internal standard exceeded the laboratory acceptance criteria indicating a potential high bias, and the target result was not detected, no qualification was applied. If the target result was detected or when the extracted internal standard was below the laboratory acceptance criteria, the results were qualified in the Table 1 - Qualifier Summary attached.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody. On November 30, 2007, the Integrated Risk Information System (IRIS) changed the chemical name for CAS #108-60-1 from bis(2-chloroisopropyl)ether to 2,2′-oxybis(1-chloropropane). This revised name was included in EPA method 8270D and in the SVOC target analyte lists (TCL) from recent Statement of Works; however, the laboratory used the name bis(2-chloroisopropyl)ether in this report. The laboratory is reviewing how to handle this naming convention for future work.

Additional Laboratory Items

Diluted Sample

PFOS for sample HVRA-MW100-1.0 was analyzed at a 5x dilution. The laboratory also reported the 1x dilution PFOS result for this sample with an 'E' qualifier indicating that the concentration exceeded the laboratory's calibration range. The 5x dilution result should be used and the 'E' qualified, 1x dilution result should be considered unusable. The PFOS 1x dilution result was qualified 'R' in the Table 1 – Qualifier Summary attached. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_5.

Dual-Column Agreement

For the pesticides analysis, samples were analyzed using a dual-column analysis system where a second dissimilar column was utilized to confirm positive results. An RPD is calculated using the analyte result from each column and a result is considered confirmed when the RPD is ≤ 40%. However, the 4,4'-DDE in sample HVRA-MW103-0.5 was qualified by the laboratory as not meeting this criteria. The laboratory reports the higher of the two results unless obvious interference is present on one of the columns. Since the result was between the MDL and RL and already had a 'J' qualifier indicating an estimated value, no further qualification was necessary. Excerpt from the laboratory report is provided in ATTACHMENT_PESTICIDES_1.

Table 1 - Qualifier Summary

Alpha Report #: L1936143

QC Item	Sample ID	Compound	Qualification	Comment
Extracted Internal Standard	HVRA-MW100-1.0	PFBS	J	Result already 'J' qualified
		PFHxS		Add 'J' to detected result
		6:2 FTS		Add 'J' to detected result
		8:2 FTS		Add 'J' to detected result
	HVRA-MW101-2.0	NMeFOSAA		Add 'J' to non-detect result
		PFTA		Add 'J' to non-detect result
	HVRA-MW102-0.5	NMeFOSAA		Add 'J' to non-detect result
	HVRA-MW102-2.0	NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
	HVRA-MW103-0.5	NMeFOSAA		Add 'J' to non-detect result
	HVRA-MW104-0.5	PFHxS		Add 'J' to detected result
		NMeFOSAA		Add 'J' to non-detect result
	HVRA-MW104-2.0	NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
	HVRA-MW105-0.5	NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Result already 'J' qualified
	HVRA-MW105-2.0	PFBA		Result already 'J' qualified
		PFPeA		Add 'J' to detected result
		PFHxA		Result already 'J' qualified
		PFHxS		Result already 'J' qualified
		6:2 FTS		Add 'J' to non-detect result
		PFOS		Add 'J' to detected result
		NMeFOSAA		Add 'J' to non-detect result
		NEtFOSAA		Add 'J' to non-detect result
Sample Dilution	HVRA-MW100-1.0	PFOS - 1x dilution	R	Remove 'E' qualifier, use 5x dilution result

Table 1 - Qualifier Summary

Alpha Report #: L1936143

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-MW100-1.0	PFBA	UB	Remove 'J' qualifier and change to non-detect
	HVRA-MW101-1.5			
	HVRA-MW101-2.0			
	HVRA-MW102-0.5			
	HVRA-MW102-2.0			
	HVRA-MW103-0.5			
	HVRA-MW103-2.0			
	HVRA-MW104-2.0			
LCS/LCSD	HVRA-MW100-1.0	Cyanide	J	LCS/LCSD recoveries below laboratory acceptance criteria

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,07-08,12-13 Batch: WG1273356-3 WG1273356-4								
Chloroethane	100		93		50-151	7		30
1,1-Dichloroethene	135		128		65-135	5		30
trans-1,2-Dichloroethene	95		89		70-130	7		30
Trichloroethene	96		92		70-130	4		30
1,2-Dichlorobenzene	114		114		70-130	0		30
1,3-Dichlorobenzene	112		110		70-130	2		30
1,4-Dichlorobenzene	112		110		70-130	2		30
Methyl tert butyl ether	94		92		66-130	2		30
p/m-Xylene	114		111		70-130	3		30
o-Xylene	114		108		70-130	5		30
cis-1,2-Dichloroethene	94		91		70-130	3		30
Styrene	115		111		70-130	4		30
Dichlorodifluoromethane	96		92		30-146	4		30
Acetone	107		99		54-140	8		30
Carbon disulfide	**140**	Q	126		59-130	11		30
2-Butanone	98		99		70-130	1		30
4-Methyl-2-pentanone	104		102		70-130	2		30
2-Hexanone	101		100		70-130	1		30
Bromochloromethane	94		92		70-130	2		30
1,2-Dibromoethane	111		111		70-130	0		30
1,2-Dibromo-3-chloropropane	101		102		68-130	1		30
Isopropylbenzene	116		113		70-130	3		30
1,2,3-Trichlorobenzene	108		107		70-130	1		30

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 11/04/19

SAMPLE RESULTS

Lab ID: L1936143-17
Client ID: HVRA-RB06-190812
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 12:30
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 08/26/19 12:49
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 08/22/19 07:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.91	0.389	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.91	0.378	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.91	0.227	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.91	0.313	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.91	0.215	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.91	0.359	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.91	0.225	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.91	1.27	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.91	0.656	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.91	0.298	1
Perfluorooctanesulfonic Acid (PFOS)	0.542	J	ng/l	1.91	0.481	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.91	0.290	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.91	1.16	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.91	0.618	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.91	0.248	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.91	0.935	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.91	0.553	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.91	0.767	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.91	0.355	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.91	0.312	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.91	0.237	1
PFOA/PFOS, Total	0.542	J	ng/l	1.91	0.225	1

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 08/21/19 04:23
Analyst: AJ

Extraction Method: EPA 537(M)
Extraction Date: 08/19/19 09:28

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,04-05,07-08,12-13,15-16,18-19 Batch: WG1273984-1					
Perfluorobutanoic Acid (PFBA)	0.092	J	ug/kg	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ug/kg	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ug/kg	1.00	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ug/kg	1.00	0.053
Perfluoroheptanoic Acid (PFHpA)	ND		ug/kg	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ug/kg	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ug/kg	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ug/kg	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ug/kg	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ug/kg	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ug/kg	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ug/kg	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ug/kg	1.00	0.287
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ug/kg	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ug/kg	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ug/kg	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ug/kg	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ug/kg	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ug/kg	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ug/kg	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ug/kg	1.00	0.054
PFOA/PFOS, Total	ND		ug/kg	1.00	0.042

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,06,09-11,14,17 Batch: WG1275389-2 WG1275389-3								
Perfluorobutanoic Acid (PFBA)	104		103		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	106		104		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	108		104		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	105		104		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	107		106		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	108		109		69-177	1		30
Perfluorooctanoic Acid (PFOA)	104		102		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		97		49-187	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	107		107		61-179	0		30
Perfluorononanoic Acid (PFNA)	103		103		68-171	0		30
Perfluorooctanesulfonic Acid (PFOS)	110		109		52-151	1		30
Perfluorodecanoic Acid (PFDA)	107		104		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	123		81		56-173	**41**	Q	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		98		60-166	9		30
Perfluoroundecanoic Acid (PFUnA)	104		101		60-153	3		30
Perfluorodecanesulfonic Acid (PFDS)	95		113		38-156	17		30
Perfluorooctanesulfonamide (FOSA)	110		111		46-170	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	113		109		45-170	4		30
Perfluorododecanoic Acid (PFDoA)	108		109		67-153	1		30
Perfluorotridecanoic Acid (PFTrDA)	98		98		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	112		112		59-182	0		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,04-05,07-08,12-13,15-16,18-19 QC Batch ID: WG1273984-4 QC Sample: L1936143-02 Client ID: HVRA-MW100-1.0												
Perfluorooctanesulfonic Acid (PFOS)	363	4.71	362	0	Q	-	-		68-136	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90				65-151

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 11/04/19

Case Narrative (continued)

Report Revision

November 04, 2019: The Client ID was changed on L1936143-04.

Report Submission

August 26, 2019: This final report includes the results of all requested analyses.

August 22, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

1,4-Dioxane by 8270-SIM

The surrogate recovery for the WG1272498-2 LCS, associated with L1936143-02, is outside the acceptance criteria for 1,4-dioxane-d8 (114%). The LCS spike compounds are within overall method allowances; therefore, no further action was taken.

Perfluorinated Alkyl Acids by Isotope Dilution

L1936143-02, -05, -07, -08, -12, -15, -16, -18, -19 and WG1273984-2/-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L1936143-02: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

The WG1275389-3 LCS/LCSD RPD, associated with L1936143-01, -03, -06, -09, -10, -11, -14 and -17, is above the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (41%).

The WG1273984-4 MS recovery, performed on L1936143-02, is outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (0%). The unacceptable percent recoveries are attributed to the elevated

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02 Batch: WG1272498-2 WG1272498-3								
1,4-Dioxane	97		101		40-140	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	114	Q	108		15-110

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1936143
Report Date: 11/04/19

SAMPLE RESULTS

Lab ID: L1936143-12
Client ID: HVRA-MW103-0.5
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 08/12/19 11:50
Date Received: 08/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 08/20/19 03:54
Analyst: BM
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 08/17/19 20:01
Cleanup Method: EPA 3620B
Cleanup Date: 08/19/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.41	0.471	1	A
Lindane	ND		ug/kg	1.00	0.448	1	A
Alpha-BHC	ND		ug/kg	1.00	0.285	1	A
Beta-BHC	ND		ug/kg	2.41	0.913	1	A
Heptachlor	ND		ug/kg	1.20	0.540	1	A
Aldrin	ND		ug/kg	2.41	0.848	1	A
Heptachlor epoxide	ND		ug/kg	4.51	1.35	1	A
Endrin	ND		ug/kg	1.00	0.411	1	A
Endrin aldehyde	ND		ug/kg	3.01	1.05	1	A
Endrin ketone	ND		ug/kg	2.41	0.620	1	A
Dieldrin	ND		ug/kg	1.50	0.752	1	A
4,4'-DDE	0.886	JP	ug/kg	2.41	0.557	1	A
4,4'-DDD	ND		ug/kg	2.41	0.859	1	A
4,4'-DDT	ND		ug/kg	4.51	1.94	1	B
Endosulfan I	ND		ug/kg	2.41	0.569	1	A
Endosulfan II	ND		ug/kg	2.41	0.804	1	A
Endosulfan sulfate	ND		ug/kg	1.00	0.477	1	A
Methoxychlor	ND		ug/kg	4.51	1.40	1	A
Toxaphene	ND		ug/kg	45.1	12.6	1	A
cis-Chlordane	ND		ug/kg	3.01	0.838	1	A
trans-Chlordane	ND		ug/kg	3.01	0.794	1	A
Chlordane	ND		ug/kg	19.6	7.97	1	A

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1272975-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Iron, Total	0.692	J	mg/kg	2.00	0.361	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Sodium, Total	2.74	J	mg/kg	80.0	1.26	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	08/15/19 22:40	08/19/19 15:10	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,04-05,07-08,12-13 Batch: WG1273559-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	08/17/19 06:20	08/19/19 15:20	1,7471B	AL

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L1936143

Report Date: 11/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04-05,07-08,12-13 Batch: WG1271656-2 WG1271656-3								
Cyanide, Total	62	Q	71	Q	80-120	8		35

Data Usability Summary Report

Based on Level IIA Data Review

Prepared for:

C.T. Male Associates

Latham, New York

Lab Number: L1940308

Alpha Analytical

Report Date: September 20, 2019

Prepared by

Barr Engineering Co.

November 8, 2019

Data Usability Summary Report

To: C.T. Male Associates
Project: Hudson Valley Regional Airport (HRVA)
Report #: Alpha Analytical #L1940308
Date: November 8, 2019

This Data Usability Summary Report (DUSR) was prepared to document the Level IIA review of 1,4-dioxane and per- and polyfluorinated alkyl substances (PFAS) data contained within Alpha Analytical report #L1940308 for C.T. Male Associates, Latham, New York.

The analytical data were reviewed based on laboratories' acceptance criteria and US EPA Level IIA procedures, and this DUSR complies with NYCRR Part 375 and following guidelines in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation DER-10, Appendix 2B (Guidance for Data Deliverables and the Development of Data Usability Summary Reports) as the limitations of a Level IIA data report and validation allows.

Areas covered by the review process (where applicable) included:

- Holding time
- Blanks
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Deuterated Monitoring Compounds (DMC)/Surrogates
- Extracted internal standards
- Additional items noted by the laboratory

Data Qualifier Definitions

Qualifiers in the laboratory report should be retained unless adjusted in the Table 1 – Qualifier Summary.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the method detection limit (MDL).

UB = The analyte was not detected substantially above the level reported in the associated blank(s).

Overall Assessment

The data quality evaluation assessed the overall analytical process and determined that the results were analytically sound and are useable as reported and qualified. Additional detail is included in the following paragraphs.

Please feel free to call me at (952) 832-2660 or email at wswanson@barr.com if you have any questions regarding the documentation.

Sincerely,

Ward Swanson
Vice President
BARR ENGINEERING CO.

/dlb

Introduction

The Hudson Valley Regional Airport (HVRA) project samples for this report were collected on September 6, 2019. The sample analyses were performed by Alpha Analytical in Mansfield, MA, which is accredited in the State of New York. Both field sampling and laboratory analytical procedures were examined in the review. Field sampling procedures were evaluated utilizing trip blank sample analysis. Laboratory procedures were evaluated utilizing technical holding times, preservation, method blank samples, accuracy data, precision data, and data package completeness.

Field Sampling Procedures

Trip Blank

One trip blank sample was collected and it was analyzed to determine the extent of potential PFAS contamination introduced during sample transport and handling. No target compounds were detected above the MDL in the trip blank sample with the exception of perfluorohexanoic acid (PFHxA). Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_1. PFHxA was also detected in the method blank at a slightly higher concentration. Data evaluation based on blank detections is addressed under the method blank section.

Laboratory Procedures

Technical Holding Times / Preservation

Technical holding times and preservation were evaluated for each sample and target parameter based on EPA and method recommendations. The technical holding times were within these recommendations for the analyses. The samples arrived at the laboratory at the correct temperatures and with the appropriate preservation.

Method Blank

Method blanks were analyzed to determine the extent of potential contamination introduced by laboratory sources. They were analyzed by the laboratory for each parameter, where applicable. No target compounds were detected above the MDL in the method blank with the exception of PFHxA. Excerpt from the laboratory report is provided in ATTACHMENT_PFAS_2. The higher blank concentration for this analyte was compared against the project sample analyte concentrations. Sample concentrations less than or equal to five times the higher blank sample concentration were qualified "UB" in the Table 1 - Qualifier Summary attached. Sample concentration greater than five times the higher blank detection were not qualified.

Accuracy and Precision Data

Accuracy is the degree of agreement between an observed value and an accepted reference value and measures bias in a measurement system. Data accuracy was evaluated by comparing laboratory percent recoveries from laboratory control samples (LCS), laboratory control sample duplicates (LCSD), surrogates, and extracted internal standards to laboratory acceptance criteria. Precision measures the reproducibility of measurements under a given set of conditions and was evaluated by calculating the relative percent difference (RPD) of the LCS/LCSD sample pairs.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

An LCS is a sample of analyte-free media spiked with known concentrations of target analytes that is carried through the same sample preparation and analytical procedures as the project samples. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The LCS and LCSD percent recoveries and RPDs were within laboratory acceptance criteria.

Surrogate Standard

Surrogate standards are compounds added to every blank, project sample, and quality control sample for organic analyses to evaluate analytical efficiency by measuring recovery (accuracy). Surrogate standards are compounds not expected to be detected in environmental media. Surrogate standard recoveries were within laboratory acceptance criteria.

Extracted Internal Standard

Individually labeled standards were used as the extracted internal standards for the PFAS analysis. Extraction standards were the labeled analog of the target compounds with the exception of perfluoroheptanesulfonic acid (PFHpS), perfluorodecanesulfonic acid (PFDS), and perfluorotridecanoic acid (PFTA). The target compound concentrations were calculated using the extracted internal standards and should normalize extraction or matrix issues. The extracted internal standard recoveries were within laboratory acceptance criteria.

Data Package Completeness

Data completeness was evaluated by comparing the analyses requested with the data packages as received. The samples were reported as specified on the chains of custody.

Additional Laboratory Items

Continuing Calibration Verification

It was noted by the laboratory multiple instances where the continuing calibration verification (CCV) standard was outside of acceptance criteria. The 8:2FTS CCV standard was outside of laboratory acceptance criteria as noted in the report; however, no data were qualified since the laboratory followed their protocol which allows 10% of the reported analytes to be greater than 30%, but less than 40%. Also, the laboratory noted that two branched Perfluorooctanesulfonic Acid (PFOS) CCV standard were outside laboratory acceptance criteria; however, no data were qualified because the PFOS CCV was within laboratory acceptance criteria. Excerpt from the laboratory report discussing CCVs is provided in ATTACHMENT_PFAS_4.

Table 1 - Qualifier Summary

Alpha Report #: L1940308

QC Item	Sample ID	Compound	Qualification	Comment
Method Blank	HVRA-1610_RT_376-190904	PFHxA	UB	Remove 'J' qualifier and change to non-detect

Project Name: HVRA
Project Number: 18.8090
Lab Number: L1940308
Report Date: 09/20/19

SAMPLE RESULTS

Lab ID: L1940308-03
Client ID: HVRA-FTB01-190904
Sample Location: WAPPINGERS FALLS, NY

Date Collected: 09/04/19 14:04
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 09/20/19 02:07
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.94	0.395	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.94	0.384	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.94	0.231	1
Perfluorohexanoic Acid (PFHxA)	0.368	J	ng/l	1.94	0.318	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.94	0.218	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.94	0.364	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.94	0.229	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.94	1.29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.94	0.667	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.302	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.94	0.488	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.294	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.94	1.17	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.628	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.252	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.94	0.950	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.94	0.562	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.779	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.360	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.317	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.94	0.240	1
PFOA/PFOS, Total	ND		ng/l	1.94	0.229	1

ATTACHMENT_PFAS_2

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 09/19/19 19:46
Analyst: JW

Extraction Method: EPA 537
Extraction Date: 09/18/19 08:53

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1285457-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.392	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

ATTACHMENT_PFAS_3

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1940308
Report Date: 09/20/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1286210-1: The continuing calibration standard had the response for 8:2 FTS outside the acceptance criteria for the method. This value represents less than 10% of all compounds; therefore, the calibration was accepted.

WG1286210-3: The continuing calibration standard had the response for Perfluoroctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/20/19

APPENDIX H

SUMMARY TABLE OF OFF-SITE POTABLE WELL INVESTIGATION

Appendix H - Summary Table of Off-Site Potable Well Investigation

Map ID#	Address	Date(s) Contacted	Date Sampled	Sample Results	POET System Installation Date
Location A / A1	1581-1584 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 (Note that since results from 2019 indicated that a POET was required - no additional SC sampling as required at this location.)	9/4/2019	1,4-Dioxane: 0.216 ppb PFOS: 42.6 ppt PFOA: 33.2 ppt	August 2021
A2	1589 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/26/2021	1,4-Dioxane: ND PFOS: 6.63 ppt PFOA: 5.56 ppt	NA
A3	1593 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	4/13/2021	1,4-Dioxane: ND PFOS: 1.22 ppt PFOA: ND	NA
A4	1597 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 14.2 ppt PFOA: 1.16 ppt	Installed by others
Location B / A5	1601 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	9/6/2019 & 3/5/2021	9/6/2019: 1,4-Dioxane: ND PFOS: 0.748 ppt PFOA: ND 3/5/2021: 1,4-Dioxane: ND PFOS: 2.22 ppt PFOA: 0.941 ppt	NA
A6	1607 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/5/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.55 ppt	NA
A7	1611-1619 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A8	1629 Route 376, Wapp. Falls, NY 12591	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A9	Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A10	Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A11	30 Airport Dr, Wapp. Falls, NY 12590	1st attmept sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt by NYSDEC sent 6/24/2021 4th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
A12	1612 Route 376, Wapp. Falls, NY 12591	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 0.803 ppt PFOA: 0.68 ppt	NA
Location C / A13	1610 Route 376, Wapp. Falls, NY 12591	1st attempt sent 2/24/2021	9/4/2019 & 3/3/2021	9/4/2019: 1,4-Dioxane: ND PFOS: ND PFOA: ND 3/3/2021: 1,4-Dioxane: ND PFOS: 1.38 ppt PFOA: 0.669 ppt	NA
A14	1606 Route 376, Wapp. Falls, NY 12591	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/30/2021	1,4-Dioxane: ND PFOS: 70.1 ppt PFOA: 4.42 ppt	August 2021
A15	1602 Route 376, Wapp. Falls, NY 12591	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/30/2021	1,4-Dioxane: ND PFOS: 67 ppt PFOA: 5.76 ppt	December 2021
A16	Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A17	1592 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attemp by NYSDEC sent 6/24/2021 4th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
Location E / A18	7 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	9/4/2019 & 3/26/2021	9/4/2019: 1,4-Dioxane: ND PFOS: 22.1 ppt PFOA: 10.4 ppt 3/26/2021: 1,4-Dioxane: ND PFOS: 12.1 ppt PFOA: 6.03 ppt	Installed by others

Appendix H - Summary Table of Off-Site Potable Well Investigation

Map ID#	Address	Date(s) Contacted	Date Sampled	Sample Results	POET System Installation Date
A19	13 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/5/2021	1,4-Dioxane: ND PFOS: 2.67 ppt PFOA: 4.49 ppt	NA
A20	17 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt on 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt by NYSDEC sent 6/24/2021 4th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
A21	21 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt on 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt by NYSDEC sent 6/24/2021 4th attempt by DCDB&CH sent 7/1/2021	7/9/2021	1,4-Dioxane: ND PFOS: 11.1 ppt PFOA: 6.84 ppt	Installed by others
A22	26 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A23	18 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.31 ppt	NA
A24	16 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/26/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.37 ppt	NA
A25	14 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: 2.09 ppt PFOA: 1.7 ppt	NA
A26	12 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 1.08 ppt PFOA: 0.893 ppt	NA
A27	10 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 1.88 ppt PFOA: 1.63 ppt	NA
A28	8 Hackensack Heights Rd. Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A29	6 Hackensack Heights Rd. Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: ND PFOA: ND	NA
A30	4 Hackensack Heights Rd. Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 1.68 ppt PFOA: 0.902 ppt	NA
Location D	2 Hackensack Heights Rd. Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	9/6/2019	1,4-Dioxane: ND PFOS: 22.5 ppt PFOA: 20.7 ppt	Installed by others
A32	1560-1580 Route 376, Wapp. Falls, NY 12590	Per NYSDEC request, contacted on 2/12/2021	2/17/2021	1,4-Dioxane: ND PFOS: 1.38 ppt PFOA: 1.49 ppt	NA
A33	1540 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/26/2021	1,4-Dioxane: ND PFOS: 1.12 ppt PFOA: 1.66 ppt	NA
A34	21 Rabenda Hill Dr, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	6/16/2021	1,4-Dioxane: 0.214 ppb PFOS: 11.8 ppt PFOA: 9.09 ppt	Installed by others
A35	17 Rabenda Hill Dr, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A36	9 Rabenda Hill Dr, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A37	1534 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A38	Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	NA	NA	NA
A39	1541 Route 376, Wapp Falls, NY 12590	1st attempt sent 2/24/2021	3/8/2021	1,4-Dioxane: ND PFOS: 5.52 ppt PFOA: 1.49 ppt	NA
A40	5 Lane Gate Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	3/26/2021	1,4-Dioxane: ND PFOS: 5.05 ppt PFOA: 7.62 ppt	Installed by others
A41	11 All Angels Hill Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	NA	NA	NA

Appendix H - Summary Table of Off-Site Potable Well Investigation

Map ID#	Address	Date(s) Contacted	Date Sampled	Sample Results	POET System Installation Date
A42	1553 Route 376, Wapp Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021 4th attempt by NYSDEC sent 6/24/2021	NA	NA	NA
A43	1561-1565 Route 376, Wapp. Falls, 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	6/16/2021	1,4-Dioxane: ND PFOS: 6.72 ppt PFOA: 5.1 ppt	Installed by others
A44	1571 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	4/21/2021	1,4-Dioxane: ND PFOS: 0.87 ppt PFOA: 1.77 ppt	NA
A45	1575 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021 4th attempt by NYSDEC sent 6/24/2021 - 5th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
A46	300 New Hackensack Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021 4th attempt by NYSDEC sent 6/24/2021 5th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
A47	288 New Hackensack Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	NA	NA	NA
A48	6 All Angels Hill Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	NA	NA	NA
A49	21 Germaine Ln, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/8/2021	1,4-Dioxane: ND PFOS: ND PFOA: ND	NA
A50	4-10 Germaine Ln, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/8/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.688 ppt	NA
A51	20 All Angels Hill Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	NA	NA	NA
A52	32 Padasana Ct, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: ND PFOA: 1.48 ppt	NA
A53	40 Padasana Ct, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt in person delivery of letter by Dutchess County Legislator Lisa Paoloni on 4/3/2021	3/30/2021	1,4-Dioxane: ND PFOS: ND PFOA: ND	NA
A54	280 New Hackensack Road, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.292 ppt	NA
A55	282 New Hackensack Road, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/8/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.267 ppt	NA

Appendix H - Summary Table of Off-Site Potable Well Investigation

Map ID#	Address	Date(s) Contacted	Date Sampled	Sample Results	POET System Installation Date
A56	27 Hackensack Heights Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021 3rd attempt by NYSDEC sent 6/24/2021 4th attempt by DCDB&CH sent 7/1/2021	NA	NA	NA
A57	1528 Route 376, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: 2.56 ppt PFOA: 1.38 ppt	NA
A58	26 Padasana Ct, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A59	274 New Hackensack Rd, Wapp. Falls, Ny 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A60	44 Padasana Ct, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/9/2021	1,4-Dioxane: ND PFOS: ND PFOA: ND	NA
A61	8 Lane Gate Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 1.36 ppt PFOA: 6.02 ppt	NA
A62	32 All Angels Hill Rd, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021 2nd attempt sent 3/17/2021	NA	NA	NA
A63	49 Padasana Ct, Wapp. Falls, NY 12590	1st attempt sent 2/24/2021	3/3/2021	1,4-Dioxane: ND PFOS: 0.598 ppt PFOA: 0.474 ppt	NA
A64	18 Lane Gate Road, Wappingers Falls, NY	Scheduled on 4/15/2021	4/21/2021	1,4-Dioxane: ND PFOS: ND PFOA: 0.344 ppt	NA
A65*	16 Lane Gate Road, Wappingers Falls, NY	6/30/2021	NA	NA	NA
A66*	3 Baker Court, Wappingers Falls, NY	6/30/2021	7/12/2021	1,4-Dioxane: ND PFOS: 1.45 ppt PFOA: 6.84 ppt	NA
A67*	5 Baker Court, Wappingers Falls, NY	6/30/2021	NA	NA	NA
A68*	9 Baker Court, Wapp. Falls, NY	6/30/2021	7/9/2021	1,4-Dioxane: ND PFOS: 1.94 ppt PFOA: 3.15 ppt	NA
A69*	13 Baker Court, Wapp. Falls, NY	6/30/2021	NA	NA	NA
A70*	23 Lane Gate Road, Wappingers Falls, NY	Scheduled on 7/8/2021	7/12/2021	1,4-Dioxane: ND PFOS: 0.74 ppt PFOA: 7.15 ppt	NA

ND - Non-Detect
NA - Not Applicable
NYSDEC - New York State Department of Conservation
DCDB&CH - Dutchess County Department of Behavioral & Community Health
* - Location added by NYSDEC request in June 2021

APPENDIX I

STORMWATER POLLUTION PREVENTION PLAN AND SPDES MULTI-SECTOR GENERAL PERMIT MAY 2018

Stormwater Pollution Prevention Plan

Hudson Valley Regional Airport

263 New Hackensack Rd.
Wappingers Falls, NY

May 2018

Prepared by

C&S COMPANIES®

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

FOR

Hudson Valley Regional Airport
263 New Hackensack Road
Wappingers Falls, New York 12590

C&S ENGINEERS, INC.
499 Colonel Eileen Collins Boulevard
Syracuse, New York 13212

May 2018

Hudson Valley Regional Airport
Emergency Contact List

Oil and chemical spills, regardless of quantity, must be reported to the Director of Aviation. The Director will determine appropriate response and regulatory notifications. Refer to **Section 6.4** - Spill Prevention and Response Procedures for more detailed spill reporting requirements.

New York State regulations require any person with knowledge of a spill, leak, or discharge of petroleum to report the incident to the NYSDEC within two hours of the discovery. Notification must be made by calling the telephone hotline (518-457-7362).

When reporting a spill be sure to provide an accurate description of the facility and spill location. The address of the facility is: 263 New Hackensack Road, Wappinger Falls, New York 12590. A Discharge Notification Form containing information required to be reported in the event of a spill is located in the facility SPCC Plan.

Affiliation	Contact	Telephone
Director of Aviation	Jeff Durand (emergency)	(845) 463-6002 (845) 337-1659
Dutchess County Department of Emergency Response		(845) 486-2080
NYS Emergency Management Office	Region II Office	(845) 454-0430
Local Police and Fire Departments	Emergency	Dial 911
Dutchess County Health Department		(845) 486-4007
MidHudson Regional Hospital		(845) 483-5000
USEPA Region 2		(212) 637-3000
New York State Department of Environmental Conservation (NYSDEC)	Spill Hotline Region 3 Office	(800) 457-7362 (845) 256-3000
National Response Center		(800) 424-8802
Cleanup Contractor	Environmental Products and Services	(518) 465-4000
Environmental Consultant / Engineer	C&S Engineers	(315) 455-2000

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APPENDICES

Appendix A: Inspection Checklists & Forms

- Routine Facility Inspection Checklist
- Annual Dry Weather Flow Monitoring Form
- Annual Site Compliance Evaluation
- SWPPP Training Record Form

Appendix B: Stormwater Monitoring / Sampling Data

Appendix C: NOI, NOI Authorization Letter, and NYSDEC Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity

Appendix D: Fire Code of NYS and NFPA Spill Prevention Citations

Applicability

New York State Department of Environmental Conservation (NYSDEC or Department) Environmental Conservation Law (ECL) Article 17, Titles 7 and 8 and Article 70 requires that facilities possess a State Pollution Discharge Elimination System (SPDES) Multi-Sector General Permit (MSGP) for stormwater discharges to surface waters of the State from a point source or outlet that conduct industrial activities identified within 40 CFR Part 122.26(b)(14)(i) through (ix) and (xi), as well as other miscellaneous industrial activities designated by the NYSDEC on a case by case basis. Except as in compliance with the MSGP or an Individual Permit, discharges associated with industrial activities are unlawful. The facility is required to obtain a SPDES MSGP and prepare and implement this SWPPP because of its standard industrial code of 4581 (airports, flying fields, and terminal services); industrial activities / materials are exposed on the facility exterior; and stormwater is conveyed from the facility to waters of New York State (i.e. Wappinger Creek) via outfalls (i.e. point sources).

Maintaining Water Quality Standards

The NYSDEC expects that compliance with the conditions of the MSGP will control discharges necessary to meet applicable water quality standards. It is a violation of the ECL for any discharge authorized by the MSGP to either cause or contribute to a violation of water quality standards as contained in Parts 700-705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, including, but not limited to:

a. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

b. There shall be no suspended, colloidal and settleable solids from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages; and

c. There shall be no residue from oil and floating substances attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.

If there is evidence indicating that the stormwater discharges authorized by the MSGP are causing, have the reasonable potential to cause, or are contributing to an excursion above an applicable water quality standard, the owner or operator must take appropriate corrective action and notify the NYSDEC of corrective actions taken. The NYSDEC may require the owner or operator to conduct follow-up monitoring or provide additional information, may require the owner or operator to include and implement appropriate controls in the SWPPP to correct the problem, may require the owner or operator to obtain an individual permit and / or may take appropriate enforcement action.

If there is evidence indicating that despite compliance with the terms and conditions of the MSGP it is demonstrated that the stormwater discharges authorized are causing or contributing to a violation of water quality standards, or if the NYSDEC determines that a modification of the permit is necessary to prevent a violation of water quality standards, the authorized discharges will no longer be eligible for coverage under the MSGP. The NYSDEC may require the owner or operator to obtain an SPDES individual permit to continue discharging.

Management Approval

As required by the NYSDEC SPDES MSGP GP-0-17-004, effective March 1, 2018, a responsible corporate officer of Dutchess County must commit to the following statement regarding the contents of this Stormwater Pollution Prevention Plan (SWPPP) for the facility:

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

Name:_____ Date: _____
(Signature)

Name:_____ Title: _____
(Print)

Certification Statement

To the best of my knowledge, information, and belief, this Stormwater Pollution Prevention Plan has been prepared in substantial conformance with the NYSDEC SPDES MSGP for Stormwater Discharges Associated with Industrial Activity (GP-0-17-004) effective March 1, 2018, and the EPA Guidance Manual "Developing Your Stormwater Pollution Prevention Plan – A Guide to Industrial Operators" (EPA 833-B-09-002) dated February, 2009. The information regarding the facility contained within this report was based on a site visit, as well as available drawings and reports.

Robert N. Duclos, P.E.
New York State Registration No. 070428

Date: May 25, 2018

Plan Availability

A copy of the SWPPP will be located on-site or locally available to the Department for review at the time of an on-site inspection. The SWPPP will be made available upon request to the Department, local agency approving stormwater management plans, or the owner of a municipal separate storm sewer receiving discharge from the site. Also, in the interest of the public's right to know, the permittee must make a copy of the SWPPP available to the public upon written request.

Non-Stormwater Discharge Certification

As required by the MSGP, a responsible corporate officer of the facility must verify that stormwater discharges from the facility consist of stormwater and allowable non-stormwater sources. Allowable non-stormwater discharges are listed in 6 NYCRR Part 750-1.2(a)(29)(vi) and include the following:

- Discharges from firefighting; fire hydrant flushings; testing of firefighting equipment (water from actual firefighting activities that are emergencies or unplanned);
- Potable water sources including waterline flushings; irrigation drainage; lawn watering; uncontaminated infiltration and inflow; leakage from raw water conveyance systems;
- Exterior building, pavement, or vehicle washing that does not use soaps / detergents;
- Pavement wash waters where spills of toxic or hazardous materials, other than minor releases from motor vehicles, have occurred (unless such material has been removed);
- Air conditioning and steam condensate;
- Springs; uncontaminated groundwater; and foundation or footing drains where flows are not contaminated with process materials such as solvents provided that the permittee has implemented an effective plan for minimizing the discharge of pollutants; and
- Incidental wind-blown mist from cooling towers.

"I certify under penalty of law that the only non-stormwater that may potentially be mixed with stormwater and discharged from the site includes uncontaminated air conditioner condensate. This statement is based on information from personnel familiar with the facility. This statement was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: _____

Title: _____

Date: _____

Note: The following information is required to be attached to this certification: 1) identification of potential significant sources of non-stormwater at the site, 2) a description of the results of any test and / or evaluation for the presence of non-stormwater discharges, 3) the evaluation criteria or testing method used, 4) the date of any testing and / or evaluation, and 5) the outfalls or on-site drainage points that were directly observed during the test.

The information required in the note above is included on Annual Dry Weather Flow Monitoring Forms (**Appendix A**), completed on an annual basis and filed with the SWPPP.

Review and Evaluation

Consistent with the MSGP, the permittee will amend the SWPPP whenever:

1. There is a change in design, construction, operation, or maintenance at the facility which may have an effect on the potential for the discharge of pollutants from the facility, which has not otherwise been addressed in the SWPPP; or

2. During inspections, monitoring, or investigations by facility personnel or by local, state, or federal officials, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants from sources identified or is otherwise not achieving the general objectives of controlling pollutants in discharges from the facility.

The NYSDEC can require the SWPPP be amended if it does not meet one or more of the minimum requirement of the permit.

Completion of the Annual Site Compliance Evaluation Form and Annual Certification Report (**Appendix A**) will serve as the annual SWPPP review. Tables for documenting plan review / evaluation and technical amendments are provided below.

Table IV
Plan Review and Evaluation Documentation

Review Date	Plan Amendment		Name and Signature of Person Authorized to Review This Plan
	Will Amend	Will Not Amend	
			Print: Signature:
			Print: Signature:
			Print: Signature:
			Print: Signature:
			Print: Signature:

Table V
Amendment Log

Examples of conditions that may require amendment of the SWPPP include:

1. When facility design, construction, operation, or maintenance negatively affects the potential for stormwater contamination;
2. When BMPs fail to perform as designed;
3. When the results of inspections / sampling indicate stormwater contamination; and / or
4. When storage tanks or significant materials are added, removed, replaced, or modified.

Amendments must be documented below.

Date	Description of Amendment	Name of P.E. Certifying Technical Amendment
May 2018	Updated to reflect the requirements of MSGP GP-0-17-004. Major permit changes included: electronic DMR reporting, biannual benchmark sampling, clarifications to BMPs, changes to the representative outfall waiver, etc.	Robert N. Duclos, P.E.

1.0 FACILITY DESCRIPTION

1.1 Facility Owner and Operator:

(i) Facility Owner, Address, and Telephone:
Dutchess County
22 Market Street
Poughkeepsie, New York 12601
(845) 486-2120

(ii) Facility Operator, Address, and Telephone:
Hudson Valley Regional Airport
263 New Hackensack Road
Wappinger Falls, New York 12804
(845) 4963-6000

Contact: Jeff Durand, Director of Aviation

1.2 Physical Layout:

Hudson Valley Regional Airport (The Airport) is located along New Hackensack Road in the Town of Wappinger Falls, Dutchess County, New York. The Airport is approximately 640 acres in size and includes two runways: 6-24 which is 5,000-feet and runway 15-33 which is 3,000-feet. At the time of the preparation of this Plan, aircraft services were being handled by the fixed base operator (FBO). The FBO is contracted to provide fueling and de-icing, and provide aircraft maintenance within hangars leased from Dutchess County (The County).

Figure 1 is a United States Geologic Survey (USGS) topographic map depicting the location of the facility and surrounding features. **Figure 2** is an aerial photograph of the industrial portions of the facility. **Figure 3** is a site plan that depicts oil and chemical storage locations, activities exposed to stormwater, transfer areas, waste handling areas, impervious areas, catch basins and other stormwater features.

The facility stores and uses oils such as diesel, gasoline, virgin vehicle lubricants, jet fuel, aviation gasoline, used fuels and oils, and chemicals such as urea for runway deicing and aqueous firefighting foam (AFFF) for fire control. Activities present outdoors which could potentially be exposed to stormwater are described in Section 5.

2.0 STORMWATER POLLUTION PREVENTION TEAM

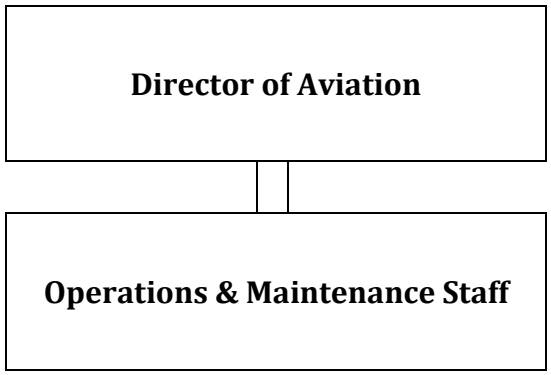
The Pollution Prevention Team for the facility was designed to identify a specific group within the facility organization that is responsible for assisting the facility in the implementation, maintenance, and revision of the SWPPP. This section of the SWPPP identifies the personnel associated with the Pollution Prevention Team and their respective responsibilities. The purpose of designating a specific personnel or team to implement the pollution prevention plan serves two main purposes:

- Identifying the personnel or team members identifies individual responsibilities in preventing stormwater pollution, and

- Identifying a specific personnel provides a point of contact with which those outside the facility can discuss key aspects of the SWPPP.

The Pollution Prevention Team was designed to identify key personnel onsite who are most familiar with the facility and its operations as well as to provide adequate structure and direction to the facility's stormwater management program. To ensure that this Plan remains effective, the Pollution Prevention Team should be aware of changes which are made in facility operations to determine if the Plan should be modified. Facility management is ultimately responsible for the implementation of this Plan and for compliance with all applicable stormwater requirements. Accordingly, the Pollution Prevention Team outlines a clear line of communication with facility management to ensure that they are able to function in a cooperative partnership. **Figure 2-1**, on the next page, is the Pollution Prevention Team organizational chart for facility.

Figure 2-1
Pollution Prevention Team Organizational Chart



Title: Director of Aviation

Responsibilities: Signatory authority. Responsible for plan development and oversight, as well as overall implementation of the SWPPP. Supervises the operation / maintenance staff to see that they are well trained and performing in accordance with procedures, evaluating operation and process changes that may influence stormwater management. Implements spill prevention and response procedures, maintain records, and ensure reports are submitted

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Title: Operations & Maintenance Staff

Responsibilities: Responsible for maintenance. Note any operation or process changes that may influence stormwater management, housekeeping, preventive maintenance, spill prevention, and response procedures.

3.0 DOCUMENTATION OF PERMIT ELGIBILITY RELATED TO ENDANGERED SPECIES AND HISTORIC PLACES

The MSGP requires that if discharges from industrial activities may adversely affect endangered or threatened species, the owner or operator must obtain a permit issued pursuant to 6 NYCRR Part 182 or a letter of non-jurisdiction from the NYSDEC. According to the NYSDEC Environmental Resource Mapper Online Tool, endangered bats may live near the Airport. However, the continued operation of the airport's stormwater drainage system is not expected to impact environmentally sensitive areas.

According to the New York State Parks, Recreation and Historic Preservation Cultural Resource Information System (CRIS) internet application, the Airport is located in an archeologically sensitive area. However, there are no historic sites listed for the Airport. Further, the MSGP states that it is the opinion of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), that the discharge of stormwater from industrial sites will have no impact upon cultural resources eligible for inclusion in the State and National Register of Historic Places.

4.0 STORMWATER DISCHARGES TO IMPAIRED WATERBODIES

Facilities that discharge stormwater to:

1) An impaired waterbody that is included in the New York State Section 303(d) List of Impaired / TMDL Waters; or

2) In a watershed for which a Total Maximum Daily Load (TMDL) has been developed, and the cause of the impairment is a pollutant of concern included in the benchmarks and / or effluent limitations to which the facility is subject to, must perform quarterly compliance monitoring and identify:

    - The impaired waterbody,
    - The pollutants of concern,
    - The potential for presence in stormwater, and
    - The associated stormwater controls.

Stormwater is conveyed from the Airport to Wappinger Creek. The creek is not listed as being impaired. Therefore, the requirement to perform quarterly compliance monitoring for discharges to impaired waterbodies is not applicable at this time.

5.0 ASSESSMENT OF POTENTIAL POLLUTANT SOURCES

This section is a potential pollutant source assessment which describes the drainage of the site, and materials and practices which could potentially impact stormwater discharged from the site. Historic spills and sampling data are described, when applicable. The following subheadings are contained within this section:

1) Site Drainage;
2) Industrial Activities and Materials Exposed to Stormwater;
3) Spills and Leaks; and
4) Sampling Data.

5.1 Site Drainage

An investigation of the facility's drainage area was performed to gather qualitative and quantitative information on the characteristics of the stormwater runoff. A stormwater outfall is defined as the point where stormwater enters a natural waterway or a separate storm sewer system, or otherwise exits the property.

The airport is approximately 640 acres in size, with impervious areas such as building roofs and concrete and asphalt pavement areas covering approximately 25% of the grounds. Based on the observations made during C&S' May 2018 site walkover and stormwater utility mapping, there are three drainage areas at the airport associated with industrial activity (see **Figure 3**).

The nearest receiving water to the facility is Wappinger Creek. Wappinger Creek southwest to the Hudson River in New Hamburg. Stormwater from the airport discharges to the creek through various swales and underground stormwater piping systems. Sanitary wastewater from the facility flows into various onsite septic systems.

According to the Dutchess County Soil and Water Conservation District website, the Town of Wappinger Falls is regulated by the Municipal Separate Storm Sewer System (MS4) Program.

The following describes the significant features of the drainage areas:

Drainage Area A

This area includes the eastern and southeastern portions of the airport, which include aircraft hangars, the County maintenance facility, the fuel farms, salt storage barn, and portions of runways and taxiways. Generally, stormwater from this area is conveyed by a closed system, which extends westward beyond the terminal to the southern side of New Hackensack Road, where it discharges to a small pond. The area is tributary to Outfall 001.

Drainage Area B

This area includes the area surrounding the terminal, and includes apron area, the deicing pad, and automobile parking areas. Stormwater from this area is conveyed by a closed system, which extends to the southern side of New Hackensack Road, where it discharges to a small pond.

Drainage Area C

This area includes the northern portion of the airport, including several aircraft hangars, apron, runway, and taxiway. Stormwater from this area is conveyed by a closed system, which discharges to a swale in a wooded area to the north of Jackson Road.

Table 5-1
Drainage Area Summary

Drainage Area	Contributing Area	Potential Industrial Sources	Direction of Flow Resulting from a Discharge	Total Area (acres)	Runoff Coefficient [1]	Discharge Point
A	Southern and eastern portion of the airport	Aircraft fueling, bulk fuel loading and unloading, aircraft and vehicle maintenance, salt handling, chemical tote handling (urea), AFFF testing	To proximate catch basins or swale	66.3	Medium to High	Outfall 001
B	Terminal Area	Aircraft fueling and deicing	South via catch basins to outfall	17.7	Medium to High	Outfall 002
C	Northern portion of airport	Aircraft fueling, aircraft maintenance, AFFF testing, GA hangar activities (see note)	North via catch basins to outfall	106.4	Medium to High	Outfall 003
NA	Runways	Runway deicing	To adjacent turf	NA	NA	Outfalls 001, 002, 003

1 High: 70-100% impervious (example: paved surfaces and buildings)
Medium: 40-70% impervious (example: packed soils or mixture of paved surfaces and buildings and grassy areas)
Low: 0-40% impervious (example: grassy areas)

2 GA Hangar activities are varied and may include the offloading, use, and storage of various aircraft maintenance fluids (e.g. lube oils, aviation gasoline, deicing fluids, etc.), aircraft maintenance, and generation of refuse or aircraft maintenance fluid wastes. Aircraft maintenance and storage / use of fluids is conducted indoors, but could impact stormwater under certain circumstances.

5.2 Industrial Activities and Materials Exposed to Stormwater

A description of exposed industrial sources and an identification of pollutants of concern that may be generated by on-site activities has been prepared to determine which areas, activities, or materials may contribute pollutants to stormwater runoff from the site. This information assists in the selection of the most appropriate practices to prevent or control pollutants from these areas.

Significant industrial materials, as defined in 40 CFR 122.26(B)(12), are substances related to industrial activities such as process chemicals, raw materials, fuels,

pesticides, and fertilizers, that when exposed to stormwater runoff may be carried to a receiving stream with the stormwater flow. Potential stormwater contaminants which are used, stored and / or transferred in areas exposed to stormwater include the following:

Table 5-2
Industrial Materials and Activities Potentially Exposed to Stormwater

Material / Activity [1]	Pollutants	Drainage Area(s)	Potential for Stormwater Impact [2]
Aircraft Fueling	Jet Fuel, Aviation Gasoline	A, B, C	Low – Refer to Section 6.15 for supporting documentation
Aircraft Deicing	Glycol	B	Low – Refer to Section 6.15 for supporting documentation
Aircraft / Vehicle Maintenance	Maintenance Fluids (motor oil, antifreeze, etc.)	A, C	Low – Refer to Section 6.15 for supporting documentation
Offloading / Handling of Oil / Chemical Drums / Totes	Virgin and Used Oils / Chemical s (e,g, motor oil, urea, antifreeze, etc.)	A, C	Low – Refer to Section 6.15 for supporting documentation.
Bulk Loading / Offloading of Fuel	Jet-A, Aviation Gasoline, Unleaded Gasoline, Diesel	A, B	Low – Refer to Section 6.15 for supporting documentation
Vehicle / Equipment Leaks	Vehicle Fuels and Lubricants	A, B, C	Low – Refer to Section 6.3
Salt Storage	Salinity	A	Low – Refer to Section 6.12 for supporting documentation.
Runway Deicing	Urea	NA	Low – Refer to Section 6.15 for supporting information

[1] The locations of activities exposed to stormwater are depicted on **Figure 4**.
[2] The areas identified in this table are formally inspected on a monthly basis and on an ongoing basis as personnel pass the areas during their day-to-day activities.

5.3 Spills and Leaks

The purpose of this section is to list significant spills and releases of toxic or hazardous materials that have occurred in the drainage areas tributary to facility stormwater system.

The EPA has defined "significant spills" to include releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act, and Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Spills and leaks that are not reportable but have adversely affected water quality must also be summarized in this Plan.

According to facility personnel, there have been no spills / leaks above reportable quantities or that have adversely affected water quality in at least the last three years. Spill record forms are maintained in the facility's SPCC Plan (separate document).

Predictions of the spill pathways and the pollutants that may be conveyed by the release of the potentially exposed industrial materials and / or activities are summarized in **Table 5-1** and **Table 5-2** above. Section 6.0 outlines the Best Management Practices implemented by the facility to prevent pollutants from entering the site stormwater as well as tributary waterbodies.

5.4 Sampling Data

Appendix B contains sampling data, chain of custody records, laboratory reports, quarterly visual monitoring reports, and annual certification reports, as applicable.

6.0 APPROPRIATE MEASURES AND CONTROLS

6.1 Best Management Practices (BMPs)

BMPs are measures used to prevent or mitigate pollution from activities that could result in the discharge of contaminants to stormwater. BMPs may include processes, procedures, schedule of activities, prohibitions on practices, and other management practices for the prevention or reduction of stormwater pollution. In general, BMPs could be any measure or control that results in preventing materials such as oil, and toxic and hazardous substances from entering the environment.

Baseline BMPs are practices which most facilities already have in place for use in product loss prevention, accident and fire prevention, worker health and safety, or to comply with other applicable environmental regulations.

The BMPs identified in the SWPPP must be maintained in effective operating condition. If the site inspections discussed in Section 7.0 below, identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable, but not more than 12 weeks after completion of the routine facility inspection or the comprehensive site evaluation, unless permission for a later date is granted in writing by the NYSDEC. In the case of nonstructural BMPs, the effectiveness of the BMP must be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

The following measures and controls are required by the MSGP or have been otherwise incorporated by the facility to protect stormwater and are discussed in the subsections below:

1. Develop and implement good housekeeping practices to keep exposed areas clean (exposed areas are those that are not protected from contact with rain, snow, snowmelt, and / or run-off);
2. Test, maintain, and repair industrial equipment and systems (e.g. Preventative Maintenance);
3. Minimize the potential for leaks, spills, and other releases and develop a response plan;
4. Perform regular inspections;
5. Provide training and education;
6. Eliminate unauthorized non-stormwater discharges;
7. Ensure that waste, garbage, and floatable debris are not discharged;
8. Minimize generation of dust and off-site tracking of materials;
9. Stabilize exposed areas through erosion and sediment control;
10. Divert, infiltrate, re-use, contain, and otherwise reduce stormwater runoff;
11. Enclose or cover salt piles;
12. Recordkeeping and internal reporting procedures; and
13. Security.

In addition, due to the nature of activities at the facility, site specific BMPs have also been developed for the following areas and activities as described in Section 6.15:

1. Oil Bulk Transfers (6.15.1);
2. Aboveground Storage Tanks and Containers (6.15.2);
3. Maintenance (6.15.3);
4. Aircraft Fueling (6.15.4); and
5. Aircraft and Runway Deicing (6.15.5)

The various measures, controls and BMPs are described in detail in the subsections below:

6.2 Good Housekeeping Practices

Good housekeeping practices offer a practical and cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. They also help to enhance safety and improve the overall work environment. An effective good housekeeping program not only benefits stormwater quality but makes the facility a clean, safe place for employees and clients. A clean and orderly work place reduces the possibility of accidental spills occurring from mishandling oils, chemicals, and equipment, and will in turn help to reduce safety hazards to personnel. Typical good housekeeping practices incorporated at the facility are shown below and discussed in later subsections.

- Tanks, drums, and totes storing oil and chemical products are located indoors and are provided secondary containment per applicable regulations.
- Oil storage tanks / containers are operated in accordance with applicable state and federal regulations as outlined in the facility's SPCC Plan.
- Tanks, drums, and containers containing oils or chemicals are stored away from traffic routes to prevent accidental spills.
- Spill control / cleanup kits are located in areas where spills and leaks can occur.
- Batteries and other significant materials are stored indoors.
- **Discharge of waste materials to floor drains, sinks, catch basins, etc. is prohibited (e.g. chemicals, automotive fluids, etc.).**
- SRE, airport passenger vehicles, and aircraft are washed and repaired indoors. **Washing and repair of equipment, vehicles, and aircraft on the property exterior is prohibited.**

- Runways, taxiways, aprons, ingress / egress areas, and other exterior surfaces are typically inspected daily and periodically swept and cleaned to remove sediment and other solid waste materials.

- Facility personnel are trained to collect and properly dispose of litter and garbage.

- Spills are cleaned immediately upon discovery utilizing dry cleanup methods.

6.3 Preventative Maintenance

Preventative maintenance involves the regular inspection, testing, and repair of equipment and operational systems. Maintenance programs are intended to ensure that structural control measures and industrial equipment are kept in good operating condition and to prevent or minimize leaks and other release of pollutants. Preventative maintenance programs help to prevent breakdowns and failures by adjustment, repair, or replacement of faulty equipment. Preventative maintenance completed at the facility specific to the protection of stormwater is discussed in the subsections below.

6.4 Spill Prevention and Response Procedures

The MSGP requires the facility to provide information and procedures in the Plan to enable a person reporting a discharge to relay vital information regarding the discharge. The information required to be documented and / or reported is summarized at the end of this section. The contacts that may need to be notified in the event of a discharge are shown under the front cover of this plan. Internal, local, state and federal spill reporting procedures are further described below.

INTERNAL DISCHARGE NOTIFICATION PROCEDURES

Oil and chemical spills must be reported to the Director of Aviation. The Director will determine the appropriate personnel or contractor to remediate the spill and will also contact regulatory agencies, as applicable. If unavailable, the person who has discovered, or the person who has knowledge of a spill, must immediately notify his / her supervisor, who should in turn contact a member of the Pollution Prevention Team.

LOCAL DISCHARGE NOTIFICATION PROCEDURES

- If a discharge poses a threat to personnel or public health, the local fire and police departments must be contacted by dialing 911.

- Per the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304 requirements, in the event of certain chemical releases the facility must notify the State Emergency Response Commission and the Local Emergency Planning Committee for any area affected by the release, and provide a detailed written

follow-up as soon as practical. The following types of chemicals in an amount greater than or equal to the minimum reportable quantity are required to be notified:

- Extremely Hazardous Substances (Emergency Planning and Notification, 40 CFR part 355)

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substances (Designation, Reportable Quantities, and Notification, 40 CFR part 302).

The full text of 40 CFR Parts 302 and 355 can be found at http://www.gpoaccess.gov/cfr/index.html.

STATE DISCHARGE NOTIFICATION PROCEDURES

As excerpted from 6 NYCRR Part 613-6:

"Subpart 613-6 Release Response and Corrective Action

613-6.1 General

A facility must, in response to a release from a tank system, comply with the requirements of 613-6. Note that, detailed response and remediation actions are described in 613-4.4 for aboveground storage tanks.

613-6.2 Initial Response

In response to a release from a tank system, a facility must immediately perform the following initial response actions:

(a) Identify and mitigate fire, explosion, and vapor hazards;
(b) Take immediate action to prevent any further release of petroleum; and
(c) Report the release to Department's Spill Hotline (518-457-7362) within two hours after discovery.

613-6.3 Initial Abatement Measures and Site Check

(a) Unless directed to do otherwise by the Department, the facility must perform the following abatement measures:

(1) Remove as much of the petroleum from the tank system as is necessary to prevent further release;
(2) Visually inspect any aboveground releases or exposed belowground releases and prevent further petroleum migration;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the excavation zone and entered into subsurface structures (such as sewers or basements);
(4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the facility must comply with applicable State and local requirements;
(5) Measure for the presence of a release where contamination is most likely to be present at the facility, unless the presence and source of the release have been confirmed in accordance with the site check required by sections 2.4(c)(2), 3.4(c)(2), or 4.4(c)(2) of this Part (6 NYCRR Part 613), *or the site assessment required by section 2.6(c) of this Part* (6 NYCRR Part 613). *In selecting sample types, sample locations, and measurement methods, the facility must consider the nature of the petroleum stored, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release; and*
(6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with section 6.5 of this Part (6 NYCRR Part 613).

(b) Within 20 days after release confirmation, a facility must submit:

(1) A report to the Department summarizing the initial abatement steps taken under subdivision (a) of this section; and
(2) Any resulting information or data."

Per 613-4.4(d)(1), spills that meet the following conditions are not reportable:

1. *"The quantity is known to be less than 5 gallons; and*
2. *The spill is contained and under the control of the spiller; and*
3. *The spill has not and will not reach the State's water or any land (A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable); and*
4. *The spill is cleaned up within 2 hours of discovery."*

Fire Code of New York State:

The Fire Code of New York State, specifically Chapter 20: Aviation Fuel Facilities and the Fire Code of NYS Chapter 57: Flammable and Combustible Liquids, contain spill reporting procedures applicable to the facility.

Per Chapter 11:

- The facility must notify the local fire department of any spill which is considered a hazard to people or property or which meets one or more of the following criteria:

- Any dimension of the spill is greater than 10 feet,
- The spill area is greater than 50 square feet, and / or
- The fuel flow is continuous in nature.

- The facility must perform an investigation and complete corrective actions for all spills requiring notification to the local fire department.

- Perform standard spill prevention activities per 1106.11. This portion of the Code is provided in **Appendix D**.

Per Chapter 57:

- A consistent or accidental loss of liquid, or other indication of a leak from a tank system, shall be reported immediately to the fire department, the code enforcement official and other authorities having jurisdiction.

In addition to the regulatory requirements of the Fire Code of New York State, the National Fire Protection Association (NFPA), specifically NFPA 407: Standard for Aircraft Fuel Servicing, offers guidance relative to the prevention of and response to spills. The guidance is located in Section 5.2 and Appendix A of that standard and is included in **Appendix D** of this Plan.

FEDERAL DISCHARGE NOTIFICATION PROCEDURES

1. The Discharge of Oil regulation at 40 CFR Part 110 (also referred to as the "sheen rule") defines a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines in quantities that may be harmful under the Clean Water Act (CWA) as that which:

   - Causes a sheen or discoloration on the surface of the water or adjoining shorelines;
   - Causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines; or
   - Violates an applicable water quality standard.

   A discharge meeting any of the above criteria triggers requirements to report to the National Response Center (NRC). The failure to report such a discharge may result in criminal sanctions under the CWA.

2. According to 40 CFR Part 112.4(a), whenever a facility has discharged more than 1,000-gallons of oil in a single discharge, or discharged more than 42 gallons of oil in each of two discharges occurring within any 12 month period, the EPA Regional Administrator must be notified within 60 days. Information to provide to the Regional Administrator is shown below. A discharge is generally defined as any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil.

DISCHARGE DOCUMENTATION

Documentation should be prepared immediately after appropriate individuals have taken control of the release. In addition, any incident requiring corrective actions (as described in Section 7.7) must be documented on the form. The form is included in the facility's SPCC Plan (separate document). The form provides a record of the events leading up to the spill and subsequent actions. That documentation will be used to help prevent future spills and document the circumstances in which the spill occurred. The form should be completed for reportable spills and for spills that would otherwise be reportable except that they meet certain exemption criteria as described above.

6.5 Inspections

Inspections are important for visually evaluating potential stormwater pollution sources at the facility. Types of inspections required by the MSGP and applicable to the facility include monthly routine facility inspections, quarterly visual inspections, annual dry weather flow monitoring, annual site compliance evaluation, and annual certification reporting. Refer to Section 7.0 for detailed descriptions of these inspections.

6.6 Employee Education and Training

Employee training is necessary to provide personnel at the facility with a basic knowledge of the SWPPP so that it can be effectively implemented. The training program should be designed to teach all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of the pollution prevention team. When properly trained, facility personnel are more capable of preventing spills, responding safely and effectively to a spill, if and when one occurs and recognizing situations that could potentially lead to contamination of stormwater. By providing frequent and proper training of BMP techniques for employees, the possibility of oil / chemical and equipment mishandling is reduced.

The following personnel must be trained to understand the requirements of the MSGP and their specific responsibilities with respect to those requirements:

- Personnel who are responsible for the design, installation, maintenance, and / or repair of control measures;
- Personnel responsible for the storage and handling of chemicals and materials that could become contaminants found in stormwater discharges;
- Personnel who are responsible for conducting and documenting monitoring and inspections; and,
- Personnel who are responsible for taking and documenting corrective actions.

At a minimum the training session / sessions are required to cover:

- An overview of what is in the SWPPP and the purpose of the SWPPP;
- Spill response procedures, good housekeeping, maintenance requirements and material management practices;
- How to recognize unauthorized discharges;
- The location of all controls on the site required by this permit, and how to evaluate their condition and maintenance needs;
- The proper procedures to follow with respect to permit's pollution prevention requirements, including sampling and reporting; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

Training is conducted on an annual basis and whenever a new employee becomes involved in the implementation of the SWPPP. A SWPPP Training Record Form is provided in **Appendix A** to document training.

6.7 Elimination of Unauthorized Non-Stormwater Discharges

As of the date of this Plan, there are no known unauthorized non-stormwater discharges. In support of this, a Non-Stormwater Discharge Certification is provided on *page ii* of this Plan.

6.8 Waste, Garbage, and Floatable Debris

Due to the nature of the facility as an airport; waste, garbage, and debris control is a high priority to ensure the safe operation of aircraft. The following BMPs are implemented to ensure that waste, garbage, and floatable debris are not discharged:

- Waste containers (i.e. dumpsters) are covered and maintained in good condition to prevent infiltration of stormwater.

- The areas surrounding dumpsters are inspected and swept on an as-needed basis.

- Waste is removed and disposed of regularly.

6.9 Dust Generation and Off-Site Tracking of Materials

The exterior of the facility is entirely concrete / asphalt pavement or turf, therefore generation and tracking of dust is not believed to be a concern. In addition, due to the nature of the facility as an airport, dust control is a high priority to ensure the safe operation of aircraft.

6.10 Erosion and Sediment Control

The facility must stabilize exposed areas and control runoff using structural and / or non-structural control measures to minimize onsite erosion and sedimentation. Erosion and sediment controls must be in accordance with current New York State Standards & Specification for Erosion & Sediment Control. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the owner or operator must demonstrate equivalence to the technical standard.

Based on the topography of the site, lack of disturbed areas, and cover types present; erosion and sediment control is not believed to be an issue at the facility under normal conditions.

6.11 Reduction and Management of Stormwater Runoff

The MSGP requires that facilities divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff to minimize pollutants in discharges. The measures that are implemented by the facility include:

- Catch Basins – Catch basins provide a means of removing particulate matter and sediment from the stormwater. Catch basins and areas surrounding any other erosion control devices are inspected regularly and cleaned as needed by removing sediment, small solid materials, and other obstruction materials. Significant materials are stored away from the catch basins and periodic cleaning of the outside grounds take places to remove miscellaneous debris. The MSGP requires that catch basins be cleaned when the depth of debris reaches two-thirds of the sump depth and the debris surface must be kept at least six inches below the lowest outlet pipe.

- Pervious Cover – Pervious cover such as turf, vegetation, and stone naturally filter sediment and other pollutants from stormwater as well as reducing overland flow rates. Pervious areas at the facility represent approximately 75% of the grounds.

6.12 Enclose or Cover Salt Piles

Bulk salt is stored in an enclosed building protected from precipitation.

6.13 Recordkeeping and Internal Reporting Procedures

Keeping records of stormwater related events that occur at the facility is an effective way of tracking progress of pollution prevention efforts. For example, analyzing past spill records can provide information that is useful for improving BMPs at the facility to help prevent future occurrences of spills. Recordkeeping and internal reporting are good operating practices which help to increase efficiency of facility operations and the effectiveness of BMPs. A recordkeeping system, such as a spill database, should be set

up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. It is important to track reportable incidents and to follow up on results of inspections.

Records will include the following basic information:

- Documentation of Spill Records: If a spill of a petroleum or chemical substance occurs at the facility, the release will be recorded. Review forms annually to evaluate incidents and make decisions on how to improve facility BMP procedures to avoid future spill occurrences. Spill Report Forms are maintained in the facility's SPCC Plan.

- Documentation of Inspections: The recordkeeping requirements for various inspections required by the SWPPP are summarized in **Table 7-2**.

- Additional Documentation**:** Records documenting SWPPP Training are maintained with this Plan.

6.14 Security

There is chain-linked fencing around the facility, which limits points of access from the perimeter. In addition, each fence and building entrance is locked allowing only those who have an authorized swipe card to enter.

6.15 Site Specific Best Management Practices:

The following details the site specific BMPs implemented at the facility:

6.15.1 Oil Bulk Transfers

Oil products are stored in an aggregate amount greater than the federal Oil Pollution Prevention Rule (40 CFR Part 112) threshold; therefore, a SPCC Plan (separate document) has been prepared for the facility. The Plan addresses the proper storage, use, and transfer of oils. The storage, use, and transfer of oils at the airport are presumed to be conducted in general accordance with the SPCC Plan. Oils products transferred at the facility in bulk include jet fuel, aviation gasoline, unleaded gasoline, and diesel. The following BMPs are instituted regarding the transfer of these products:

- Oil tanks are operated in accordance with the USEPA SPCC and / or NYSDEC PBS Rules, which includes, but is not limited to the following BMPs:

- Offloading of jet fuel at the respective fuel farm is completed within a contained transfer area. Drainage from the area is controlled with a manually operated valve, which is placed in the closed position during transfers.

- Offloading of aviation gasoline, diesel, and auto gasoline at the respective fuel farm is completed on a pervious surface surrounded by turf.

- Drums are unloaded from transport vehicles and moved within the facility by personnel trained in SPCC requirements.

- Spill cleanup materials (i.e. spill kit) are readily available and spills and leaks are cleaned up immediately. If a spill occurs, dry cleanup methods are used rather than hosing down the area.

- Trained facility personnel oversee the transfers.

6.15.2 Aboveground Storage Tanks and Containers

The facility maintains a number of oil ASTs as described in the facility SPCC Plan. The following BMPs are instituted in regards to the storage of the products:

- Tanks / containers are inspected and monitored per state and federal regulations to detect potential leaks before they occur. Inspections include verification of the condition of the tanks, piping, pumps, flanges, couplings, hoses, valves, etc.

- Operators are trained at least annually on the proper maintenance and operation of the tank systems.

- The ASTs are either constructed with double-walls or located in secondary containment structures.

- Oil tanks are equipped with one or more overfill protection measures including electronic alarms, level gauges, and / or personnel oversight.

- Drums are stored away from traffic routes.

- Drums are clearly labeled to identify their contents and hazards.

- Petroleum and chemical drums are stored on impervious flooring within the facility or otherwise contained.

6.15.3 Maintenance

FBO or facility personnel perform aircraft, vehicle, and equipment maintenance activities which include the utilization of various oils and chemicals, including engine oil, hydraulic fluid, windshield washer fluid, antifreeze, gear oil, etc. The

following BMPs are instituted to ensure that these oils and chemicals do not impact stormwater:

- Maintenance activities are completed indoors. Vehicles awaiting maintenance are stored indoors, when feasible.
- Vehicles are washed indoors. **Washing, rinsing, spraying-down, etc. of vehicles and equipment, including parts and components on the property exterior is strictly prohibited.**
- Drip pans or drain boards are used to contain leaks.
- Spill cleanup materials are readily available and spills and leaks are cleaned up immediately.
- Incoming and outgoing vehicles / equipment are inspected for leaks. Significant leaks are repaired before going back into service.
- Tanks and containers are properly labeled, clean and visible. Containers are kept in good condition and tightly closed when not in use.
- Batteries, chemical fluids, supplies, and other significant materials are stored indoors pending off-site disposal. When feasible, these items are recycled.
- Fluids are drained completely from parts and equipment before disposal or if they are to be stored outdoors. Liquids are drained from out-of-service vehicles / equipment when leaks are present.

6.15.4 Aircraft Fueling

Aircraft may be fueled in the following locations:

1. At the terminal apron. Incidental fuel releases will likely be contained on the apron.
2. At the AAG hangar apron where fueling of helicopters is conducted by the FBO. Aircraft is fueled by mobile refueler vehicles. Incidental fuel releases will likely be contained on the apron.
3. At the general aviation hangars where fueling of small, privately owned, non-commercial aircraft is conducted by the FBO. Aircraft is fueled by mobile refueler vehicles. Incidental fuel releases will likely be contained on the apron.

The following additional BMPs are instituted relative to these practices:

- Spill cleanup materials (i.e. spill kit) are readily available and spills and leaks are cleaned up immediately.
- If a spill occurs, dry cleanup methods are used rather than hosing down the area.
- Trained FBO oversee the transfers.

6.15.5 Aircraft and Runway Deicing / Anti-Icing

The Airport uses deicing chemicals during winter months to provide for anti-icing and de-icing of aircraft and surfaces. Aircraft is de-iced utilizing a mobile dispensing unit containing a 55% propylene glycol solution. If runway de-icing or anti-icing is required, pelletized urea is utilized, which is applied with a truck mounted spreader. On average, less than 300 gallons of glycol and less than 20 tons of urea are utilized annually.

The Federal Aviation Administration (FAA) established safety requirements for airport movement surfaces including runways and taxiways. FAA has developed guidance documents entitled "Advisory Circulars" (AC) which provide airport operators with the means and methods to ensure safe passenger travel during wintertime conditions. Airport deicing / anti-icing removes or prevents the accumulation of frost, snow, or ice on aircraft, runways, taxiways, aprons, and ramps. Combinations of mechanical methods and / or chemical deicing / anti-icing are used.

"De-icing" is defined as a procedure by which frost, ice, or snow is removed in order to provide clean surfaces.

"Anti-icing" is defined as a precautionary procedure that provides protection against the formation of frost or ice and accumulation of snow on treated surfaces for a limited period of time.

Aircraft De-icing / Anti-icing

Aircraft de-icing / anti-icing procedures vary depending primarily on aircraft type, type of ice accumulations on the aircraft, and the FPD fluid type. The aircraft chemicals are applied to aircraft using a mobile dispensing unit. Concentrated aircraft deicing agent is mixed with water to produce a solution consisting of 55% deicing agent (presently propylene glycol). Propylene glycol anti-icing agents are applied in concentrated form and are used to anti-ice aircraft.

Runway Pavement De-icing / Anti-icing

The airport has a collection of SRE including plows, brushes, and blowers. Under certain conditions, mechanical methods alone will not adequately provide safe operating conditions. In these cases, airport personnel will utilize chemical deicing / anti-icing in conjunction with mechanical methods to provide safe operating conditions.

Pavement anti-icing is a method for maintaining safe operation conditions at the airport. Anti-icing can prevent the development of strong bonds from forming between the pavement and ice, which enables snow and ice to be more easily removed by mechanical means. The proper application of anti-icing chemicals can dramatically reduce the amount of pavement deicing and / or anti-icing chemicals used by the airport. According to some reports, airport deicing can take up to five times the quantity of chemical as anti-icing. The timing of the application of pavement anti-icing chemicals is critical. In order for anti-icing agents to be most effective they should be applied to a clean pavement and while the surface temperature is above freezing. The airport utilizes weather forecasts in effort to accurately predict runway surface conditions in order to determine the appropriate timing of anti-icing chemical application.

Good Winter Maintenance Practices

Airport personnel utilize the following winter maintenance practices to prevent unnecessary or over-application of pavement deicing / anti-icing chemicals:

- Prompt treating of airfield pavements using mechanical methods or anti-icing chemicals to prevent strong bonds from forming between the frozen precipitation and the pavement surface;

- Using mechanical methods to remove dry snow from airfield pavements, rather than applying deicing / anti-icing chemicals;

- Applying pavement anti-icing chemicals prior to a storm event or icing conditions, when weather forecasts indicate that ice or snow will bond to pavement surfaces.

7.0 INSPECTIONS

Inspections are important for visually evaluating potential stormwater pollution sources at the facility. The inspections required by the MSGP and applicable to the facility include:

- Routine Facility Inspections;
- Visual Monitoring;
- Dry Weather Flow Monitoring;
- Site Compliance Evaluation; and
- Certification Reporting.

The types of monitoring, inspections, and recordkeeping requirements, as well as submittal deadlines are summarized in **Table 7-1**, below.

Please note that failure to complete the required inspections and monitoring because timing is inconvenient (e.g. outside of normal operating hours, after dark, etc.), is not deemed by the NYSDEC to be acceptable and may be considered a violation of the MSGP.

Table 7-1
Summary of Required Monitoring, Recordkeeping and Deadlines

Requirement	Frequency	Recordkeeping Requirement	Submittal Deadline
Secondary Containment Discharge Screening	Every Discharge	Retain documentation with SWPPP	NA
Routine Facility Inspections	Monthly	Retain documentation with SWPPP	NA
Visual Monitoring	Quarterly	Retain documentation with SWPPP	NA
Dry Weather Flow Monitoring	Annually	Retain documentation with SWPPP	NA
Site Compliance Evaluation		Retain documentation with SWPPP	NA
Certification Report (ACR)		Submit a copy to the DEC	January 28th Annually

7.1 Secondary Containment Discharge Screening

7.1.1 General

Prior to each discharge from a secondary containment system (e.g. the containment systems for the Jet-A fuel farm transfer area, mobile refueler loading area, and diesel / auto gasoline tanks), stormwater must be visually screened for contamination. If the screening indicates contamination, the permittee must collect and analyze a representative sample of the stormwater to verify the absence or presence of contamination. If the water contains no pollutants, it may be discharged. Otherwise it must either be disposed of in an onsite or offsite wastewater treatment plant designed to treat and permitted to discharge such wastewater, or the NYSDEC Regional Water Engineer can be contacted to determine if it may be discharged without treatment.

The Secondary Containment Discharge Screening Form provided in **Appendix B** can be used to document the screening method, results of the screening, date and time, volume of the discharge (gallons), and personnel involved.

7.1.2 Special Conditions for Secondary Containment Where Spills Have Occurred

All spilled or leaked substances must be removed from secondary containment systems as soon as practical, unless authorization to do otherwise is received from the NYSDEC. The containment system must be thoroughly cleaned to remove any residual contamination which could cause contamination of stormwater and the resulting discharge of pollutants to the waters of the State. Following spill cleanup the affected area must be flushed with clean water three times and the water removed after each flushing for proper treatment in an onsite or offsite wastewater treatment plant designed to treat and permitted to discharge such wastewater. Alternatively, the first batch of stormwater following the spill cleanup may be sampled and analyzed to determine discharge acceptability.

A representative sample will be collected of the first discharge following any cleaned up spill or leak within the containment. The sample must be analyzed for pH, the substance(s) stored within the containment area and any other pollutants known or believed to be present. All analysis must be performed by a New York State certified Environmental Laboratory Accreditation Program (ELAP) laboratory. The results of the monitoring must be maintained with the SWPPP.

7.2 Routine Monthly Facility Inspections

Routine facility inspections are meant to act as a regular examination of the facility in an effort to identify conditions which could result in contamination of stormwater runoff. The routine facility inspections are conducted monthly to:

- Evaluate conditions and maintenance needs of stormwater management devices (e.g. cleaning oil/water separators, catch basins) to avoid situations that may result in the practice becoming a source of pollutants.
- Detect leaks and ensure the good condition of drums, tanks, and containers.
- Evaluate the performance of the existing stormwater BMPs described in the SWPPP.

The USEPA recommends that the inspections be completed during or immediately following a measureable rain event and during normal business hours. Observing site conditions during storm events provides real-time feedback on control measures that are working and those that are not working effectively.

The Routine Facility Inspection Checklist provided in **Appendix A** is recommended to be used as a guideline for items to be examined. Inspection records document when inspections were performed, who conducted the inspection, which areas were inspected, issues that were identified, and steps taken to correct the identified issues (including personnel notified). Inspection records are kept on file with this Plan. The MSGP requirements indicate that records must be kept on file until at least five years after coverage of the facility under the permit expires.

7.3 Quarterly Visual Monitoring

The MSGP requires quarterly visual examination of stormwater discharges associated with industrial activity. No analytical tests are required to be performed on the collected stormwater samples for the purpose of meeting the visual monitoring requirements. However, the examination must document observations of color, odor, clarity, floating solids, suspended solids, foam, oil sheen, and any other obvious indicators of stormwater pollution. The visual examination must be made during daylight hours and conducted in a well-lit area. Where practicable, the same individual should carry out the collection and examination of discharges for the entire permit term for consistency.

The inspections must be made at least once in each of the following three-month periods and at each of the industrial outfalls:

- January through March;
- April through June;
- July through September; and
- October through December.

The samples must be collected from a discharge resulting from a storm event that is greater than 0.1 inches and occurs at least 72 hours from the previous measurable storm event. The grab sample must be taken in the first 30 minutes (or as soon as practical, not to exceed an hour) of the discharge. If there is no qualifying storm event in the monitoring quarter, the facility would be exempt from this monitoring requirement for that quarter. However, the lack of a qualifying event must be documented and retained with the SWPPP.

If the visual examination indicates the presence of stormwater pollution such as color, odor, floating solids, foam, oil sheen or other indication of pollution, the facility must, at a minimum, complete and document corrective actions as outlined in Section 7.7.

The visual examination must be documented and maintained on-site with the SWPPP. Inspection records will document the outfall location, the examination date and time, the examination personnel, the nature of the discharge (e.g. rain or snow), the visual quality of the stormwater, probable sources of any observed stormwater contamination, and actions taken or proposed to eliminate the sources. The Quarterly Visual Monitoring Form can be downloaded from the NYSDEC website at http://www.dec.ny.gov/chemical/9009.html.

7.4 Annual Dry Weather Flow Monitoring Inspection

The facility must perform and document at least one dry weather flow inspection each year following at least three consecutive days of no precipitation. The dry weather flow inspection shall be conducted to determine the presence of non-stormwater discharges from the industrial drainage areas of the property through the various stormwater piping systems. The inspection report must include the outfall locations, the inspection date and time, inspection personnel, description of discharges identified, the sources of any discharges and actions taken to address any newly identified allowable non-stormwater discharges or elimination of non-authorized discharges.

If a non-stormwater discharge is discovered, the facility must perform corrective actions as described in Section 7.7.

Results of the dry weather flow inspections must be documented and retained on-site with the SWPPP. A copy of the Annual Dry Weather Flow Monitoring Inspection sheet is included in **Appendix A**.

7.5 Benchmark Monitoring / Annual Certification Report

Airports that use more than 100,000 gallons of glycol-based deicing / anti-icing chemicals and / or 100 tons or more of urea on an average annual basis are required to sample their stormwater discharges. Based on the information provided, the airport uses a negligible amount of propylene glycol and urea annually. Therefore, benchmark monitoring is not required at this time.

However, the airport must complete an Annual Certification Report (ACR) on an annual basis. ACRs must be completed and returned to the NYSDEC by January 28th, annually. The Annual Site Compliance Evaluation discussed in Section 7.6, below is not the same as the ACR. The ACR can be downloaded from the NYSDEC website at http://www.dec.ny.gov/chemical/9009.html.

Prior to December 20, 2020, Annual Certification Reports can be mailed to:

MSGP Permit Coordinator
NYSDEC, Bureau of Water Compliance
625 Broadway
Albany, New York 12233-3506

Subsequent to December 20, 2020, ACRs must be submitted electronically via the NYS online portal (http://www.dec.ny.gov/pubs/95925.html).

7.6 Annual Site Compliance Evaluation

The facility is required to conduct an Annual Site Compliance Evaluation no less than one time a year. The inspection must be done by qualified personnel who may be either facility employees or outside consultants and the inspection must be conducted during actual periods of deicing activities or when deicing is likely to occur. The inspectors must be familiar with the industrial activity, the BMPs, the SWPPP, and must possess the skills to assess conditions at the facility that could impact stormwater quality and assess the effectiveness of the BMPs that have been chosen to control the quality of the stormwater discharges.

Inspections must include all areas where industrial activities are exposed to stormwater, and areas where spills and leaks have occurred in the past three years. Inspectors should look for, at a minimum:

- Industrial materials, residue or trash on the ground that could contaminate or be washed away in stormwater;
- Leaks or spills from industrial equipment, drums, barrels, tanks or similar containers;
- Unauthorized non-stormwater discharges or allowable non-stormwater discharges that are not certified by the general permit;
- Off-site tracking of industrial materials or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas; and
- Evidence of, or the potential for, pollutants entering the drainageway.

- Inspection of areas found to be the source of pollutants observed during visual and analytical monitoring done during the year.

- Stormwater BMPs identified in the SWPPP must be observed to ensure that they are operating correctly.

- If discharge locations or points are accessible, they must be inspected to see whether BMPs are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected.

Results of visual and analytical monitoring done during the year must be taken into consideration during the evaluation. Stormwater BMPs identified in the SWPPP must be observed to ensure that they are operating correctly (if applicable). Where discharge locations or points are accessible, they must be inspected to see whether BMPs are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected, if possible. Based on the results of the inspection, the SWPPP shall be modified as necessary.

An Annual Site Compliance Report must be made and retained as part of the SWPPP for at least five years from the date permit coverage expires of is terminated. At a minimum, the report must include:

- The scope of the inspection;

- The names of the personnel making the inspection;

- The weather at the time of the inspection;

- The date(s) of the inspection;

- Major observations relating to the implementation of the SWPPP, including:
    - The locations of discharges of pollutants from the site;
    - The locations of previously unidentified discharges of pollutants from the site;
    - Locations of BMPs that need to be maintained;
    - Location of BMPs that failed to operate as designed or proved inadequate for a particular location;
    - Locations where additional BMPs are needed that did not exist at the time of the inspection;
    - Any incidents of non-compliance; and
    - A summary of sample analysis.

The report must identify any incidents of non-compliance and required corrective action, as described in Section 7.7. Where a report does not identify any incidents of noncompliance, the report must contain a certification that the facility is in compliance

with the SWPPP and the MSGP. An Annual Site Compliance Evaluation form is included in **Appendix A**.

7.7 Corrective Actions

Failure to document and take necessary corrective action is a violation of the permit. Continued exceedance of benchmark cut-off concentrations and / or numeric effluent limitations may identify facilities that would be more appropriately covered under an individual SPDES permit. If there is an exceedance of either a benchmark or numeric effluent limit at an outfall where a representative outfall waiver has been claimed, the waiver no longer applies and corrective actions must be performed on all outfalls covered by the waiver.

Corrective action requirements differ and are based on requirement for stormwater discharges and non-stormwater discharges.

Stormwater Discharge Corrective Actions:

When a visual examination indicates the presence of pollution or when the benchmark or numeric effluent limit sample results indicate exceedances of the pollutants, the owner or operator must:

- Inspect the facility for potential sources of stormwater contamination and / or causes of the exceedance to numeric limits;
- Implement additional non-structural and / or structural BMPs to address any sources of contamination that are identified to prevent recurrence within the following timeframes:
    - The implementation must be completed before the next anticipated storm event, if practicable, but not more than 12 weeks after discovery.
    - If implementation will take longer than 12 weeks, the owner or operator must submit a proposed schedule for completion of the project and obtain a written approval from the Regional Water Engineer.

- Revise the facility's SWPPP; and

- Continue efforts to implement additional BMPs at the facility if corrective actions do not result in achieving benchmark monitoring cut-off concentrations and/or numeric effluent limitation.

Non-Stormwater Discharge Corrective Actions:

If a non-stormwater discharge is discovered the owner or operator must:

- Identify its source and determine whether it is an authorized discharge.
    - Upon determination that the discharge is not covered under this permit or another SPDES permit, the owner or operator shall notify the Regional Water Engineer of the unauthorized discharge and begin immediate

actions to eliminate the discharge. These actions must be documented in the SWPPP.

- Upon determination that the discharge is an authorized non-stormwater discharge that was not previously certified, the owner or operator shall update the discharge certification and keep with the SWPPP.

Corrective Action Documentation:

Owners or operators must document the existence of any of the conditions listed in Parts V.A or V.B within 24 hours of becoming aware of such condition. Unless required by Part VI.A.2.b or as requested by the Department, the corrective action documentation is not required to be submitted and should be kept with the facility's SWPPP. Include the following information in your documentation:

- A description of the condition triggering the need for corrective actions. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of the state, through stormwater or otherwise;
- Date the condition was identified;
- The date when each corrective action was initiated and completed (or is expected to be completed);
- A description of the corrective actions to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any control measures taken to prevent the reoccurrence of such releases; and
- A statement, signed and certified.

7.8 Monitoring Waivers

Unless specifically stated otherwise by the NYSDEC, the following waivers may be applied to any monitoring required by the MSGP:

7.8.1 Adverse Climatic Conditions Waiver

When adverse weather conditions prevent the collection of samples, a substitute sample may be taken during a qualifying storm event in the next monitoring period. This waiver may only be claimed if the only qualifying event in a monitoring period created dangerous conditions for personnel, created conditions which made the sample location inaccessible or made collection of a sample impossible. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, and may include such things as local flooding, high winds, electrical storms, or situations that otherwise make sampling impracticable, such as drought or extended frozen conditions.

This waiver may not be claimed to indicate that samples were not collected due to inconvenient timing of storms or other failure to collect water samples.

7.8.2 Inactive and Unstaffed Sites

An annual comprehensive site inspection is not required at a facility that is inactive and unstaffed for an entire monitoring period and if no industrial materials or activities are exposed to stormwater for the entire monitoring period. If this waiver is exercised, the facility must:

a. Maintain a certification with the SWPPP stating the dates the site is inactive and unstaffed and that performing visual examinations or benchmark and compliance monitoring during a qualifying storm event is not feasible.

b. A dry weather flow inspection must be performed prior to shut down, recorded and maintained in the SWPPP. The certification must include the results of the dry weather flow inspection performed prior to shut down.

c. The certification must be signed in accordance with Part V.H. of the MSGP, and submitted to the Department with the annual certification report and DMR.

7.8.3 Representative Outfalls

The facility has three outfalls associated with industrial activity. However, based on the variation of activities taking place in the drainage areas, the representative outfall waiver will not be utilized.

8.0 SCHEDULE OF IMPLEMENTATION

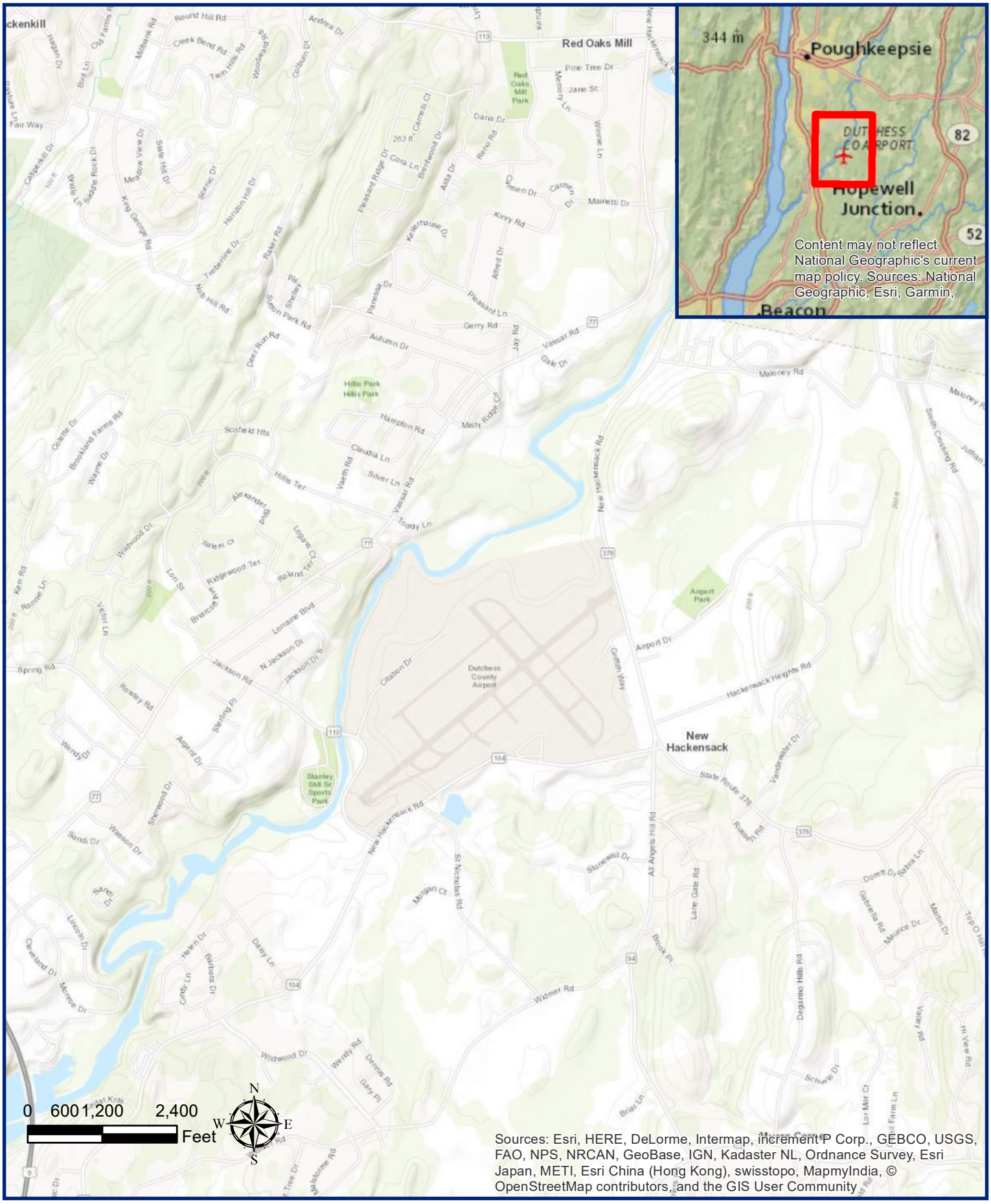
The following Schedule of Implementation is a summary of key action items described in this Plan. The following items must be performed and / or addressed in order to comply with the MSGP.

Table 8-1
Schedule of Implementation

Task	Plan Section	Monthly	Quarterly	Annually	As Needed
Plan Review / Update [3]	Page iii			X	X
Spill Recording [2]	6.4				X
Personnel Training [1]	6.6			X	X
Secondary Containment Discharge Screening [1]	7.1				X
Routine Facility Inspections [1]	7.2	X			
Visual Inspections [4]	7.3		X		
Dry Weather Flow Monitoring [1]	7.4			X	
Annual Certification Report [4]	7.5			X	
Site Compliance Evaluation [1]	7.6			X	

[1] Documentation forms for these tasks are located in **Appendix A**.
[2] A documentation form for this task is located in the facility's SPCC Plan.
[3] A documentation form for this task is located on *page iii*.
[4] Documentation forms are available on the NYSDEC website.

FIGURES



C&S COMPANIES®

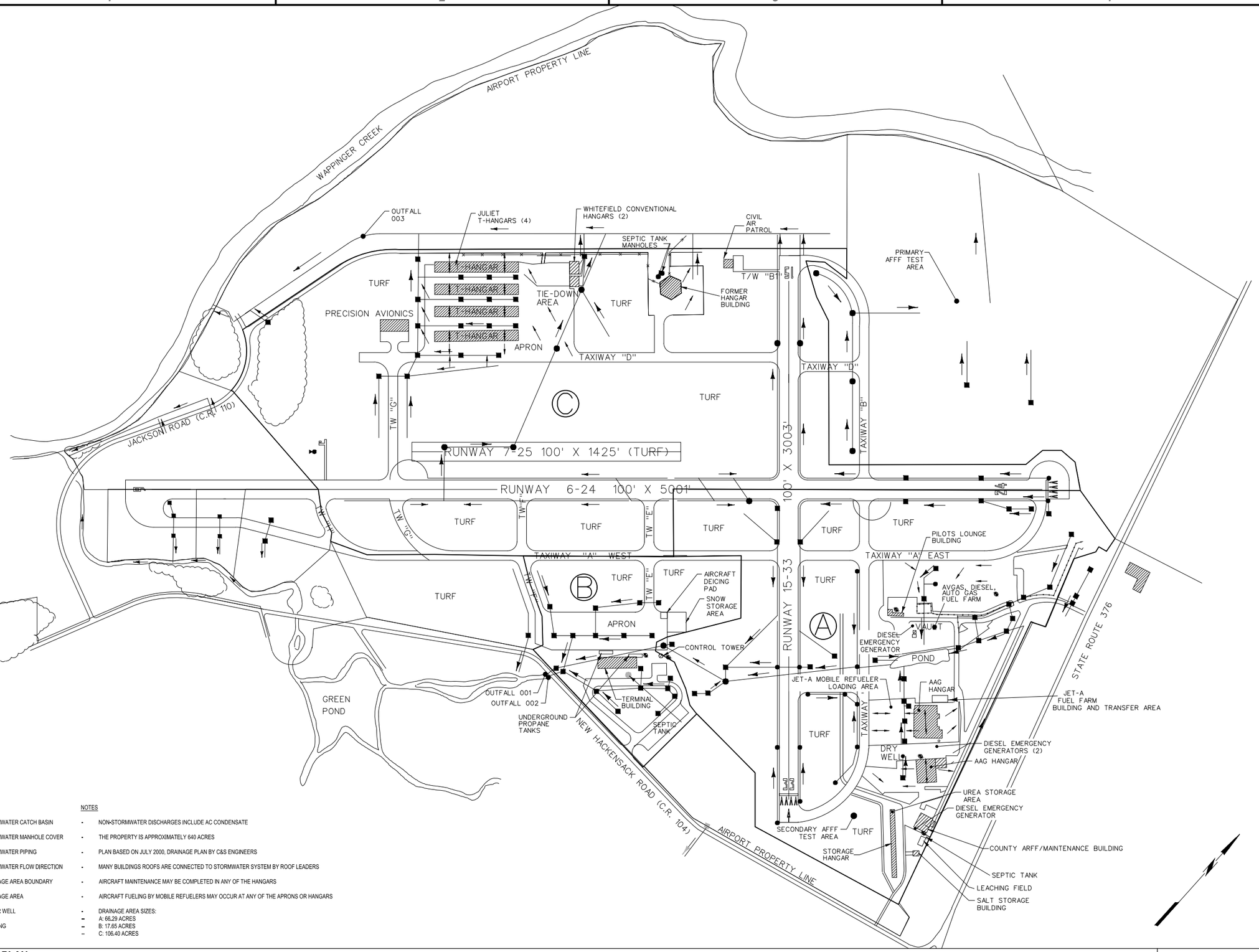
Sormwater Pollution Prevention Plan (SWPPP)
Hudson Valley Airport
263 New Hackensack Road
Wappingers Falls, NY 12590

Figure 1

C&S COMPANIES®

Sormwater Pollution Prevention Plan (SWPPP)
Hudson Valley Airport
263 New Hackensack Road
Wappingers Falls, NY 12590

Figure 2



LEGEND

- STORMWATER CATCH BASIN
- STORMWATER MANHOLE COVER
- STORMWATER PIPING
- STORMWATER FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA
- WATER WELL
- BUILDING

NOTES

- NON-STORMWATER DISCHARGES INCLUDE AC CONDENSATE
- THE PROPERTY IS APPROXIMATELY 640 ACRES
- PLAN BASED ON JULY 2000, DRAINAGE PLAN BY C&S ENGINEERS
- MANY BUILDINGS ROOFS ARE CONNECTED TO STORMWATER SYSTEM BY ROOF LEADERS
- AIRCRAFT MAINTENANCE MAY BE COMPLETED IN ANY OF THE HANGARS
- AIRCRAFT FUELING BY MOBILE REFUELERS MAY OCCUR AT ANY OF THE APRONS OR HANGARS
- DRAINAGE AREA SIZES:
  - A: 66.29 ACRES
  - B: 17.65 ACRES
  - C: 106.40 ACRES

A1 **SITE PLAN**
SCALE: 11x17 1" = 500'-0" 22x34 1"=250'-0"

0 250' 500'

C&S COMPANIES
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
HUDSON VALLEY AIRPORT
263 NEW HACKENSACK ROAD
WAPPINGERS FALLS, NY 12590

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	128.325.001
DATE:	MAY 2018
DRAWN BY:	JCT
DESIGNED BY:	JCT
CHECKED BY:	MDH

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

SWPPP SITE PLAN

FIGURE 3

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May 22, 2018 – 8:48am
F:\Project\128 – DUTCHESS COUNTY\128325001 – Hudson Valley Airport Industrial SWPPP\Planning–Study\CADD\Hudson Valley Drainage 2018.dwg

APPENDIX A

Inspection Checklists & Forms

Routine Facility Inspection Checklist

Routine Facility Inspection Checklist
Hudson Valley Regional Airport

Inspector:

Date:

Time:

Inspection Item	Yes	No	NA	Comments
Property Exterior				
1a. Are there totes, drums, or other containers storing chemicals or oils outdoors?				
1b. Are they in poor condition, leaking, uncovered, or uncontained?				
1c . Are any empty drums corroded or otherwise soiled?				
2. Is there evidence of spills in areas where aircraft are fueled?				
3. Is there evidence of spills in the bulk fuel loading / offloading areas?				
4. Is there evidence of solids such as sediment, stones, wood, metal, or trash on the property exterior?				
5. Is there evidence of solids such as sediment, stones, wood, metal, or trash within the stormwater catch basins or outfalls?				
6. Is there stressed or dead vegetation in the vicinity of the deicing pad / snow storage area?				
7. Is there evidence of glycol de-icing outside of the dedicated area?				
8. Is salt being improperly stored or accumulated outside of the barn?				
9a. Are there dumpsters that are uncovered or in poor condition?				
9b. Do the covers need to be adjusted or repaired?				
10. Are there areas of erosion that require corrective actions?				
11. Are there any other areas of concern that could potentially impact the storm water quality in the area?				
12. Are BMPs ineffective or not functioning as designed?				
13. Are there any spill response kits missing absorbents, booms, protective equipment, etc?				

Inspection Item	Yes	No	NA	Comments
Interior				
14. Are there oil or chemical products stored near overhead doors or mandoors that have the potential to escape the building?				
15. Are oil, chemical, or paint containers improperly stored, leaking, or being handled improperly?				
16. Have maintenance activities caused or have the potential to impact stormwater?				
17. Are there any other areas of concern that could potentially impact stormwater quality?				
18. Are any of the spill response kits missing absorbents, booms, protective equipment, etc?				

Notes:

All "YES" responses are indicative of an actual or suspected source of stormwater contamination. The Director of Aviation should be notified of all YES responses. In addition, all YES responses must be followed up with an attempt to identify the source and steps to prevent a reoccurance.

Item 1: It is Airport policy that totes, drums, and containers containing oils or chemicals be stored indoors and never outdoors. If this condition is observed, notify your supervisor. The item should be corrected as necessary and safely moved indoors.

Items 4 / 5: The exterior grounds and catch basins must be cleaned periodically to prevent runoff of TSS and contaminant laden stormwater.

Item 5: The MSGP reqires that catch basins be cleaned when or before the sump reaches 2/3 capacity.

Item 9: The MSGP requires that dumpsters be covered or contained.

Inspection Item	Yes	No	NA	Comments
All ***Yes*** answers must be addressed below (use additional page if necessary)				
Problems Found (if any):				
Who was Notified of the Problems:				
Corrective Actions Taken:				

Annual Dry Weather Flow Monitoring Form

ANNUAL DRY WEATHER INSPECTION FORM

INSTRUCTIONS:

1. This inspection must be performed annually following three days of dry weather (i.e. no precipitation of any kind).
2. The purpose of this inspection is to verify that there is no discharge of liquids (e.g., process wastewater) from the facility to the stormwater outfalls.
3. The inspection will be completed at the stormwater outfalls by visual inspection. If inspection was completed by a method other than visual, describe the testing / evaluation method utilized and attach the results. Record all inspection results below.
4. Flowing water/liquid, or recent signs of flowing water/liquid, during dry weather is evidence of a non-storm water discharge. If non-storm water discharges are detected they must be reported to the Facility Response Coordinators immediately.
5. This inspection form and original signatures must be maintained with the SWPPP.

OUTFALL INSPECTION:

1. Circle the outfall number(s) that was(were) inspected: 001, 002, 003
2. Circle non-stormwater discharges that may be present at facility: Air Conditioning Condensate, Landscaping Water, Building and/or Pavement Wash Water, Footing Drainage, Hydrant Waterline Flushings, and / or Other(s): _____
3. Was a discharge, or evidence of discharge, observed (describe evidence)? _____
   _____
4. If yes, what is the likely source of the discharge? _____
   _____
5. What follow-up actions are to be taken to determine and / or eliminate the source?_____
   _____
6. What is the date that all follow-up actions were completed?_____

INSPECTION BLOCK:

INPECTOR'S NAME	
INPECTOR'S SIGNATURE	
INPECTOR'S TITLE	
INPECTION DATE	

CERTIFICATION BLOCK: *Based on my inspection, I certify that there are no non-stormwater discharges from this facility. The certifier must be a president, secretary, treasurer, or vice-president in charge of principal business function or a manager authorized to make management decisions.*

CERTIFIER'S NAME	
CERTIFIER'S SIGNATURE	
CERTIFIER'S TITLE	
DATE OF CERTIFICATION	

Note: If a non-stormwater discharge is discovered, the facility must identify its source to determine whether it is an authorized discharge. The facility must modify the SWPPP to address any newly identified allowable non-stormwater discharges. The facility must notify the DEC within 14 days of any non-stormwater discharge that cannot be easily eliminated.

Annual Site Compliance Evaluation

Annual Site Compliance Evaluation
Hudson Valley Regional Airport

Inspector:

Date:

Time:

Weather:

Inspection Item	Yes	No	Comments
SWPPP Review			
Are the individuals currently responsible for implementing the SWPPP inconsistent with those names referenced in the Plan?			
Are the quantities and types of oil / chemical products described / listed within the Plan inconsistent with those present at the facility? Explain.			
Are the measures to reduce pollutant loading (e.g. BMPs, inspections, training and recordkeeping) inadequate or improperly implemented? Explain.			
Are there items or areas within the Plan that are outdated or inconsistent? Explain.			
Have any non-stormwater discharges been added to the facility? List.			
Has the facility failed to complete the required sampling, inspections, and visual monitoring?			
Has the required sampling, inspections, and visual monitoring revealed any incidents of non-compliance? Explain.			
Have any operations been added which could impact stormwater?			
Have any material spills occurred since the last evaluation that have or will impact stormwater quality?			
Physical Inspection			
Do any of the following areas which have the potential to contribute to storm water discharge have evidence of, or the potential for, pollutants to enter the drainage system?			
Fuel Storage Tanks			
Fuel Offloading / Loading Areas			
Oil and Chemical Drums / Totes			
Drum / Tote Transfer Areas			
Salt Storage			
De-icing Pad			
Snow Storage Area			
Vehicle Maintenance or Cleaning Areas			
Equipment Maintenance or Cleaning Areas			
Aircraft Maintenance or Cleaning Areas			
Leaky Vehicles, Equipment, or Aircraft			
Exterior Storage of Used Parts, Equipment, etc.			
Waste Hoppers / Dumpsters, Residue or Trash			
Is there any evidence of tracking or blowing of sediment, industrial materials, raw or finished products, etc.? Explain.			
Does inspection of the outfalls indicate that BMPs are ineffective in preventing impacts to receiving waters? Explain.			
Are the structural stormwater control measures not intact or not in proper working order? Explain.			
Were unauthorized or allowable non-stormwater discharges (not listed in the SWPPP) observed? Explain.			
Did inspection of areas found to be the source of pollutants during the year, indicate continued concern? Explain.			
Is there any evidence of industrial stormwater pollution on the property exterior?			
Is spill response equipment inadequate to effectively respond to a release?			

Inspector:

Date:

Time:

Weather:

Inspection Item	Yes	No	Comments
Results of Annual Comprehensive Evaluation of Site Compliance			
As a result of the completion of this evaluation, does the SWPPP require revision?			

All *Yes* answers must be addressed below (use additional page if necessary)

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

Responsible Corporate Officer Print Name

Responsible Corporate Officer Signature

SWPPP Training Record Form

SWPPP Training Record Form

Date of Training: Person Conducting Training:

By signing below, I acknowledge that I have been trained on the requirements listed in the airport's SWPP Plan. I understand the information presented and had the opportunity to ask questions.

Person Trained	Person Trained

APPENDIX B

Stormwater Sampling / Monitoring Data

APPENDIX C

NOI, NOI Authorization Letter, and NYSDEC Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES MULTI-SECTOR GENERAL PERMIT

FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

Permit No. GP-0-17-004

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: March 01, 2018 Expiration Date: February 28, 2023

John J. Ferguson
Chief Permit Administrator

2·16·18

Authorized Signature Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Preface

The Clean Water Act (CWA)[1] requires that *stormwater discharges associated with industrial activity* from a *point source* to *waters of the United States* are unlawful, unless authorized by a *National Pollutant Discharge Elimination System (NPDES)* permit. New York's *State Pollutant Discharge Elimination System (SPDES)* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law* (*ECL*).

Coverage under the Multi-Sector General Permit for *Stormwater Discharges Associated with Industrial Activity* (MSGP) can be obtained by facilities, that conduct industrial activities identified within 40 CFR Part 122.26(b)(14)(i) through (ix) and (xi), with *stormwater* discharges to *surface waters of the State* from a *point source*.

To obtain coverage under this permit, an eligible facility must submit a Notice of Intent (NOI) form. Blank NOI forms are available by calling (518) 402-8111 or can be downloaded from the *Department*'s website at: http://www.dec.ny.gov

Be sure to review and understand the requirements that apply to your facility. This permit includes general requirements applicable to all facilities with permit coverage (Parts I through VI) and industry specific requirements in Part VII which are applicable to 29 different industrial activities.

This MSGP, identified as GP-0-17-004, is effective on March 01, 2018 and will expire on February 28, 2023.

NOTE
All italicized words within this *SPDES General Permit* are defined in Part VIII. Acronyms and Definitions

[1] Also known as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972 (Pub.L. 92-500, as amended Pub. L. 92-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.)

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Part I – Coverage under this Permit

A. Applicability

1. Coverage under this permit can be obtained in all areas of New York State where the *Department* implements CWA §402, where facilities:

    a. Conduct industrial activities identified within 40 CFR Part 122.26(b)(14)(i) through (ix) and (xi);

    b. Have a primary *industrial activity* that has a Standard Industrial Classification (SIC) code listed in Appendix B; and

    c. Have *stormwater discharges* to *surface waters of the State* from a *point source*.

2. An industrial facility that meets the criteria in Part I.A.1 that is owned ***and*** operated by a *municipality* covered by a *Municipal Separate Storm Sewer System (MS4)* Permit does not need coverage under this MSGP permit provided that the *MS4:*

    a. Includes the facility in the *MS4*'s *Stormwater* Management Program Plan;

    b. Implements the plan in accordance with the *MS4* Permit; and

    c. Completes all the applicable monitoring, corrective actions and reporting requirements specified in the MSGP. The deadlines for reporting are specified in the *MS4* permit.

B. Eligibility

Any *stormwater discharges* that are ineligible for coverage under Part I.C of this permit are not authorized by this permit and the *owner or operator* must either apply for a separate SPDES permit to cover those ineligible *discharges* or take steps necessary to make the *discharges* eligible for coverage under this permit.

1. Stormwater Discharges Authorized

Subject to compliance with the terms and conditions of this permit, the following *stormwater discharges* are authorized by this permit.

a. *Stormwater discharges* associated with industrial activities whose primary *industrial activity* has a Standard Industrial Classification (SIC) code listed in Appendix B.

b. *Discharges* subject to numeric effluent limitations listed in Part IV.F.3.e or Appendix D.

c. *Discharges* to impaired waterbodies that meet the requirements of Part II.C.2.

d. This permit also provides permit coverage to facilities in Sectors J and L for construction activities pursuant to 40 CFR 122.26(b)(14)(x).

e. *Stormwater discharges associated with industrial activity* that are mixed with stormwater *discharges* authorized under a different *SPDES* general permit or an *individual SPDES permit* provided that all *discharges* are in compliance with the terms and conditions of the various permits;

f. *Stormwater discharges associated with industrial activity* which are authorized by this permit may be combined with other sources of stormwater which are not classified as associated with *industrial activity* pursuant to 40 CFR 122.26(b)(14), provided that the combined *discharge* is in compliance with this permit and has not been designated by the Department as requiring an individual SPDES Permit.

g. *Stormwater discharges associated with industrial activity* listed in Part I.C.2 are eligible for coverage if the Department makes a determination that coverage under this general permit will not result in backsliding as specified in 6 NYCRR 750-1.10.

2. Non-Stormwater Discharges Authorized

Subject to compliance with the terms and conditions of this permit, only the following non-*stormwater discharges are authorized* by this permit provided that the SWPPP contains the documentation specified in Part III.A.7.f.

a. Non-*stormwater discharges* listed in Part 750-1.2(a)(29)(vi), with the following exception:

   - *Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned.

b. Incidental windblown mist from cooling towers that collect on rooftops or adjacent portions of the facility, but not intentional *discharges* from cooling tower (e.g.; "piped" cooling tower blowdown or drains).

C. Activities which are Ineligible for Coverage under this General Permit

The following are **not** authorized by this permit:

1. *Discharges* from *industrial activity* that are mixed with sources of non-*stormwater* other than those expressly authorized under this permit.

2. Unless otherwise determined by the Department to be eligible under Part I.B.g, *stormwater discharges from industrial activity* where:

a. an *individual SPDES permit* authorizing such *discharges* has been revoked, suspended or denied;

b. the facility has failed to renew an expired *individual SPDES permit* which authorized such *discharges*; or

c. the *discharge* is covered by another SPDES permit.

3. *Discharges* from *industrial activity* which are subject to an *effluent limitation guideline* addressing *stormwater* which is not specifically listed in Table IV-3 or Appendix D (or a combination of *stormwater* and process water);

4. *Discharges* from *industrial activity* from *construction activities*, except *stormwater discharges* from portions of a construction site at facilities covered under Sectors J & L or that can be classified as an *industrial activity* under 40 CFR 122.26(b)(14)(i) through (ix) or (xi).

5. *Discharges from industrial activities* that may adversely affect an endangered or threatened species, or its critical habitat, unless the *owner or operator* has obtained a permit issued pursuant to Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR) Part 182 for the facility or the *Department* has issued a letter of non-jurisdiction for the facility.

6. *Discharges* occurring on federal lands from *industrial activity* from either: inactive mining, inactive landfills, or inactive oil and gas operations where an *owner or operator* cannot be identified.

7. *Discharges* from *industrial activity* to impaired waterbodies at facilities that fail to maintain eligibility in accordance with Part II.C.2.

8. *Discharges* of hazardous substances (as listed in 6 NYCRR Part 597) or petroleum.

D. Permit Authorization

1. How to Obtain Authorization

a. To obtain authorization under this permit, the *owner or operator* of an eligible facility must:

(1) Develop and implement a *Stormwater* Pollution Prevention Plan (SWPPP) or update the existing SWPPP, in accordance with the requirements in Part III and applicable sections of Part VII prior to submitting the NOI; and

(2) Submit a complete Notice of Intent in accordance with Part I.D.2 and signed in accordance with Appendix H.8. The NOI certifies that the facility is eligible for coverage according to Part I.B, and provides information on the facility's industrial activities and related *discharges*.

- If more than one activity listed in Appendix B is being performed at a facility, all SIC codes must be included in the NOI submitted to the *Department* to gain or renew coverage under MSGP.

b. New *stormwater discharges associated with industrial activity* which require any other *Uniform Procedures Act* permits (*Environmental Conservation Law*, 6 NYCRR Part 621) cannot be covered under this permit until the other required permits are obtained (see Appendix E). In addition to the requirements in Part I.D.1.a, new dischargers must:

(1) Satisfy any project review pursuant to the State Environmental Quality Review Act ("SEQRA"), when SEQRA is applicable (see Appendix E). See the Department's website (http://www.dec.ny.gov/) for more information; and

(2) Obtain all necessary Department permits subject to the Uniform Procedures Act ("UPA") (see 6 NYCRR Part 621), unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4) (see Appendix E).

(3) Submit a report including the information specified in Appendix E with the NOI. A copy of this report must be retained with the SWPPP.

2. *Submitting the Notice of Intent*

a. An *owner or operator* of a facility meeting the eligibility requirements in Part I.B must submit a complete NOI, which is signed in accordance with Appendix H.8, to the *Department.*

(1) Prior to December 20, 2020, the *owner or operator* may elect to submit the Notice of Intent by mailing a paper form to the address below or by using the *Department*'s online NOI.

(2) Beginning December 21, 2020 and in accordance with the EPA's *NPDES* Electronic Reporting Rule, the *owner or operator* must submit the NOI electronically using the *Department*'s online NOI. Both versions of the NOI are located on the *Department*'s website http://www.dec.ny.gov/.

b. An *owner or operator* who submits a complete NOI will be authorized to *discharge stormwater* under the terms and conditions of this permit, unless otherwise notified by the Department, Thirty (30) calendar days

after the date the *Department* receives a complete NOI (electronic or paper).

c. The paper NOI is to be submitted to the following address:

MSGP Permit Coordinator
NYSDEC, Division of Water
Bureau of Water Permits
625 Broadway
Albany, NY 12233-3505

3. *Modifying the Notice of Intent*

After gaining authorization under this permit, an owner or operator must notify the Department of any corrections or updates to the information provided in the original NOI. All modifications must be reported. Stormwater Discharges associated with industrial activity or outfalls not included in the most recent NOI that is on file at the Department are not authorized unless and until the corrections or updates have been received by the Department.

In order to modify the original NOI, an *owner or operator* must submit corrections or updated information, by submitting:

a. Changes electronically using the Departments electronic NOI; or

b. A completed paper NOI.

Modifications to the original NOI become effective on the date the *Department* receives the electronic NOI or a complete paper NOI.

4. *Change of Owner or Operator*

When the *owner or operator* of a facility changes, the original *owner or operator* should notify the new *owner or operator* in writing of the possible requirement to have coverage under this permit.

a. The original *owner or operator* must submit the Notice of Termination to end coverage under this permit for their facility in accordance with Part I.E; and,

b. The new *owner or operator* shall refer to Part I of this permit to determine if they need coverage under this permit.

c. The original *owner or operator* will continue to be responsible for compliance with all permit conditions and fees until the NOT has been received.

5. Conditional Exclusion for No Exposure

a. Facilities may qualify for a "Conditional Exclusion for No Exposure" when all industrial activities and materials are completely sheltered from exposure to rain, snow, snowmelt and/or runoff. Facilities qualifying for this exclusion are not required to obtain coverage under this permit.

   (1) Facilities with uncovered parking areas for vehicles awaiting maintenance may be eligible for this waiver if only routine maintenance is performed inside and all other *No Exposure* criteria are met.

b. Facilities accepting or repairing disabled vehicles and/or vehicles that have been involved in accidents are not eligible for the Conditional Exclusion for *No Exposure*.

c. To obtain the “Conditional Exclusion of No Exposure”, the *owner or operator* must submit a certification of *no exposure* to the *Department* using forms provided by the *Department*. This certification must be submitted once every 5 years and is non-transferable.

d. Facilities must maintain the condition of *no exposure*. The *no exposure* exclusion ceases to apply when industrial activities or materials become exposed. The *Department* reserves the right to require permit coverage when *stormwater discharges* from the facility are likely to have an adverse impact on water quality.

E. Terminating Coverage

To terminate permit coverage, the *owner or operator* must submit a complete Notice of Termination (NOT) which is signed in accordance with Appendix H.8. The *owner or operator* continues to be responsible for meeting permit requirements and payment of annual fees until a complete NOT is received by the *Department.* The *owner or operator* must submit an NOT to terminate coverage under this permit when one or more of the following conditions are met:

1. When all *stormwater discharges* associated with *industrial activity* authorized by this permit are eliminated;

2. If all *stormwater discharges* are conveyed to a sanitary sewer, treatment works or a combined sewer system and the *owner or operator* of such system has accepted responsibility or approved connection for the *discharge*;

3. All industrial activities covered under this *SPDES* permit cease AND all materials, equipment or other potential *pollutants*, including but not limited to, residue in soils are removed;

4. When a different *SPDES* authorization for all *discharges* covered under this permit becomes effective; or

5. When the *owner or operator* of the *stormwater discharges* associated with *industrial activity* at a facility changes. (See Part I.D.4)

F. Deadlines for submittal of NOIs and NOTs and Changes to the NOI

1. New *discharge*rs or other owners or operators of facilities who intend to obtain coverage under this general permit shall submit a complete NOI according to the following schedule:

    a. For electronic NOIs - at least thirty (30) calendar days before *industrial activity* begins at the facility; or

    b. For paper NOIs - at least thirty (30) calendar days before *industrial activity* begins at the facility.

2. Facilities with effective coverage on September 30, 2017, under the *SPDES* General Permit for *Stormwater Discharges Associated with Industrial Activity* (GP-0-12-001), are eligible for continued coverage under this permit (GP-0-17-004) on an interim basis for up to one-hundred twenty (120) calendar days from the effective date of the permit. During this interim period, an *owner or operator* must:

    a. Update the facility's SWPPP to comply with the requirements of this permit prior to submitting the NOI; and,

    b. Submit a complete NOI, signed in accordance with Appendix H.8. The complete NOI must be received within ninety (90) calendar days from the date this permit becomes effective.

3. When the *owner or operator* of a facility which is covered by this permit changes, the previous *owner or operator* must submit an NOT in accordance with Part I.E. The new *owner or operator* shall refer to Part I of this permit to determine if they need coverage under this permit.

4. An Owner or Operator must promptly notify the *Department* of any changes or corrections to the submitted NOI by submitting changes according to the following procedures:

    a. For electronic NOIs - If there is an electronic NOI on file with the Department, submit the changes/updates to the NOI electronically;

    b. For Paper NOIs - submit a new fully completed NOI. An incomplete NOI will not be accepted by the Department.

    Stormwater discharges from industrial activities or *outfalls* not included in previously submitted NOIs are not authorized until a complete NOI is received.

Part II – Effluent Limitations

Effluent limits are required to *minimize* the *discharge* of *pollutants*. The term "*minimize*" means reduce and/or eliminate to the extent achievable using *control measures* (including *Best Management Practices* (BMPs) selected and designed in accordance with Part II.D) that are technologically available and economically practicable and achievable in light of best industry practice. *Control measures* are selected to meet the limits (non-numeric, numeric and water quality based) contained in this Part.

A. Non-Numeric Technology Based Effluent Limits

The Owner or Operator must comply with the following non-numeric effluent limits as well as any sector-specific non-numeric effluent limits in Part VII.

1. Minimize Exposure

The *owner or operator* must *minimize* the exposure of manufacturing, processing, and material storage areas to rain, snow, snowmelt, and runoff in order to *minimize pollutant discharges* by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. This includes areas used for loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations. Unless not technologically possible or not economically practicable and achievable in light of best industry practices, the *owner or operator* must also:

a. Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;

b. Locate materials, equipment, and activities so that leaks and spills are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas);

c. Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the *discharge* of *pollutants*;

d. Store leaky vehicles and equipment indoors or, if stored outdoors, use drip pans and absorbents;

e. Use spill/overflow protection equipment;

f. Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray; and ensure that all washwater drains to a proper collection system (i.e., not the *stormwater* drainage system);

g. Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks; and

h. *Minimize* exposure of chemicals by replacing with a less toxic alternative.

Note: The *discharge* of vehicle and equipment washwater, including tank cleaning operations, is not authorized by this permit. These wastewaters must be covered under a separate *SPDES* permit, *discharge*d to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or disposed of otherwise in accordance with applicable law.

2. Good Housekeeping

The *owner or operator* must keep clean all exposed areas that are potential sources of *pollutants.* The *owner or operator* must perform good housekeeping measures in order to *minimize pollutant discharges*, including but not limited to, the following:

a. Sweep or vacuum at regular intervals or, alternatively, wash down the area and collect and/or treat, and properly dispose of the washdown water;

b. Store materials in appropriate containers;

c. Keep all dumpster lids closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that *discharges* have a control (e.g., secondary containment, treatment); and,

d. Prevent the discharge of waste, garbage and floatable debris by keeping exposed areas free of such materials, or by intercepting them before they are *discharge*d;

- Plastic Materials Requirements: Facilities that handle pre-production plastic must implement *Best Management Practices* to eliminate *discharges* of plastic in *stormwater*. Examples of plastic material required to be addressed as *stormwater pollutants* include plastic resin pellets, powders, flakes, additives, regrind, scrap, waste and recycling.

3. Maintenance

a. In order to *minimize pollutant discharges* and achieve the effluent limits in this permit, the *owner or operator* must maintain all industrial equipment and systems and *control measures* in effective operating condition. This includes:

(1) Performing inspections and preventive maintenance of *stormwater* drainage, source controls, treatment systems, and plant equipment and systems that could fail and result in contamination of *stormwater*;

(2) Maintaining non-structural *control measures* (e.g., keep spill response supplies available, personnel appropriately trained);

(3) Inspecting and maintaining baghouses quarterly during periods of operation, or in accordance with manufacturers recommendations, to prevent the escape of dust from the system and immediately removing any accumulated dust at the base of the exterior baghouse; and,

(4) Cleaning catch basins when the depth of debris reaches two-thirds of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe.

b. Routine maintenance shall be performed to ensure BMPs are operating properly. When a BMP is not functioning to its designed effectiveness and is in need of repair or replacement:

(1) Maintenance shall be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable, but not more than 12 weeks after completion of the most recent routine facility inspection or the comprehensive site inspection, unless permission for a later date is granted in writing by the Department; and,

(2) All reasonable steps shall be taken to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events.

4. Spill Prevention and Response Procedures

a. The *owner or operator* must *minimize* the potential for leaks, spills and other releases that may be exposed to *stormwater* and develop plans for effective response to such spills if or when they occur in order to *minimize pollutant discharges*. At a minimum, the *owner or operator* must:

(1) Plainly label containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides”) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

(2) Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the *discharge* of *pollutants* from these areas;

(3) Where practicable, protect industrial materials and activities with a storm resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff;

(4) Develop training on the procedures for stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;

(5) Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and

(6) Develop procedures for notification of the appropriate facility personnel, emergency response agencies, and regulatory agencies when a leak, spill, or other release occurs. If possible, one of these individuals should be a member of the *stormwater* pollution prevention team (see Part III.A.1). Any spills must be reported in accordance with Part VI.A.3.

b. Measures for cleaning up spills or leaks must be consistent with applicable petroleum bulk storage, chemical bulk storage or hazardous waste management regulations at 6 NYCRR Parts 596-599, 613 and 370-373.

c. This permit does not relieve the *owner or operator* of any reporting or other requirements related to spills or other releases of petroleum or hazardous substances. Any spill of a hazardous substance must be reported in accordance with 6 NYCRR 597.4. Any spill of petroleum must be reported in accordance with 6 NYCRR 613.6 or 17 NYCRR 32.3.

5. Erosion and Sediment Controls

The *owner or operator* must stabilize exposed areas and control runoff using structural and/or non-structural *control measures* to *minimize* onsite erosion and sedimentation. Erosion and Sediment Controls must be in accordance with the New York State Standards & Specification for Erosion & Sediment Control (2016). Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate equivalence to the technical standard.

6. Management of Runoff

The *owner or operator* must divert, infiltrate, reuse, contain, or otherwise reduce *stormwater* runoff, to *minimize pollutants* in the *discharges*.

7. Salt Storage Piles or Piles Containing Salt

In order to *minimize pollutant discharges* the *owner or operator* must enclose or cover storage piles of salt, or piles containing salt, used for deicing, maintenance of paved surfaces, or for other commercial or industrial purposes. The *owner or operator* must implement appropriate measures

(e.g., good housekeeping, diversions, containment) to *minimize* exposure resulting from adding to or removing materials from the pile.

8. *Employee Training*

a. The *owner or operator* must train all employees who work in areas where industrial materials or activities are exposed to *stormwater*, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of the *Stormwater* Pollution Prevention Team.

b. At a minimum, all training must be conducted annually.

c. The *owner or operator* must ensure the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

(1) Personnel who are responsible for the design, installation, maintenance, and/or repair of *control measures*;

(2) Personnel responsible for the storage and handling of chemicals and materials that could become contaminants found in *stormwater discharges*;

(3) Personnel who are responsible for conducting and documenting monitoring and inspections as required in Part IV; and,

(4) Personnel who are responsible for taking and documenting corrective actions as required in Part V.

d. Personnel identified in Part II.A.8.c must be trained in the following subjects if the subject is appropriate to the scope of their SWPPP responsibilities.

(1) An overview of what is in the SWPPP and the purpose of the SWPPP;

(2) Spill response procedures, good housekeeping, maintenance requirements and material management practices;

(3) How to recognize unauthorized *discharges;*

(4) The location of all controls on the site required by this permit, and how to evaluate their condition and maintenance needs;

(5) The proper procedures to follow with respect to permit's pollution prevention requirements, including sampling and reporting; and

(6) When and how to conduct inspections, record applicable findings, and take corrective actions.

9. Non-Stormwater Discharges

The *owner or operator* must eliminate non-*stormwater discharges* not authorized by a *SPDES* permit in accordance with Part I.B.2.

10. Waste, Garbage and Floatable Debris

The *owner or operator* must ensure that waste, garbage, and floatable debris are not *discharge*d to *surface waters of the state* by keeping exposed areas free of such materials or by intercepting them before they are *discharge*d.

11. Dust Generation and Vehicle Tracking of Industrial Materials

The *owner or operator* must *minimize* generation of dust and off-site tracking of raw, final, or waste materials in order to *minimize* the *pollutant discharges*.

12. Secondary Containment

The *owner or operator* must ensure that compliance is maintained with all applicable regulations including, but not limited to, those involving releases, registration, handling and storage of petroleum, chemical bulk and hazardous waste storage facilities (6 NYCRR 596-599, 613 and 370-373).

Where it is not feasible to eliminate *discharges* from handling and storage areas, the *owner or operator* must implement the following BMPs:

a. Loading and unloading areas shall be operated to *minimize* spills, leaks or the *discharge* of *pollutants* in *stormwater*. Protection such as roofs, overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate.

   (1) During deliveries, have staff familiar with spill prevention and response procedures present to ensure that any leaks/spills are immediately contained and cleaned up; and

b. Use of spill and overflow protection (e.g., drip pans, and/or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

c. All spilled or leaked substances must be removed from secondary containment systems as soon as practical and for Chemical Bulk Storage (CBS) storage areas within 24 hours of the *owner or operator* discovering the spill, unless authorization is received from the *Department*.

   (1) The containment system must be thoroughly cleaned to remove any residual contamination which could cause contamination of *stormwater* and the resulting *discharge* of *pollutants* to *waters of the State*.

(2) Following spill cleanup the affected area must be completely flushed with clean water three times and the water removed after each flushing for proper disposal in an on-site or off-site wastewater treatment plant designed to treat and permitted to *discharge* such wastewater.

(3) The *owner or operator* shall test the first batch of *stormwater* following the spill cleanup to determine *discharge* acceptability. If the water contains no *pollutants* it may be *discharge*d, otherwise it must be disposed of as noted above. (See Part IV.F.1.e for the list of parameters to be sampled.)

d. *Stormwater* must be removed from a secondary containment system before it compromises the system's capacity. Each *discharge* may only proceed with the prior approval of the facility representative responsible for ensuring *SPDES* permit compliance. Bulk storage secondary containment drainage systems must be locked in a closed position except when the *owner or operator* is in the process of draining accumulated *stormwater*. Transfer area secondary containment drainage systems must be locked in a closed position during all transfers and must not be reopened unless the transfer area is clean of contaminants. *Stormwater discharges* from secondary containment systems should be avoided during periods of precipitation. A logbook shall be maintained on site noting, for each *discharge*:

- Screening method;
- Results of screening;
- Date time and volume; and,
- Supervising personnel.

e. Prohibited *Discharges* - In all cases, any *discharge* which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality is prohibited.

B. Numeric Effluent Limitations

The *owner or operator* of facilities listed in an industrial category subject to one or more of the *effluent limitations guidelines* identified in Appendix D, must meet the numeric effluent limits specified in the referenced Sector in Part VII.

C. Water Quality Based Effluent Limitations

1. Maintaining Water Quality Standards

a. The *Department* expects that compliance with the other conditions of this permit will control *discharges* necessary to meet applicable water quality standards. It shall be a violation of the *Environmental Conservation Law (ECL)* for any *discharge* authorized by this general permit to either cause or contribute to a violation of water quality standards as contained in 6 NYCRR Parts 700-705.

b. If there is evidence indicating that the *stormwater discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part V of this permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an *individual SPDES permit*. Failure to complete the required corrective action is a violation of this permit.

c. In all cases, any *discharge* which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality is prohibited.

2. Impaired Waters

a. *Discharges* to an *impaired waterbody* are not eligible for coverage under this permit if the cause of impairment is a *pollutant* of concern included in the *benchmark*s and/or numeric *effluent limitations* to which the facility is subject unless the facility:

(1) Prevents all exposure to *stormwater* of the *pollutant(s)* for which the waterbody is impaired; or

(2) Documents that the *pollutant* for which the waterbody is impaired is not present on-site; or

(3) Provides additional information in the SWPPP to *minimize* the *pollutant* of concern causing the impairment as specified in Part III.D.2.

b. If conditions at the facility conform with Part II.C.2.a(1) or (2) all analysis and documentation that supports eligibility must be maintained with the SWPPP.

D. Best Management Practices Selection and Design Considerations

The *owner or operator* must consider the following when selecting and designing *BMPs*:

a. How to prevent *stormwater* from interacting with and contacting *pollutants* and *pollutant* sources;

b. The use of *BMPs* in series or combination;

c. Assessment of the type of *pollutant*, the quantity and nature of the *pollutant(s)*, and their potential to impact the water quality of receiving waters;

d. Opportunities to combine the dual purposes of water quality protection and local flood control benefits, including physical impacts of high flows on streams (e.g., bank erosion, impairment of aquatic habitat, etc.);

e. Opportunities to offset the impact of *impervious areas* of the facility on groundwater recharge and base flows in local streams, taking into account the potential for groundwater contamination (i.e., *hotspots*);

f. Opportunities to attenuate flow using open vegetated swales and natural depressions;

g. Conservation and/or restoration of the riparian buffers of streams and rivers; and,

h. The use of treatment interceptors (e.g., swirl separators and sand filters).

Part III – *Stormwater* Pollution Prevention Plans

The SWPPP documents the practices and procedures to ensure compliance with the conditions of this permit, including the selection, design, installation and maintenance of *control measures* selected to meet *effluent limitations* in Parts II and VII.

The *owner or operator* is responsible for the implementation of the SWPPP.

Note: The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans or documents such as an Erosion and Sediment Control (ESC) plan, a Mined Land Use Plan, a Spill Prevention Control and Countermeasure (SPCC) plan developed for the facility or *BMP* programs otherwise required for the facility provided that the incorporated plan(s) meet or exceed the SWPPP content requirements of Part III.A and the applicable activity-specific requirements in Part VII. All plans incorporated by reference into the SWPPP become enforceable under this permit; however, this enforcement is limited only to those aspects of these other plans that are specifically referenced to provide information or practices required for the SWPPP.

A. Contents of the SWPPP

All SWPPPs shall include, at a minimum:

1. Pollution Prevention Team

Identify the individuals (by name or title) and their role, in assisting the *owner or operator* in developing, implementing, maintaining and revising the facility's SWPPP.

2. General Site Description

A written description of:

a. Industrial activities occurring in each drainage area.

b. The name of the nearest receiving water(s), including intermittent streams and wetlands (mapped and federally regulated wetlands) that may receive *discharges* from the facility.

c. If *stormwater* is *discharge*d to an *MS4,* the SWPPP must identify the *MS4* operator and the receiving water to which the *MS4 discharges*.

d. The flow path of *stormwater* within the facility, and the general path of *stormwater* flows between the facility and the nearest surface waterbody(ies) and/or location(s) where *stormwater* enters an *MS4,* if applicable.

e. The run-on from adjacent properties, if present. The *owner or operator* may include an evaluation of how the quantity or quality of the *stormwater* running onto the facility impacts the facility's *stormwater discharges*.

f. Any *discharges* that are currently covered by another *SPDES* permit at the facility (e.g., process wastewater, sanitary wastewater, non-contact cooling water, etc.)

g. Size of the property in acres.

h. Provide an estimate of the percent imperviousness of the site using the following formula:

$$\frac{\text{(Area of Roofs + Area of Paved and Other Impervious Surfaces) x100}}{\text{Total Area of Facility}}$$

i. Locations of sensitive areas (e.g. *impaired waters*; listed threatened & endangered species or their critical habitat; etc.)

3. Potential Pollutant Sources

The SWPPP shall identify each area at the facility where industrial materials or activities are exposed to *stormwater* or from which authorized non-*stormwater discharges* originate, including any potential *pollutant* sources for which the facility has reporting requirements under the Emergency Planning and Community Right-To-Know Act (EPCRA), Section 313.

a. Industrial materials or activities include: industrial machinery; raw materials; intermediate products; byproducts; final products or waste products; and, material handling activities which includes storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product or waste product.

b. For each separate area identified, the description must include:

(1) Activities - A list of the activities occurring in the area (e.g., material storage, equipment fueling and cleaning, cutting steel beams, etc.); and

(2) *Pollutants* - A list of the associated *pollutant(s)* or *pollutant* parameter(s) (e.g., crankcase oil, iron, biochemical oxygen demand, pH, etc.) for each activity. The *pollutant* list must include all *significant materials* that have been handled, treated, stored or disposed in a manner to allow exposure to *stormwater* for a period of three years before being covered under this permit.

(3) Potential for presence in *stormwater* - For each area of the facility that generates *stormwater discharges associated with industrial activity* a prediction of the direction of flow, and the likelihood of the *industrial*

activity to contaminate the *stormwater discharge*. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced or *discharge*d; the likelihood of contact with *stormwater*; and history of *reportable* leaks or spills of toxic or hazardous *pollutants*.

4. *Spills and Releases*

a. The SWPPP must clearly identify areas where potential spills or releases can contribute to *pollutants* in *stormwater discharges* and their accompanying drainage points.

b. For areas that are exposed to precipitation or that otherwise drain to a *stormwater* conveyance to be covered under this permit, the SWPPP must include a list of *reportable* spills or releases[2] of petroleum and hazardous substances or other *pollutants*, including unauthorized *non-stormwater discharges,* that may adversely affect water quality that occurred during the three-year period prior to the date of the submission of a NOI. The list must be updated when *reportable* spills or releases occur.

c. Following any spill or release, the *owner or operator* must evaluate the adequacy of the BMPs identified in the facility's SWPPP. If the BMPs are inadequate, the SWPPP must be updated to identify new BMPs that will prevent reoccurrence and improve the emergency response to such releases.

d. Document when training occurs on the procedures for stopping, containing, and cleaning up leaks, spills, and other releases.

e. Define and document the appropriate facility personnel, emergency response agencies, and regulatory agencies to be notified when a leak, spill, or other release occurs.

5. *General Location Map*

A general location map (e.g., USGS quadrangle or other map) with enough detail to identify the location of the facility and the receiving waters and locations where *stormwater* enters an *MS4*, if applicable, within one mile of the facility.

6. *Site Map*

A site map identifying the following:

a. Property boundaries and size in acres;

b. Location and extent of significant structures (including materials shelters), and impervious surfaces;

[2] This may also include releases of petroleum or hazardous substances that are not in excess of reporting quantities but which may still cause or contribute to significant water quality impairment. For example, the reportable quantity for ammonia is listed to be 100 pounds and releases well below this threshold will cause water quality impairment and must be addressed.

c. Location of each *outfall* labeled with the *outfall* identification, including *outfalls* with *discharges* authorized under other *SPDES* permits;

d. The approximate outline of the drainage area to each *outfall;*

e. Locations of haul and access roads;

f. Rail cars and tracks;

g. Arrows showing direction of *stormwater* flow;

h. Location of all receiving waters in the immediate vicinity of the facility, indicating if any of the waters are impaired and, if so, whether the waters have *TMDLs* established for them;

i. Location of *MS4s* and where the *stormwater discharges* to them;

j. Location of all *stormwater* conveyances including ditches, pipes, and swales;

k. Locations where *stormwater* flows have significant potential to cause erosion;

l. Location and source of run-on from adjacent property containing significant quantities of *pollutants* and/or volume of concern to the facility;

m. Locations of the following areas where such areas are exposed to precipitation or *stormwater* run-on:

- Fueling stations;
- Vehicle and equipment maintenance and/or cleaning areas;
- Loading/unloading areas;
- Locations used for the treatment, storage or disposal of wastes;
- Liquid storage tanks;
- Processing and storage areas;
- Locations where significant materials, fuel or chemicals are stored and transferred;
- Locations where vehicles and/or machinery are stored when not in use
- Transfer areas for substances in bulk;
- Locations of potential *pollutant* sources identified under Part III.A.3;
- Location and description of non-*stormwater discharges* listed in Part I.B.2;
- Locations where major spills or leaks identified under Part III.A.4 have occurred;
- Locations of all *stormwater* monitoring points;

- Locations of all existing structural *BMP*s.

7. Stormwater Controls

The SWPPP must document in writing the location and type of *BMPs* installed and implemented at the facility to achieve the non-numeric effluent limits in Part II.A and where applicable in Part VII, and the sector specific numeric *effluent limitations* in Part VII. The SWPPP shall describe how each *BMP* is being implemented for all the potential *pollutant* sources identified in Part III.A.3.

If the *owner or operator* determines that any of the BMPs described in Part II.A, or any sector-specific BMPs in Part VII, are not appropriate for the facility, a written explanation of why they are not appropriate shall be included in the SWPPP. If new or innovative BMPs not listed in this permit are being used, descriptions of them shall be included in this section of the SWPPP.

a. **Good Housekeeping** - The SWPPP must describe all good housekeeping practices that are being implemented by the *owner or operator* including those described in Part II.A.2 to *minimize pollutant discharges* from all exposed areas that are potential sources of *pollutants*.

b. **Facility inspections** - The SWPPP must describe procedures for scheduling, completing and recording results of routine and comprehensive site inspections at frequencies meeting or exceeding those specified in Part IV of this permit.

c. **Maintenance and Repair**

(1) The SWPPP must describe a preventative maintenance program that includes timely inspection, maintenance and repairs of all industrial equipment and systems.

(2) The SWPPP must describe a preventative maintenance program that includes timely inspection, maintenance and repairs of structural and non-structural BMPs.

(3) The SWPPP must describe inspection and maintenance procedures for baghouses to prevent the escape of dust from the system and the immediate removal of accumulated dust at the base of the exterior baghouse.

(4) The SWPPP must include procedures for catch basin cleaning.

d. **Spill Prevention and Response Procedures**

(1) The SWPPP must describe the procedures that will be followed for cleaning up spills or leaks. The procedures and necessary spill response equipment must be made available to those employees who may cause or detect a spill or leak.

(2) The SWPPP must describe procedures for notification of the appropriate facility personnel, emergency response agencies, and regulatory agencies when a leak, spill, or other release occurs. If possible, one of these individuals should be a member of the *stormwater* pollution prevention team (see Part III.A.1).

e. **Employee Training and Education -** The SWPPP must describe the *stormwater* training program required for individuals conducting *industrial activity* at the facility. The description must include:

(1) The specific training given (see Part II.A.8.d)

(2) The target audience (e.g. employees in positions responsible for specific tasks, club members performing engine repair, etc.).

(3) Identify periodic dates for such training (e.g., annually, every six months during the months of July and January). An annual signed and dated employee training log must be kept in the SWPPP.

f. **Document Non-*Stormwater Discharges* -** Non-*stormwater discharges* listed in Part I.B.2 must have the following information documented:

(1) ***Discharge* Certification** - The SWPPP must include a certification that all *discharges* have been tested or evaluated for the presence of non-*stormwater discharges*. A copy of the certification must be included in the SWPPP at the facility. The certification must include:

(a) The date of any testing and/or evaluation;

(b) Identification of potential significant sources of non-*stormwater discharges* at the site;

(c) A description of the results of any test and/or evaluation for the presence of non-*stormwater discharges*;

(d) A description of the evaluation criteria or testing method used; and

(e) A list of the *outfalls* or on-site drainage points that were directly observed during the test.

(2) **Detail Non-*Stormwater Discharges*** - The sources of non-*stormwater discharges* listed in Part I.B.2 are authorized *discharges* under this permit provided the *owner or operator* includes the following information in the SWPPP:

(a) Identification of each authorized non-*stormwater* source (flows from emergency/unplanned firefighting activities do not need to be identified);

(b) The location where the non-*stormwater discharge* is likely to occur;

(c) Descriptions of appropriate BMPs for each source; and

(d) If mist blown from cooling towers is included as one of the authorized non-*stormwater discharges* from the facility, the *owner or operator* must specifically evaluate the potential for the *discharges* to be contaminated by chemicals used in the cooling tower and must select and implement BMPs to control such *discharges* so that the levels of cooling tower chemicals in the *discharges* would not cause or contribute to a violation of an applicable water quality standard.

g. The SWPPP must describe *BMPs* selected to eliminate *discharges* of solid materials, including waste, garbage and floating debris, to *surface waters of the State*, except as authorized by a permit issued under section 404 of the CWA.

h. The SWPPP must describe *BMPs* selected to *minimize* off-site vehicle tracking of raw, final, or waste materials or sediments, and the generation of dust. Tracking or blowing of raw, final, or waste materials from areas of *no exposure* to exposed areas must be *minimized*.

i. The SWPPP must describe BMPs selected to stabilize exposed areas and contain runoff using structural and/or non-structural *control measure*s to *minimize* onsite erosion and sedimentation, and the resulting *discharge* of *pollutants*.

(1) The SWPPP shall identify areas at the facility which, due to topography, land disturbance (e.g., construction) or other factors, have potential for significant soil erosion.

(2) The SWPPP must identify structural, vegetative, and/or stabilization *BMPs* that will be implemented to limit erosion.

(3) Velocity dissipation devices (or equivalent measures) must be placed at *discharge* locations and along the length of any *outfall* channel if they are necessary to provide a non-erosive flow velocity from the structure to a water course.

(4) The SWPPP must contain adequate details to demonstrate that controls conform to the New York Standards and Specifications for

Erosion and Sediment Control (2016), or equivalent. This document is available at: http://www.dec.ny.gov

j. The SWPPP shall describe the traditional *stormwater* management practices (permanent structural *BMPs)* that currently exist or that are planned for the facility. These types of *BMPs* are typically used to divert, infiltrate, reuse, or otherwise reduce *pollutants* in *stormwater discharges* from the site. Examples of *BMP*s that could be used include but are not limited to: *stormwater* detention structures (including wet ponds); green infrastructure practices; *stormwater* retention structures; flow attenuation by use of open vegetated swales and natural depressions; and onsite infiltration of runoff.

   The SWPPP shall provide that all *stormwater* management practices that the *owner or operator* determines to be reasonable and appropriate, or are required by a *State* or local authority, shall be implemented and maintained. Factors for the *owner or operator* to consider when selecting appropriate *BMPs* should include:

   (1) The industrial materials and activities that are exposed to *stormwater*, and the associated *pollutant* generating potential of those materials and activities; and

   (2) The beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters. Structural measures shall be placed on upland soils, avoiding wetlands and floodplains, if possible. Structural *BMPs* may require a separate permit under section 404 of the CWA before installation begins.

k. The SWPPP must document that all storage piles of salt used for deicing or other commercial or industrial purposes are enclosed or covered to prevent exposure to precipitation, except during active operations to add or remove materials from the pile.

   For a salt storage facility, the SWPPP must document all good housekeeping measures in place to assure that salt spilled during transfer and spilled or tracked along haul and access roads is removed and returned to the covered storage pile.

l. The SWPPP must document the location and type of BMPs installed and implemented at the facility to achieve the non-numeric effluent limits stipulated in Part II.A and any relevant sector-specific section(s) of Part VII of this permit.

m. The SWPPP must document the location and type of BMPs installed and implemented at the facility to achieve and address any applicable effluent limitations based in the activity-specific section(s) of Part VII, which are summarized in the table in Appendix D of this permit.

8. Monitoring and Sampling Data

The SWPPP must include:

a. A summary of existing *stormwater discharge* sampling data taken at the facility;

b. Chain of Custody Records for samples collected and transported to an approved laboratory;

c. Laboratory reports of results of sample analysis;

d. Quarterly Visual Monitoring Reports;

e. Copies of semi-annual *Discharge Monitoring Reports (DMRs);*

f. Copies of *Annual Certification Reports* (ACR);

g. A summary of all *stormwater* sampling data collected during the term of this permit;

h. Any monitoring waivers that have been claimed.

9. Copy of Permit Requirements

The *owner or operator* must maintain a copy of the permit with the SWPPP. The NOI Authorization Letter and all NOIs (including modifications) must be maintained with the SWPPP.

10. Inspection Schedule & Documentation

The SWPPP shall contain the schedule for conducting inspections and all documentation resulting from the inspection.

11. Corrective Action Documentation

The SWPPP shall contain all corrective action documentation as detailed in Part V.C.

B. SWPPP Preparer

1. The Owner or Operator shall have a *qualified person* prepare the SWPPP. . This plan does not necessarily have to be developed or certified by a licensed Professional Engineer; however all components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of a professional engineer licensed to practice in the State of New York.

2. Erosion and Sediment Control plans needed to stabilize exposed areas and control runoff per Part II.A.5 or to meet sector specific requirements shall be prepared by, a *qualified person* who is knowledgeable in the principles and practices of erosion and sediment control.

3. The design of post-construction *stormwater* management controls as defined in the SPDES General Permit for *Stormwater Discharges* from *Construction Activity (GP-0-15-002),* needed to manage runoff per Part II.A.6 or meet sector specific requirements shall be prepared by a *qualified professional.*

C. Signature and *Stormwater* Pollution Prevention Plan Availability

1. Signature/Location - The SWPPP shall be signed in accordance with Appendix H.8 and retained on-site at the facility in accordance with Parts III.A.9 and VI.C. For inactive facilities, the SWPPP may be kept at the nearest office of the *owner or operator*. Failure to keep a copy of the SWPPP as specified above is a violation of the permit.

2. Availability
   a. The *owner or operator* must make a copy of the SWPPP available to the *Department* for review at the time of an on-site inspection.

   b. The *owner or operator* must furnish a copy of the SWPPP within five (5) business days of a Department request in accordance with Appendix H.6.

   c. The *owner or operator* must make a copy of the SWPPP available to the public within fourteen (14) days of receipt of a written request. Copying of documents will be done at the requester's expense. (Note: A facility may withhold justifiable portions of the SWPPP from public review that contain trade secrets, confidential commercial information or critical infrastructure information in accordance with 6 NYCRR 616.7 and 750-1.22).

D. Special SWPPP Requirements

The following additional requirements are applicable for each special circumstance:

1. *Stormwater discharges* into or through *MS4*s.

   a. Facilities covered by this permit must comply with applicable requirements in municipal *stormwater* management programs developed under the *SPDES* permit issued for the *discharge* from the *MS4* that receives the facility's *discharge*, provided that the *owner or operator* has been notified of such conditions.

   b. *Owners or operators* that *discharge* through an *MS4*, or a municipal system designated by the *Department* shall make their SWPPP available to the municipal operator of the *MS4* upon request.

2. *Stormwater discharges* associated with *industrial activity* to *impaired waterbodies*.

   Facilities that are discharging to an *impaired waterbody* and the cause of the impairment is a *pollutant* of concern included in the *benchmarks* and/or numeric effluent limitations (see Appendix G) to which the facility is subject must include the following in their SWPPP:

   a. Identification of *Impaired Waterbody* – Identify any *impaired waterbody* that may receive *stormwater discharges associated with industrial activity* from the facility and the cause of the waterbody's impairment.

   b. *Pollutant(s)* of Concern – A list of *pollutant(s)* or *pollutant parameter(s)* that have been handled, treated, stored or disposed of in a manner that would create the reasonable potential for the *pollutant* of concern causing the impairment to be *discharge*d.

   c. Potential for Presence in *Stormwater* – Identify each area of the facility that generates *stormwater discharges associated with industrial activity* with a reasonable potential to *discharge* the *pollutant(s)* of concern. Factors to consider include the likelihood of the *industrial activity* producing the *pollutant(s)* of concern to have contact with *stormwater* and a history of *reportable* leaks or spills that could result in the *pollutant(s)* of concern being *discharged* to the *impaired waterbody*.

   d. *Stormwater* Controls – The SWPPP shall include a description of the type and location of existing and planned *BMP*s selected for each of the areas where the *pollutant(s)* of concern are exposed to *stormwater*. *BMP*s shall be selected to *minimize* the *pollutant(s)* of concern from being *discharged* to the *impaired waterbody* and should take into consideration all *stormwater* controls listed in Part III.A.7. The SWPPP shall describe how each *BMP* will be implemented for all the areas where the *pollutant(s)* of concern will be exposed to *stormwater*.

E. Keeping SWPPPs Current

The *owner or operator* shall amend the SWPPP whenever:

1. There is a change in design, construction, operation, or maintenance at the facility which may have an effect on the potential for the *discharge* of *pollutants* from the facility which has not otherwise been addressed in the SWPPP; or

2. It is found to be ineffective in eliminating or significantly minimizing *pollutants* from sources identified under Part III.A.3 or is otherwise not achieving the goals or requirements of this permit. The SWPPP shall be modified, and additional monitoring and analysis shall be completed as follows:

a. SWPPP Modifications

(1) Maps or description of industrial activities – If the SWPPP has been found to be inaccurate or incomplete, modifications must be completed to correct the deficiencies identified.

(2) *Stormwater* controls - The modification must identify the corrective actions needed and include a schedule for the implementation with a final date no later than 12 weeks unless the *Department* approves additional time in writing.

(3) Additional inspections monitoring and/or analysis - If the results of inspections, monitoring and/or analysis reveal a violation of this permit, a failure to maintain eligibility for coverage under this permit or a failure to comply with the *benchmarks* or other action levels in this permit, additional inspections, monitoring and/or laboratory analysis of *stormwater* samples may be required. Such requirements are set forth in the applicable Parts.

Part IV – Inspections and Monitoring

A. Comprehensive Site Compliance Inspection & Evaluation

The *owner or operator* shall conduct a comprehensive site compliance inspection at least once per year. The inspections must be done by *a qualified person* who may be either a facility employee or outside consultant hired by the facility. The inspector must be familiar with the *industrial activity*, the *BMPs*, the SWPPP, and must possess the skills to assess conditions at the facility that could impact *stormwater* quality and assess the effectiveness of the *BMPs* that have been chosen to control the quality of the *stormwater discharges*. If more frequent inspections are conducted, the SWPPP must specify the frequency of inspections.

1. Scope of the Compliance Inspection & Evaluation

a. Inspections must include all areas where industrial materials or activities are exposed to *stormwater*, as identified in Part III.A.3, and areas where unauthorized discharges spills and leaks have occurred within the past three years. At a minimum the inspection shall identify or include:

(1) Industrial materials, residue or trash on the ground that could contaminate or be washed away in *stormwater*;

(2) Leaks or spills from industrial equipment, drums, barrels, tanks or similar containers;

(3) Examination of all *outfall* locations, to determine the presence of unauthorized non-*stormwater discharges* or authorized non-*stormwater discharges* that are not certified in accordance with Part III.A.7(f)(1);

(4) Off-site tracking of industrial materials or sediment where vehicles enter or exit the site;

(5) Tracking of material away from the area where it originates including from areas of *no exposure* to exposed areas;

(6) Evidence of, or the potential for, *pollutants* entering or discharging from the drainage system;

(7) Inspection of areas found to be the source of *pollutants* observed during visual and analytical monitoring done during the year;

(8) *Stormwater* BMPs identified in the SWPPP must be observed to ensure that they are operating correctly.

b. If the Comprehensive Site Compliance Inspection indicates the presence of *stormwater* pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators), the *owner or operator* must, implement corrective actions in Part V.

2. Compliance Inspection & Evaluation report

a. A compliance inspection & evaluation report must be made and retained as part of the SWPPP for a period of at least five (5) years from the date of the report. At a minimum, the report must include:

(1) The scope of the inspection (Part IV.A.1),

(2) The name(s) of the person(s) conducting the inspection,

(3) The date(s) of the inspection,

(4) Weather information at the time of the inspection,

(5) Major observations relating to the implementation of the SWPPP, including:

(a) The location(s) of *discharges* of *pollutants* from the site;

(b) The location(s) of previously unidentified *discharges* of *pollutants* from the site;

(c) Any evidence of, or the potential for, pollutants entering the drainage system;

(d) The source of any discharges and actions taken to address newly identified authorized non-stormwater discharges or elimination of non-authorized discharges;

(e) Location(s) of BMPs that need to be maintained;

(f) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;

(g) Location(s) where additional BMPs are needed that did not exist at the time of inspection;

(h) Any incidents of noncompliance. Where an inspection does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the SWPPP and this permit;

(i) Observations regarding the physical condition of and around all outfalls, including any flow dissipation devices; and evidence of pollutants in discharges and/or the receiving water; and,

(j) The required corrective actions to be implemented in accordance with Part V.

b. Credit as a Routine Facility Inspection - Where compliance inspection schedules overlap with routine inspections required under Part IV.B, the comprehensive site compliance inspection may be used as one of the routine inspections.

B. Routine Inspections of BMPs

1. In addition to or as part of the comprehensive site inspection, *a qualified person* must perform routine inspections which include all areas of the facility where industrial materials or activities are exposed to precipitation or *stormwater runoff*. The inspection frequency shall be on a quarterly basis or as specified in the facility's applicable industrial sector in Part VII.

2. The routine inspection must evaluate the performance of *stormwater* BMPs described in the SWPPP.

3. The routine inspection shall be documented and shall be kept with the SWPPP.

4. Any deficiencies in the implementation and/or adequacy of the BMPs must be documented. The required corrective actions must be implemented in accordance with Part V.

C. Annual Dry Weather Flow Inspection

In addition to or as part of the Comprehensive Site Compliance Inspection (Part IV.A), a qualified person must perform an annual dry weather flow inspection and update the non-stormwater discharge certifications (Part III.A.7.f (1)). The requirements and procedures for the annual dry weather flow inspection are applicable to all facilities covered under this permit, regardless of the facility's sector of industrial activity.

1. The *owner or operator* must perform and document at least one dry weather flow inspection each year after at least three (3) consecutive days of no precipitation. The annual dry weather flow inspection shall be conducted to determine the presence of non-stormwater *discharges* to the stormwater drainage system.

2. The annual dry weather flow inspection shall be documented in an inspection report which must include the *outfall* locations, the inspection date and time, inspector name, description of *discharges* identified, the source of any

discharges and actions taken to address any newly identified allowable non-stormwater *discharges* or elimination of non-authorized *discharges*.

3. If a non-stormwater discharge not previously certified in accordance with Part III.A.7.f (1) is discovered the *owner or operator* must implement corrective actions in Part V.B.

4. The dry weather flow inspection report and updated non-stormwater discharge documentation required by Part III.A.7.f (1) must be retained on-site with the SWPPP.

D. Collection and analysis of samples

Samples must be collected as follows:

1. When to Sample

A sample must be taken of the *stormwater discharge* resulting from a *qualifying storm event* with at least 0.1 inch of precipitation (defined as a *measurable storm event*), providing the interval from the preceding measurable storm is at least 72 hours. Each outfall must be sampled except for any outfall for which the facility has claimed a representative outfall waiver in accordance with Part IV.G.3. In the case of snowmelt, samples must be taken during a period with a *discharge* from the site.

The sample must be taken during the first 30 minutes (or as soon as practical, but not to exceed one hour) of the *discharge* at the *outfall*. If the sampled *discharge* mixes with non-*stormwater* water, the *owner or operator* must attempt to sample the *stormwater discharge* prior to mixing.

2. Sample Analysis

a. Monitoring and analysis must be conducted according to test procedures approved under 40 CFR Part 136, or equivalent, unless other test procedures have been specified in this permit.

b. Any laboratory test or sample analysis required by this permit for which the *State* Commissioner of Health issues certificates of approval pursuant to section 502 of the Public Health Law shall be conducted by a laboratory that has been issued a certificate of approval (ELAP certified).

c. The laboratory sample analysis reports must be kept with the SWPPP.

3. Storm event data

The storm event must be documented using the Storm Event Data Form provided by the *Department*. The Storm Event Data Form must be kept with the SWPPP.

4. *Secondary Containment Screening and Sampling*

Prior to each *discharge*[3] from a secondary containment system the *stormwater* must be screened for contamination. (Note: All *stormwater* must be inspected for visible evidence of contamination.) Additional screening methods shall be developed by the *owner or operator* as part of the overall BMP Plan (e.g., the use of volatile gas meters to detect the presence of gross levels of gasoline or volatile organic compounds). If the screening indicates contamination, the *owner or operator* must collect and analyze a representative sample[4] of the *stormwater*. If the sample contains no *pollutants*, the *stormwater* may be *discharge*d. Otherwise it must either be disposed of in an onsite or off-site wastewater treatment plant designed to treat and permitted to *discharge* such wastewater. The first discharge following any cleaned up spill or leak must be sampled regardless of the screening results.

E. Quarterly Visual Monitoring

The requirements and procedures for quarterly visual monitoring are applicable to all facilities covered under this permit, regardless of the facility's *industrial activity*

1. The monitoring must be made at least once in each of the following quarters:
    - January 1st through March 31st,
    - April 1st through June 30th,
    - July 1st through September 30th, and
    - October 1st through December 31st
2. All samples must be collected from *discharges* resulting from a *qualifying storm event*, in accordance with Part IV.D.1.
3. The *owner or operator* must perform and document quarterly visual monitoring of a *stormwater discharge* associated with *industrial activity* from each *outfall* on the *Department* provided form and included with the SWPPP unless:
    a. A waiver is submitted in accordance with Part IV.G, or
    b. There is no *discharge* from a *qualifying storm event* during a monitoring period. If no *qualifying storm event* resulted in runoff from the facility during a monitoring quarter, documentation must be included with the

[3] Note: Discharge includes stormwater discharges and snow and ice removal. If applicable, a representative sample of snow and/or ice should be collected and allowed to melt prior to assessment.

[4] If the stored substance is gasoline or aviation fuel then sample for oil & grease, benzene, ethylbenzene, naphthalene, toluene and total xylenes (EPA method 602). If the stored substance is kerosene, diesel fuel, fuel oil, or lubricating oil then sample for oil & grease and polynuclear aromatic hydrocarbons (EPA method 610). In all cases an estimated discharge volume and pH monitoring is required.

SWPPP. If a visual examination was performed and the storm event was later determined not to be a measurable storm event, the visual examination must be included with the SWPPP.

4. When the *outfall discharges* directly to the *surface waters of the State*, the *discharge* must be inspected to see whether *BMPs* are effective in preventing significant impacts to receiving waters.

5. Laboratory sample analysis is not necessary to fulfill the visual monitoring requirements.

6. If the visual monitoring indicates the presence of *stormwater* pollution (e.g., color, clarity, odor, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators), the *owner or operator* must implement corrective actions in Part V.

F. Monitoring Requirements

The monitoring requirements that apply to a facility depends on the types of industrial activities generating *stormwater* runoff. The *owner or operator* must review this Part and Part VII as well as Appendices C, D, E and G of this permit to determine which monitoring requirements apply to each individual *outfall*.

- At facilities where more than one *industrial activity* occurs, monitoring requirements apply for all parameters specific to those industrial activities.

- Where more than one numeric limitation for a specific parameter applies to a *discharge*, compliance with the more restrictive limitation is required.

- Where monitoring requirements for a monitoring period overlap (e.g., need to monitor TSS twice/year for numeric effluent limitation monitoring and also twice/year for *benchmark monitoring*), a single sample will satisfy both monitoring requirements.

1. Types of Pollutant Monitoring

a. *Benchmark Monitoring* is intended to provide a guideline for the *owner or operator* to determine the overall effectiveness of the SWPPP in controlling the *discharge* of *pollutants* to receiving waters. The requirements for *benchmark monitoring* apply to *discharges* associated with specific industrial activities identified in Part VII (summarized in Appendix C).

b. Numeric *Effluent Limitation* Monitoring – Activity specific effluent limitations specified in Part VII (summarized in Appendix D).

c. *Discharges* to Impaired Waterbodies – If a facility *discharges* to an *impaired waterbody* and the cause of impairment is a *pollutant* of concern included in the benchmarks and/or numeric effluent limitations to which

the facility is subject to in Part VII, the facility is required to conduct the additional sampling requirements detailed in Part IV.F.2 for that particular *pollutant*(s) only. The compliance monitoring for *discharges* to impaired waterbodies is in addition to any applicable sector specific *Benchmark Monitoring* in Part IV.F.1.a and Numeric Effluent Limit Monitoring in Part IV.F.1.b. A summary of the applicable benchmarks and/or numeric effluent limits associated with the *pollutant* of concern to an *impaired waterbody* and their applicable sector is located in Appendix G.

d. Coal Pile Runoff Monitoring - Facilities with *discharges* of *stormwater* from coal storage piles must comply with the limitations and monitoring requirements of Table IV.3 for all *discharges* containing the coal pile runoff, regardless of the facility's sector of *industrial activity*.

e. Secondary Containment at Storage and Transfer Areas - Unless the *discharge* from any containment system outlet is permitted by an *individual SPDES permit* as an *outfall* with explicit effluent and monitoring requirements, the *owner or operator* shall monitor the outlet as follows:

(1) Storage Area Secondary Containment Systems - The volume of each *discharge* from each outlet must be monitored. A representative sample shall be collected of the first *discharge* following any cleaned up spill or leak. The sample must be analyzed for pH, the substance(s) stored within the containment area and any other *pollutants* the *owner or operator* knows or has reason to believe are present.

(2) Transfer Area Secondary Containment Systems - The first *discharge* following any spill or leak must be sampled for flow, pH, the substance(s) transferred in that area and any other *pollutants* the *owner or operator* knows or has reason to believe are present.

2. *Frequency and Timing of Monitoring*

The monitoring requirements for each type of monitoring are provided in Table IV.1 below:

Table IV.1
Monitoring Requirements

Type of Monitoring	Applicability	Frequency	Reported to the *Department*
Quarterly Visual Monitoring	All Facilities	Quarterly	No
Benchmark Monitoring, Numeric *Effluent Limitation* Monitoring, Coal Pile Runoff	Sector Specific	Semi-Annual	Yes
Secondary Containment at Storage and Transfer Areas	Sector Specific	As needed	No
Discharges to Impaired Waterbodies	Waterbody Specific	Quarterly	Yes

The monitoring periods for required monitoring are provided in the Table IV.2 below:

Table IV.2
Monitoring Periods

Monitoring Frequency	Monitoring Periods
Semi-Annual	Period 1 - January 1st through June 30th
	Period 2 - July 1st through December 31st
Quarterly	Quarter 1 – January 1st through March 31st
	Quarter 2 – April 1st through June 30th
	Quarter 3 – July 1st through September 30th
	Quarter 4 – October 1st through December 31st

a. If a facility's permit coverage was effective less than two months from the end of a monitoring period, monitoring begins with the next monitoring period.

b. If a facility is inactive for an entire monitoring period, it may claim a waiver in accordance with Part IV.G.

3. *Monitoring Requirements*

a. The *owner or operator* must perform and document monitoring of *stormwater discharges* associated with *industrial activity* from each *outfall* during the monitoring periods listed in Table IV.2 unless:

(1) A waiver applicable to the specific type of monitoring is submitted in accordance with Part IV.G, or

(2) There is no *discharge* from a *qualifying storm event* during a monitoring period. If no *qualifying storm event* resulted in runoff from the facility during a monitoring period, documentation must be included with the SWPPP.

If a monitoring sample is collected during a storm event that is later determined not to be a qualifying storm event, the results should be included with the SWPPP.

b. Collection and analysis of samples must be done in accordance with Part IV.D.

c. Evaluation of Results of Analysis - The *owner or operator* must refer to the tables found in the individual sectors in Part VII for *benchmark monitoring cut-off concentrations* and numeric effluent limitations.

(1) An exceedance of a Benchmark cut-off concentration is not a permit violation. The exceedance(s) requires the *owner or operator* to evaluate potential sources of *stormwater* contaminants at the facility and perform corrective actions in accordance with Part V.

(2) An exceedance of a Numeric *Effluent Limitation* is a permit violation. If there is an exceedance of one or more parameters the *owner or operator* must perform corrective actions in accordance with Part V.

d. Recording and Reporting Results

(1) Results of Benchmark and Numeric Effluent Limitation monitoring, (including coal pile runoff monitoring), must be reported to the *Department* using a *Discharge Monitoring Report (DMR)* and included with the SWPPP.

(2) Results of monitoring of *discharges* from secondary containment systems must be included with the SWPPP, but are not reported to the *Department*.

e. For monitoring of Coal Pile Runoff, the *owner or operator* must refer to Table IV.3 for numeric effluent limitations.

Table IV.3			
Numeric Limitations for Coal Pile Runoff			
Parameter	**Limit**	**Monitoring Frequency**	**Sample Type**
Total Suspended Solids (TSS)	50 mg/l, daily max	Semi-Annual	Grab
pH	6.0 - 9.0 min. and max	Semi-Annual	Grab

(1) The coal pile runoff must not be diluted with *stormwater* or other flows in order to meet this limitation.

(2) If a facility is designed, constructed and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.

G. Monitoring Waivers

Unless stated otherwise, the following waivers may be applied to any monitoring required under this permit.

1. Adverse Climatic Conditions Waiver - Adverse weather conditions are those that are dangerous or create inaccessibility for personnel. This waiver may be claimed if the only qualifying storm event(s) in a monitoring period created dangerous conditions for personnel, created conditions which made the sample location inaccessible or made collection of a sample impossible. Examples of these conditions include but are not limited to local flooding, high winds and electrical storms. This waiver may not be claimed to indicate that samples were not collected due to inconvenient timing of storms or other failures to collect *stormwater* samples.

   If the Adverse Climatic Conditions Waiver is claimed, an Adverse Climatic Conditions Waiver Form must be signed and submitted to the *Department* with any associated *ACR* or *DMR* in accordance with Appendix H.8 and included with the SWPPP.

2. Inactive and unstaffed sites - An annual Comprehensive Site Inspection (Part IV.A) can be waived at a facility that is inactive and unstaffed for the entire monitoring period if no industrial materials or activities are exposed to *stormwater*. Facilities covered under Sector J are not required to meet the requirement that no materials are exposed to *stormwater*; however adequate *stormwater* controls must be in place to prevent migration of contaminated *stormwater* to surface water. To claim this waiver, the *owner or operator* must:

a. Maintain a certification with the SWPPP stating the dates the site is inactive and unstaffed;

b. Perform and document a Comprehensive Site Inspection prior to shut down. The inspection report must be included in the SWPPP. The certification must include the results of this inspection; and,

c. Complete an Inactive or Unstaffed Waiver Form. When this waiver is being claimed, the waiver form must be signed and submitted with each ACR or DMR and be included with the SWPPP.

3. Representative *outfalls* - If a facility has two or more *outfalls* that have substantially identical *discharges*, the *owner or operator* may sample the *discharge* of one of the *outfalls* and report that the analytical data also applies to the substantially identical *outfall(s)*. Whether or not *discharges* are substantially identical is determined by the similarity of the industrial activities and exposed materials occurring within the drainage area of each *outfall*.

   a. The *owner or operator* must collect a sample from the anticipated "worst case" *outfall*. This is determined by looking at the following indicators:

      (1) Size of drainage area;

      (2) Level of *industrial activity*;

      (3) Amount of exposed industrial materials.

   b. A representative *outfall* waiver may not be claimed at *outfalls* with *discharges* associated with different industrial activities. This representative *outfall* waiver applies to quarterly visual monitoring and *benchmark monitoring*. It cannot be claimed for compliance monitoring for *discharges* subject to *effluent limitation guidelines or to discharges* to *impaired waters*.

   c. When this waiver is being claimed, the *owner or operator* must submit a completed Representative Outfall Waiver Form with the NOI and keep it with the SWPPP.

   d. If there is an event that triggers corrective actions at an *outfall* that represents other substantially identical *outfalls*:

      (1) corrective actions must be completed for all *outfalls* covered by the waiver;

(2) The representative outfall waiver is suspended and quarterly visual monitoring and benchmark monitoring of the substantially identical outfalls shall commence immediately; and,

(3) Unless otherwise notified by the Department, the representative outfall waiver again applies when:

(a) The results of two consecutive monitoring periods reported to the Department show that all outfall have had no exceedances of benchmark monitoring cut-off concentrations for all parameters; and,

(b) The owner or operator submits a new Representative Outfall Waiver Form to the Department.

Part V - Corrective Actions

Failure to document and take the necessary corrective actions are violations of the permit. Continued exceedance of benchmark cut-off concentrations and/or numeric effluent limitations may identify facilities that would be more appropriately covered under an *individual SPDES permit*. If there is an exceedance of either a benchmark or numeric effluent limit at an outfall where a representative outfall waiver has been claimed, the waiver no longer applies and corrective actions must be performed on all outfalls covered by the waiver (Part IV.G.3.d).

A. For *Stormwater Discharges*

When the visual examination indicates the presence of pollution or when the benchmark or numeric effluent limit sample results indicate exceedances of the *pollutants*, the *owner or operator* must:

1. Inspect the facility for potential sources of *stormwater* contamination and/or causes of the exceedance to numeric limits;

2. Implement additional non-structural and/or structural BMPs to address any sources of contamination that are identified to prevent recurrence within the following timeframes:

    a. The implementation must be completed before the next anticipated storm event, if practicable, but not more than 12 weeks after discovery.

    b. If implementation will take longer than 12 weeks, the *owner or operator* must submit a proposed schedule for completion of the project and obtain a written approval from the *Regional Water Engineer (Appendix F)*

3. Revise the facility's SWPPP in accordance with Part III.E; and,

4. Continue efforts to implement additional BMPs at the facility if corrective actions do not result in achieving *benchmark monitoring cut-off concentrations* and/or numeric effluent limitations.

B. For Non-*Stormwater Discharges*

1. If a non-*stormwater discharge* is discovered the *owner or operator* must:

    a. Identify its source and determine whether it is an authorized *discharge*.
    (1) Upon determination that the *discharge* is not covered under this permit or another SPDES permit, the *owner or operator* shall notify the Regional Water Engineer (Appendix F), of the unauthorized *discharge* and begin immediate actions to eliminate the *discharge*. These actions must be documented in the SWPPP.

b. Upon determination that the *discharge* is an authorized non-*stormwater discharge* identified in Part I.B.2 that were not previously certified in accordance with Part III.A.7.f (1), the *owner or operator* shall update the discharge certification and keep with the SWPPP.

C. Corrective Action Documentation

Owners or operators must document the existence of any of the conditions listed in Parts V.A or V.B within 24 hours of becoming aware of such condition. Unless required by Part VI.A.2.b or as requested by the Department, the corrective action documentation is not required to be submitted and should be kept with the facility's SWPPP. Include the following information in your documentation:

a. A description of the condition triggering the need for corrective actions. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of the state, through stormwater or otherwise;

b. Date the condition was identified;

c. The date when each corrective action was initiated and completed (or is expected to be completed);

d. A description of the corrective actions to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any control measures taken to prevent the reoccurrence of such releases (see Part II.A.4); and

e. A statement, signed and certified in accordance with Appendix H.8.

Part VI – Reporting and Retention of Records

A. Reporting to the *Department*

1. Annual Certification Report (ACR)

a. An *owner or operator* of a facility must submit an ACR, which is signed in accordance with Appendix H.8, to the *Department.*

(1) Prior to December 20, 2020, the *owner or operator* may elect to submit the ACR by mailing a paper form to the address listed in Part VI.A.4 or by using the *Department*'s online ACR.

(2) Beginning December 21, 2020 and in accordance with the EPA's *NPDES* Electronic Reporting Rule, the *owner or operator* must submit the ACR electronically using the *Department*'s online ACR. Both versions of the ACR are located on the *Department*'s website (http://www.dec.ny.gov/).

b. The ACR is the primary mechanism for reporting compliance with permit conditions to the *Department*. Every facility covered by this general permit must complete and submit an ACR form in accordance with the deadlines below:

(1) Owners or operators must complete and submit an ACR covering January 1 to December 31. This ACR must be received by the Department on an annual basis by January 28 of the following calendar year except:

(a) For facilities whose initial permit coverage is effective prior to October 1 of a calendar year, the initial ACR will cover the effective coverage date to December 31. This initial ACR must be received by the Department by January 28 of the following calendar year. Subsequent ACRs must be submitted in accordance with Part VI.A.1.b.(1).

(b) For facilities whose initial permit coverage is effective after October 1 of a calendar year, the initial ACR will cover January 1 to December 31 of the following calendar year. This initial ACR must be received by the Department by January 28 of the next year. Subsequent ACRs must be submitted in accordance with Part VI.A.1.b.(1).

2. Discharge Monitoring Report (DMR)

a. The owner or operator with Benchmark and/or Numeric Effluent Limitation monitoring requirements shall electronically submit the results of the analysis using EPA's electronic DMR reporting system. All DMRs must be

received by the Department 28 days after the end of the monitoring period. Monitoring periods can be found in Table IV.1.

b. Using forms provided by the Department, the owner or operator must report the following information when there is an exceedance of a numeric effluent limit (non-compliance event) or exceedance of a benchmark cutoff concentration of the impairing POC for discharges to impaired waterbodies:

(1) Description of the exceedance and its cause

(2) Corrective actions taken to address the exceedance

(3) Preventative (long term) corrective actions taken including any SWPPP modifications to prevent a future exceedance.

(4) Corrective actions taken for all outfalls claiming the representative outfall waiver.

3. Additional reporting

a. In addition to filing the ACRs and DMRs with the Department, and upon request of the MS4 Operator, owners or operators with at least one stormwater discharge associated with industrial activity through the MS4, must submit signed copies of ACRs and DMRs for those outfalls to the MS4 Operator.

b. Any spill of a hazardous substance must be reported in accordance with 6 NYCRR 597.4. Any spill of Petroleum must be reported in accordance with 6 NYCRR 613.6 or 17 NYCRR 32.3. Notification must be reported to the NYSDEC Spills hotline (1-800-457-7362) within two hours after discovery. Additional notifications may be required for Federal level notification through the National Response Center (NRC) at 1-800-424-8802. Where a release of Hazardous Substances or Petroleum enters an *MS4,* the *owner or operator* shall also notify the *owner* of the *MS4* within 2 hours after discovery.

4. Mailing Address

Paper submissions of reports or waivers allowed by this permit or regulation must be submitted to:

Stormwater Compliance Coordinator
NYSDEC, Bureau of Water Compliance
625 Broadway
Albany, New York 12233-3506

B. Monitoring Reporting Submission Deadlines

Every facility covered by this general permit must complete and submit all applicable monitoring reports by the submission deadlines listed in the table below.

Table VI.1 Monitoring/Report Submission Deadlines	
Monitoring type	**Submission Deadline**
Visual Monitoring	Retain documentation on-site with SWPPP.
Comprehensive Site Compliance Inspection	Retain documentation on-site with SWPPP.
Annual Certification Report	Report must be received in the *Department*'s Central Office no later than January 28 of the year following the reporting period. (See Part VI.A.1)
Benchmark Monitoring, Coal Pile Run-off, Numeric *Effluent Limitation* Monitoring	Period 1 - *DMR* must be received electronically using EPA's electronic reporting system no later than July 28 following the end of reporting Period 1 - January 1 to June 30.
	Period 2 - *DMR* must be received electronically using EPA's electronic reporting system no later than January 28 following the end of reporting Period 2 - July 1 to December 31.
Monitoring for Bulk Storage and Loading/Unloading Areas	Retain documentation on-site with SWPPP.
Discharge from Secondary Containment	Retain logbook of *discharges*, including the screening method, results of screening; date, time and volume of each *discharge*; and the personnel supervising each *discharge*.
Monitoring for *Discharges* to Impaired Waterbodies	*DMR* must be received electronically using EPA's electronic reporting system no later than 28 days following the end of the reporting period. See Tables IV.1 and IV.2
Non-Compliance Event Form for Exceedances of Numeric Effluent Limits	Results of the exceedance(s) and corrective action(s) taken must be reported on the Non-Compliance Event Form provided by the Department with the submission of the DMR which reports the exceedance. (Part VI.A.2.b)
Corrective Action Documentation for facilities that do not discharge to an impaired waterbody	Retain documentation on-site with SWPPP. (Part V.C)
Corrective Action Form for facilities that have an exceedance of a Benchmark cut-off concentration to an impaired waterbody	Results of the exceedance(s) and corrective action(s) taken must be reported on the Correcctive Action Form provided by the Department with the submission of the DMR which reports the exceedance. (Part VI.A.2.b)

C. Retention of Records

All records required by this permit must be retained to meet the timeframes specified below:

1. Administrative Records

The *owner or operator* must retain a copy of the NOI, NOT, Acknowledgment Letters and the SWPPP, for a period of at least five (5) years from the date that the *Department* receives a complete NOT submitted in accordance with Part I.E of this permit.

2. Monitoring Activities

The *owner or operator* shall retain records of all monitoring information for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by written request of the *Department*, provided that the extension is necessary to implement the provisions of this Part or *ECL* and that the reason or reasons for the extension are provided in the request.

a. The monitoring information shall include:
   (1) Records of all data used to complete the application for the permit;
   (2) Copies of all reports required by this permit.

b. Data to include with the records of monitoring information:
   (1) The date, exact place, and time of sampling or measurements;
   (2) The individual(s) who performed the sampling or measurements;
   (3) The date(s) analyses were performed;
   (4) The individual(s) who performed the analyses;
   (5) The analytical techniques or methods used;
   (6) The results of such analyses; and
   (7) Quality assurance/quality control documentation.

c. When records are stored electronically, the records must be preserved in a manner that reasonably assures their integrity and are acceptable to the *Department*. Such records must also be in a format which is accessible to the *Department*.

d. The *owner or operator* shall make available to the *Department* for inspection and copying or furnish to the *Department* within 25 business days of receipt of a *Department* request for such information, any information retained in accordance with Part VI.C.2.a and b.

Part VII – Sector Specific Permit Requirements

The *owner or operator* must comply with the additional requirements of Part VII that apply to the specific *industrial activity* located at the *owner or operator's* facility. These requirements are in addition to the general requirements specified in the previous sections of this permit. The industry specific requirements are broken down into sections referred to as industrial sectors A through AC.

If the facility has more than one *industrial activity* meeting the description(s) of more than one sector occurring on-site, those industrial activities are considered to be *co-located*. *Stormwater discharges* from *co-located industrial activities* are authorized by this permit, provided that the *owner or operator* complies with any and all of the requirements applicable to each *industrial activity* at the facility. The monitoring and SWPPP terms and conditions of this permit are additive for *industrial activities* being conducted at a facility.

Examples of common *co-located industrial activities* include, but are not limited to:

- Timber Products (Sector A) and vehicle maintenance (Sector P)
- Auto salvage (Sector M) and auto recycling (Sector N)
- Mineral mining (Sector J) and maintenance of vehicles and equipment (Sector P)
- Mineral mining (Sector J) and asphalt manufacturing (Sector D)
- Mineral mining (Sector J) and concrete manufacturing (Sector E)
- Transfer stations accepting recyclables (Sector N) and maintenance of vehicles used in local trucking without storage (Sector P)
- Manufacturers of food and kindred products (Sector U) and maintenance of vehicles used in local or long distance trucking (Sector P)

Sector S – Air Transportation

Applicability	The requirements listed under this section apply to *stormwater discharges associated with industrial activity* from air transportation facilities including • air transportation (scheduled and non-scheduled); • air courier services; • airports; • flying fields (except those maintained by aviation clubs); • air terminal services including air traffic control (except government); • aircraft storage at airports; • aircraft upholstery repair; • airfreight handling at airports; • airport hangar rental; • airport leasing, if operating airport; • airport terminal services; • hangar operation; • airport, aircraft service and maintenance including aircraft cleaning and janitorial service; • aircraft servicing /repairing (except on a factory basis); • vehicle maintenace shops; • material handling facilities; • equipment clearing operations; and • airport/aircraft deicing and anti-icing. [Note: For the purpose of this section, the term "deicing" is defined as the process to remove frost, snow, or ice and "anti-icing" is the process which prevents the accumulation of frost, snow, or ice.] Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or deicing/anti-icing operations are addressed under this section.
Prohibitions Non -*Stormwater discharges*	In addition to the general non-*stormwater* prohibition in Paragraph I.D.1, the following *discharges* not covered by this permit include, but are not limited to: • aircraft, ground vehicle, runway and equipment washwaters, and • dry weather *discharges* of deicing/anti-icing chemicals. These *discharges* must be covered by a separate *SPDES* permit.

SWPPP Requirements in addition to Part III	
General	Air transportation facilities often have more than one operator who could *discharge stormwater* associated with *industrial activity*. For the purposes of this permit Owners or Operators include the airport authority and airport tenants., tenants Tenants of the airport facility include airline passenger or cargo companies, fixed based *owners or operators* and other parties who have contracts with the airport authority to conduct business operations on airport property and whose operations result in *stormwater discharges* associated with *industrial activity*. SWPPPs developed for areas of the facility occupied by tenants of the airport shall be integrated with the comprehensive SWPPP for the entire airport. As applicable, the comprehensive SWPPP must clearly specify the MSGP requirements to be complied with by the: • Airport authority for itself; • Airport authority on behalf of its tenants; • Tenants for themselves For each activity that an *owner or operator* conducts on behalf of another *owner or operator*, the SWPPP must describe a process for reporting results to the latter operator and for ensuring appropriate follow-up by all affected operators.
Site Map	The site map shall identify where any of the following activities may be exposed to precipitation/surface runoff: • Aircraft and runway deicing/anti-icing operations; • Fueling stations; • Aircraft, ground vehicle and equipment maintenance/cleaning areas; • Storage areas for aircraft, ground vehicles and equipment awaiting maintenance.
Summary of Potential *Pollutant* Sources	A narrative description of the potential *pollutant* sources from the following activities: • aircraft, runway, ground vehicle and equipment maintenance and cleaning; • aircraft and runway deicing/anti-icing operations (including apron and centralized aircraft deicing/anti-icing stations, runways, taxiways and ramps). Facilities that conduct deicing/anti-icing operations shall maintain a record of the types (including the Material Safety Data Sheets (MSDS)) and monthly quantities of deicing/anti-icing chemicals used, either as measured amounts, or in the absence of metering, as estimated amounts. This includes all deicing/anti-icing chemicals, not just glycols and urea (e.g., potassium acetate). Tenants and fixed-base operators who conduct deicing/anti-icing operations shall provide the above information to the airport authority for inclusion in the *stormwater* pollution prevention plan for the entire facility.

Additional Non-Numeric Effluent Limits	
Good Housekeeping Measures	
Aircraft, ground vehicle and equipment maintenance areas	The SWPPP must describe and provide for implementation of measures that prevent or *minimize* the contamination of *stormwater* runoff from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangars). The SWPPP must document consideration of the following measures (or their equivalents):: • Performing maintenance activities indoors; • Maintaining an organized inventory of materials used in the maintenance areas • Draining all parts of fluids prior to disposal • Preventing the practice of hosing down the apron or hangar floor • Using dry cleanup methods • Collecting the *stormwater* runoff from the maintenance area • Providing treatment or recycling
Aircraft, ground vehicle and equipment cleaning areas	The SWPPP shall include provisions that ensure that cleaning of equipment is conducted in designated areas only and clearly identify these areas on the ground and delineate them on the site map. The plan must describe measures that will be implemented to prevent or *minimize* the contamination of the *stormwater* runoff from cleaning areas.
Aircraft, ground vehicle and equipment storage areas	The storage of aircraft, ground vehicles and equipment awaiting maintenance must be confined to designated areas (delineated on the site map). The SWPPP shall document consideration of the following *BMPs* (or their equivalents): • Indoor storage of aircraft and ground vehicles • Use of drip pans for the collection of fluid leaks • Perimeter drains, dikes or berms surrounding storage areas.
Material storage areas	The SWPPP must describe and provide for implementation of measures that prevent or *minimize* contamination of precipitation/runoff from storage areas. Storage vessels of all materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) must be maintained in good condition, so as to prevent or *minimize* contamination of *stormwater*, and plainly labeled (e.g., "used oil," "Contaminated Jet A," etc.). The SWPPP shall document consideration of the following *BMPs* (or their equivalents): • Indoor storage of materials • Centralized storage areas for waste materials • Installation of berms/dikes around storage areas.

Airport Fuel System and Fueling Areas	The SWPPP must describe and provide for implementation of measures that prevent or *minimize* the *discharge* of fuels to the storm sewer/surface waters resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. The SWPPP shall document considerations of the following *BMPs* (or their equivalents): • Implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations) • Using dry cleanup methods • Collecting the *stormwater* runoff
Source Reductions	
Owners or operators who conduct deicing/anti-icing operations shall consider alternatives to the use of urea and glycol-based deicing/anti-icing chemicals to reduce the aggregate amount of deicing/anti-icing chemicals used and/or lessen the environmental impact. Chemical options to replace ethylene glycol, propylene glycol and urea include: potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.	
Runway Deicing Operations	*Owners or operators* shall evaluate present application rates to ensure against excessive over application by analyzing application rates and adjusting as necessary, consistent with considerations of flight safety. The SWPPP shall document considerations of the following *BMPs* (or their equivalents): • Metered application of chemicals; • Prewetting dry chemical constituents prior to application; • Installation of runway ice detection systems; • Implementing anti-icing operations as a preventive measure against ice buildup; • Product substitution; • Heating sand
Aircraft deicing/anti icing operations	*Owners or operators* shall determine whether excessive application of deicing/anti-icing chemicals occurs, and adjust as necessary, consistent with considerations of flight safety. This evaluation should be carried out by the personnel most familiar with the particular aircraft and flight operations in question (versus an outside entity such as the airport authority). The use of alternative deicing/anti-icing agents, as well as containment measures for all applied chemicals, shall be considered. The SWPPP shall document considerations of the following *BMPs* (or their equivalents) for reducing deicing fluid: • Forced-air deicing systems • Computer-controlled fixed-gantry systems • Infrared technology • Hot water • Varying glycol content to air temperature • Enclosed-basket deicing trucks

	• Mechanical methods • Solar radiation • Hangar storage • Aircraft covers • Thermal blankets for MD-80s and DC-9s • Ice-detection systems • Airport traffic flow strategies • Departure slot allocation systems
Management of runoff	Where deicing/anti-icing operations occur, *owners or operators* shall describe and implement a program to control or manage contaminated runoff to *minimize* the amount of *pollutants* being *discharge*d from the site. The SWPPP shall document consideration of the following *BMPs* (or their equivalents): • Establish a dedicated deicing facility with a runoff collection/recovery system; • Use vacuum/collection trucks; • Store contaminated *stormwater*/deicing fluids in tanks and releaseing controlled amounts to a publicly owned treatment works in accordance with pretreatment program requirements • Collect contaminated runoff in a wet pond for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations) • Direct runoff into vegetative swales or other infiltration measures. • Recover deicing/anti-icing materials when these materials are applied during nonprecipitation events (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains, etc.) to prevent these materials from later becoming a source of *stormwater* contamination. • Recycle used deicing fluid whenever possible
Inspections	The inspection frequency shall be specified in the SWPPP. At a minimum, inspections shall be conducted once per month during deicing/anti-icing season (e.g., October through April for most airports). If deicing occurs before or after this period, the inspections shall be expanded to include all months during which deicing chemicals may be used. If significantly or deleteriously large quantities of deicing chemicals are being spilled or *discharge*d, or if water quality impacts have been reported, the inspection frequency shall be increased to weekly until such time as the chemical spills/*discharges* or impacts are reduced to acceptable levels.

Comprehensive site compliance inspection

The annual site compliance evaluations shall be conducted by qualified facility personnel during periods of actual deicing operations, if possible. If not practicable during active deicing or if the weather is too inclement, the evaluations shall be conducted when deicing operations are likely to occur and the materials and equipment for deicing are in place.

Numeric Effluent Limitations

Airfield Pavement Deicing

For both existing and new "primary airports" (as defined at 40 CFR 449.2) with 1,000 or more annual non-propeller aircraft departures that *discharge stormwater* from airfield pavement deicing activities, there shall be no *discharge* of airfield pavement deicers containing urea. To comply with this limitation, such airports must do one of the following: (1) certify annually on the annual report that you do not use pavement deicers containing urea, or (2) meet the effluent limitation in Table VII.S-1.

Aircraft Deicing

Airports that are both "primary airports" (as defined at 40 CFR 449.2) and new sources ("new airports") with 1,000 or more annual non-propeller aircraft departures must meet the applicable requirements for aircraft deicing at 40 CFR 449.11(a). *Discharges* of the collected aircraft deicing fluid directly to waters of the U.S. are not eligible for coverage under this permit.

Monitoring, Reporting and Recordkeeping. For new and existing airports subject to the effluent limitations above, you must comply with the applicable monitoring, reporting and recordkeeping requirements outlined in 40 CFR 449.20.

Table VII-S-1.
Sector S - Numeric Effluent Limitations

Industrial Activity	Parameter	Effluent Limit
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures.	Ammonia as Nitrogen	14.7 mg/L daily maximum

Benchmarks

Airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis shall sample their *stormwater discharges* for the parameters listed in Table VII-S-12. Only those *outfalls* from the airport facility that collect runoff from areas where deicing/anti-icing activities occur must be monitored (SIC 4512-4581).

Table VII-S-2
Sector S - *Benchmark Monitoring* Requirement

***Pollutants* of Concern**	***Benchmark Monitoring* Cut-off Concentration**
Biochemical Oxygen Demand (BOD5)	30 mg/L
Chemical Oxygen Demand (COD)	120 mg/L
Total Nitrogen (TN)*	6 mg/L
pH	within the range 6.0 to 9.0 s.u.

* Total Nitrogen is calculated as the sum of ammonia, nitrate-nitrite and organic nitrogen

Appendix A – Definitions and Acronyms

Acronyms

ACR – Annual Certification Report
BOD5 – Biochemical Oxygen Demand (5-day test)
BMP – Best Management Practice
BAT – Best Available Technology Economically Achievable
BPT - Best Practicable Technology
CBS - Chemical Bulk Storage
CFR – Code of Federal Regulations
COD – Chemical Oxygen Demand
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DMR – Discharge Monitoring Report
ECL - Environmental Conservation Law
ELG – Effluent Limitations Guidelines
EPA – U. S. Environmental Protection Agency
EPCRA – Emergency Planning and Community Right-to-know Act
MDL - Method Detection Limit
MGD – Million Gallons per Day
MS4 – Municipal Separate Storm Sewer System
MSGP – Multi-Sector General Permit
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NRC – National Response Center
NTU – Nephelometric Turbidity Unit
PBS - Petroleum Bulk Storage
PQL - Practical Quantitation Limit
RCRA – Resource Conservation and Recovery Act
RQ – Reportable Quantity
SIC – Standard Industrial Classification
SPCC – Spill Prevention, Control, and Countermeasure
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
TSS – Total Suspended Solids
USGS – United States Geological Survey

Definitions

Note: Additional definitions are provided within the Part VII industrial sectors for definitions that are specific for those industries.

Annual Certification Report (ACR) - is the primary mechanism for reporting to the *Department*. Every facility covered by this general permit must complete and submit an *ACR* form in accordance with the submission deadlines in Part VI.B -Table VI.1.

Alternative General Permit - is a general permit different from the MSGP that covers some or all of the authorized discharges.

Best Management Practices (BMPs) - means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the *State*. *BMP*s also include treatment requirements (if determined necessary by the *owner or operator*), operating procedures, and practices to control plant site runoff, spillage and leaks, sludge or waste disposal, or drainage from raw material storage.

Benchmark Monitoring – means sampling and analyses of *stormwater discharges* for parameters specified in Part VII for specific sectors.

Benchmark Monitoring Cut-off Concentrations – means *pollutant* levels that are intended to provide a guideline for the *owner or operator* to determine the overall effectiveness of the SWPPP in controlling the *discharge* of *pollutants* to receiving waters. The *benchmark* concentrations do not constitute direct *effluent limitations*. Therefore, a *benchmark* exceedance is not a permit violation in and of itself. It does, however, signal the need for the *owner or operator* to evaluate potential sources of *stormwater* contaminants at the facility.

Best Practicable Control Technology Currently Available (BPT) – means the first level of technology-based standards established by the CWA to control *pollutants discharge*d to waters of the U.S. BPT effluent limitations guidelines are generally based on the average of the best existing performance by plants within an industrial category or subcategory.

Co-located Industrial Activities - occurs when a facility has industrial activities included in more than one industrial sector. *Stormwater discharges* from co-located activities must comply with requirements for all relevant sectors.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)"* also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction SWPPP – as defined per the NYSDEC SPDES General Permit for *Stormwater* Discharges from Construction Activity, GP-0-15-002.

Control Measure - refers to any BMP *stormwater* control or other method (including *non-numeric effluent limitations*) used to prevent or reduce the *discharge* of *pollutants* to *waters of the United States*.

Corrective Action - any action taken, or required to be taken, to (1) repair, modify, or replace any control measure used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

Department - means the New York State *Department* of Environmental Conservation as well as meaning the *Department*'s designated agent.

Discharge(s) - means any addition of any *pollutant* to *waters of the State* through an outlet or *point source*.

Discharge Authorized by a *SPDES* Permit - means *discharges* of wastewater or *stormwater* from sources listed in the permit, that do not violate *ECL* Section 17-0501, that are through *outfalls* listed in the permit, and that are:

1. *discharges* within permit limitations of *pollutants* limited in the *SPDES* permit;

2. *discharges* within permit limitations of *pollutants* limited by an indicator limit in the *SPDES* permit;

3. *discharges* of *pollutants* subject to action level requirements in the *SPDES* permit;

4. *discharges* of *pollutants* not explicitly listed in the *SPDES* permit, but reported in the *SPDES* permit application record as detected in the *discharge* or as something the *permittee* knows or has reason to believe to be present in the *discharge*, provided the special conditions section of the applicable *SPDES* permit does not otherwise forbid such a *discharge* and provided that such *discharge* does not exceed, by an amount in excess of normal effluent variability, the level of *discharge* that may reasonably be expected for that *pollutant* from information provided in the *SPDES* permit application record;

5. *discharges* of *pollutants* not required to be reported on the appropriate and current New York State *SPDES* permit application; provided the special conditions section of the permit does not otherwise forbid such a *discharge*. The *Department* may, in accordance with law and regulation, modify the permit to include limits for any *pollutant* even if that *pollutant* is not required to be reported on the *SPDES* permit application; or

6. Non-stormwater *discharges* listed in Part 750-1.2(a)(29)(vi), with the following exception:

    - Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned.

Discharge Monitoring Report (DMR) - means a report submitted by the *owner or operator* to the *Department* summarizing the effluent monitoring results obtained by the *owner or operator* over periods of time as specified in the *SPDES* permit.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the *Environmental Conservation Law*.

Effluent Limitation - means any restriction on quantities, quality, rates and concentrations of chemical, physical, biological, and other constituents of effluents that are *discharge*d into waters of the *State*.

Effluent Limitation Guideline (ELG) - means toxic or pretreatment *effluent limitations* contained in 40 CFR Parts 405 to 471 (see 6 NYCRR 750-1.24 of this Part).

General *SPDES* permit - means a *SPDES* permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of *discharges*.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Groundwater - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

High Volume Hydraulic Fracturing – means the stimulation of a well using 300,000 gallons or more of water as the primary carrier fluid or base fluid in the hydraulic fracturing fluid for well completion.

Hotspot – Area where land use or activities generate highly contaminated runoff, with concentrations of *pollutants* in excess of those typically found in stormwater.

Impaired Water (or "Impaired Waterbody" or "Impaired Waterbodies") - A water is impaired if it is determined that it does not meet applicable water quality standards, which are adopted for each water class to protect the best uses designated for that class. Impaired waters are those waters 1) identified on the 2016 New York State Section 303(d) List of *Impaired/TMDL* Waters, or 2) designated as an Integrated Reporting Category (IRC) 4a or 4b waters. An IRC 4a water is an impaired water for which a TMDL to address the impairing *pollutant*/cause has been established. An IRC 4b water is an impaired water where a TMDL is not necessary because other required control measures are expected to result in restoration in a reasonable period of time.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds

Individual *SPDES* Permit - means a *SPDES* "permit" issued to a single facility in one location in accordance with this Part (as distinguished from a general *SPDES* permit).

Industrial Activity - the 11 categories of industrial activities included in the definition of "*stormwater discharges* associated with *industrial activity*."

Industrial *Stormwater* - *stormwater* runoff associated with the definition of "*stormwater discharges* associated with *industrial activity*."

Industrial Waste - means any liquid, gaseous, solid or waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resources, which may cause or might reasonably be expected to cause pollution of the *waters of the State* in contravention of the standards adopted as provided herein.

Measurable Storm Event - a storm event with at least 0.1 inch of precipitation that produces runoff.

Method Detection Limit - means the level at which the analytical procedure referenced is capable of determining with a 99 percent probability that the substance is present. The precision at this level is plus or minus 100 percent.

Minimize – means reduce and/or eliminate to the extent achievable using *control measures* (including *BMPs*) that are technologically available and economically practicable and achievable in the light of best industry practice.

Municipality - means any county, town, city, village, district corporation, special improvement district, sewer authority or agency thereof.

Municipal Separate Storm Sewer System (MS4)- a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. Owned or operated by a *State*, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to *State* law) having jurisdiction over disposal of sewage, *industrial wastes*, *stormwater*, or other wastes, including special districts under *State* law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that *discharges* to *waters of the United States*;

2. Designed or used for collecting or conveying *stormwater*;

3. Which is not a combined sewer; and

4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National *Pollutant* Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and *stormwater* permits under the Federal Water Pollution Control Act (Clean Water Act).

No exposure - all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff.

Outfall - means the terminus of a sewer system, or the point of emergence of any waterborne sewage, *industrial waste* or other wastes or the effluent therefrom, into the waters of the *State*.

Owner or Operator - means the *owner or operator* of any facility or activity subject to regulation under 6 NYCRR Part 750. In accordance with 6 NYCRR Part 750-1.6(a), when a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit

Person or Persons - means any individual, public or private corporation, political subdivision, government agency, *municipality*, partnership, association, firm, trust, estate or any other legal entity whatsoever.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharge*d.

Pollutant(s) - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast *discharge*d into water; which may cause or might reasonably be expected to cause pollution of the *waters of the State* in contravention of the standards or guidance values adopted as provided in Parts 700 et seq of this Title.

Primary Industrial Activity - The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged. In situations where the vast majority of on-site activity falls within one SIC code, that activity may be the *primary industrial activity*. The primary industrial determination is based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared.

Qualified Person - A qualified person may be either a facility employee or hired consultant who is familiar with the day-to-day operations associated with their assigned responsibilities at the facility. The qualified person possesses the knowledge and skills to assess conditions, operations and activities at the facility that could impact stormwater quality and can evaluate the effectiveness of control measures being implemented as part of the requirements of the permit. The owner/operator may designate more than one individual as the qualified person.

If the control measures include Erosion and Sediment controls, then the person selected to inspect the erosion & sediment controls must be knowledgeable in the principles and practices of erosion and sediment control and must receive four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the qualified person shall receive four (4) hours of training, every three (3) years.

Note: Inspections of any post-construction *stormwater* management practices that include structural components, such as a dam for an impoundment, shall be performed by a Qualified Professional.

Qualified Professional - means a person that is knowledgeable in the principles and practices of *stormwater* management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other *Department* endorsed individual(s). Individuals preparing SWPPPs that require the post-construction *stormwater* management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the *Department*'s technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article

145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Qualifying Storm Event – a storm event with at least 0.1 inch of precipitation (defined as a "measurable" event), providing the interval from the preceding measurable storm is at least 72 hours. The 72-hour storm interval is waived if the preceding measurable storm did not result in a *stormwater discharge* (e.g., a storm events in excess of 0.1 inches may not result in a *stormwater discharge* at some facilities), or if the *owner or operator* is able to document that less than a 72 hour interval is representative for local storm events during the sampling period.

Reportable Quantity Release - a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts110, 177, and 302 for complete definitions and reportable quantities for which notification is required.

Runoff Coefficient - the fraction of total rainfall that will appear at the conveyance as runoff.

Run-on - sources of stormwater that drain from land located upslope or upstream from, and adjacent to, the facility.

Significant Materials - includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with *stormwater discharges*.

State - means the State of New York.

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the *ECL* and this Part for issuance of permits authorizing *discharges* to the waters of the *State*.

Stormwater - means that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the *State*.

Stormwater Discharges Associated with Industrial Activity - the *discharge* from any conveyance that is used for collecting and conveying *stormwater* and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include *discharges* from facilities or activities excluded from the *NPDES* program under Part 122. For the categories of industries identified in this

section, the term includes, but is not limited to, *stormwater discharges* from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR Part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where *industrial activity* has taken place in the past and *significant materials* remain and are exposed to *stormwater*. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with *stormwater* drained from the above described areas. Industrial facilities include those that are federally, *State*, or municipally owned or operated that meet the description of the facilities listed in Appendix D of this permit. The term also includes those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v).

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the *State* of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the *State* or within its jurisdiction. Waters of the *State* are further defined in 6 NYCRR Parts 800 to 941.

Technical Standards – means the New York State *Stormwater* Management Design Manual (2015) and New York State Standards and Specifications for Erosion and Sediment Control (2016).

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single *pollutant* from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the *pollutant*'s sources. A TMDL stipulates waste load allocations (WLAs) for *point source discharges*, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Waters of the United States - means:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

2. All interstate waters, including interstate "wetlands";

7. All other waters, such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such waters:

    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;

    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

    c. Which are or could be used for industrial purposes by industries in interstate commerce;

    d. All impoundments of waters otherwise defined as *waters of the United States* under this definition;

    e. Tributaries of waters identified in paragraphs (1) through (4) of this definition;

    f. The territorial sea; and

    g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1 through 6 of this definition.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

Appendix B - Sectors of Industrial Activity Covered by this Permit

SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT	
Activities Consistent with Descriptions and SIC Code or Activity Code	**Activity Represented**
Sector A: Timber Products	
2411	Log Storage and Handling (Wet deck storage areas are only authorized if no chemical additives are used in the spray water or applied to the logs).
2421	General Sawmills and Planning Mills
2426	Hardwood Dimension and Flooring Mills
2429	Special Product Sawmills, Not Elsewhere Classified
2431-2439 (except 2434 - see Sector W)	Millwork, Veneer, Plywood, and Structural Wood
2441, 2448, 2449	Wood Containers
2451, 2452	Wood Buildings and Mobile Homes
2491	Wood Preserving
2493	Reconstituted Wood Products
2499	Wood Products, Not Elsewhere Classified
Sector B: Paper and Allied Products	
2611	Pulp Mills
2621	Paper Mill
2631	Paperboard Mills
2652-2657	Paperboard Containers and Boxes
2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
Sector C: Chemical and Allied Products	
2812-2819	Industrial Inorganic Chemicals
2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass
2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; In Vitro and In Vivo Diagnostic Substances; Biological Products, Except Diagnostic Substances
2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
2861-2869	Industrial Organic Chemicals
2873-2879	Agricultural Chemicals
2891-2899	Miscellaneous Chemical Products
2911	Petroleum Refineries
3952 (limited to list)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors

SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT (Continued)	
Activities Consistent with Descriptions and SIC Code or Activity Code	**Activity Represented**
Sector D: Asphalt Paving and Roofing Materials and Lubricants	
2951, 2952	Asphalt Paving and Roofing Materials
2992, 2999	Miscellaneous Products of Petroleum and Coal
Sector E: Glass Clay, Cement, Concrete, and Gypsum Products	
3211	Flat Glass
3221, 3229	Glass and Glassware, Pressed or Blown
3231	Glass Products Made of Purchased Glass
3241	Hydraulic Cement
3251-3259	Structural Clay Products
3261-3269	Pottery and Related Products
3271-3275	Concrete, Gypsum and Plaster Products
3281	Cut Stone and Stone Products
3291-3299	Abrasive, Asbestos, and Miscellaneous Non-metallic Mineral Products
Sector F: Primary Metals	
3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
3321-3325	Iron and Steel Foundries
3331-3339	Primary Smelting and Refining of Nonferrous Metals
3341	Secondary Smelting and Refining of Nonferrous Metals
3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
3363-3369	Nonferrous Foundries (Castings)
3398, 3399	Miscellaneous Primary Metal Products
Sector G: Metal Mining (Ore Mining and Dressing)	
1011	Iron Ores
1021	Copper Ores
1031	Lead and Zinc Ores
1041, 1044	Gold and Silver Ores
1061	Ferroalloy Ores, Except Vanadium
1081	Metal Mining Services
1094, 1099	Miscellaneous Metal Ores
Sector H: [Reserved]	
Sector I: Oil and Gas Extraction and Refining	
1311	Crude Petroleum and Natural Gas
1321	Natural Gas Liquids
1381-1389	Oil and Gas Field Services

SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT (Continued)	
Activities Consistent with Descriptions and SIC Code or Activity Code	**Activity Represented**
Sector J: Mineral Mining and Dressing	
1411	Dimension Stone
1422-1429	Crushed and Broken Stone, Including Rip Rap
1442, 1446	Sand and Gravel
1455, 1459	Clay, Ceramic, and Refractory Materials
1474-1479	Chemical and Fertilizer Mineral Mining
1481	Nonmetallic Minerals Services, Except Fuels
1499	Miscellaneous Nonmetallic Minerals, Except Fuels
Sector K: Hazardous Waste Treatment, Storage, or Disposal Facilities	
HZ	Hazardous Waste Treatment Storage or Disposal
Sector L: Landfills and Land Application Sites	
LF	Landfills, Land Application Sites, and Non-Compliant Landfills
Sector M: Automobile Salvage Yards	
5015	Automobile Salvage Yards
Sector N: Scrap Recycling Facilities	
5093	Scrap Recycling Facilities, Including Transfer Stations Accepting Household Recyclables
4499 (limited to list)	Dismantling Ships, Marine Salvaging, and Marine Wrecking - Ships For Scrap
Sector O: Steam Electric Generating Facilities	
SE	Steam Electric Generating Facilities
Sector P: Land Transportation and/or Warehousing	
4011, 4013	Railroad Transportation
4111-4173	Local and Highway Passenger Transportation
4212-4231	Motor Freight Transportation and/or Warehousing
4311	United States Postal Service
5171	Petroleum Bulk Stations and Terminals
Sector Q: Water Transportation	
4412-4499(except 4499 facilities as specified in Sector N)	Water Transportation, Marinas, Yacht Clubs
Sector R: Ship and Boat Building or Repairing Yards	
3731, 3732	Ship and Boat Building or Repairing Yards
Sector S: Air Transportation	
4512-4581	Air Transportation Facilities

SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT (Continued)	
Activities Consistent with Descriptions and SIC Code or Activity Code	**Activity Represented**
Sector T: Treatment Works	
TW	Treatment Works
Sector U: Food and Kindred Products	
2011-2015	Meat Products
2021-2026	Dairy Products
2032-2038	Canned, Frozen and Preserved Fruits, Vegetables & Food Specialties
2041-2048	Grain Mill Products
2051-2053	Bakery Products
2061-2068	Sugar and Confectionery Products
2074-2079	Fats and Oils
2082-2087	Beverages
2091-2099	Miscellaneous Food Preparations and Kindred Products
2111-2141	Tobacco Products
Sector V: Textile Mills, Apparel, and Other Fabric Product Manufacturing, Leather and Leather Products	
2211-2299	Textile Mill Products
2311-2399	Apparel and Other Finished Products Made From Fabrics and Similar Materials
3131-3199 (3111 - see Sector Z)	Leather and Leather Products, except Leather Tanning and Finishing
Sector W: Furniture and Fixtures	
2434	Wood Kitchen Cabinets
2511-2599	Furniture and Fixtures
Sector X: Printing and Publishing	
2711-2796	Printing, Publishing, and Allied Industries
Sector Y: Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries	
3011	Tires and Inner Tubes
3021	Rubber and Plastics Footwear
3052, 3053	Gaskets, Packing, and Sealing Devices and Rubber and Plastics Hose and Belting
3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
3081-3089	Miscellaneous Plastics Products
3931	Musical Instruments
3942-3949	Dolls, Toys, Games and Sporting and Athletic Goods
3951-3955 (except 3952 facilities specified in Sector C)	Pens, Pencils, and Other Artists' Materials
3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal. Miscellaneous Manufacturing Industries.
3991-3999	Miscellaneous Manufacturing Industries.

SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT (Continued)	
Activities Consistent with Descriptions and SIC Code or Activity Code	**Activity Represented**
Sector Z: Leather Tanning and Finishing	
3111	Leather Tanning, Currying and Finishing
Sector AA: Fabricated Metal Products	
3411–3499	Fabricated Metal Products, Except Machinery and Transportation Equipment
3911–3915	Jewelry, Silverware, and Plated Ware
Sector AB: Transportation Equipment, Industrial or Commercial Machinery	
3511-3599 (except 3571-3579 - see Sector AC)	Industrial and Commercial Machinery (Except Computer and Office Equipment).
3711-3799 (except 3731, 3732 - see Sector R)	Transportation Equipment (Except Ship and Boat Building and Repairing)
Sector AC: Electronic, Electrical, Photographic, and Optical Goods	
3571-3579	Computer and Office Equipment
3612-3699	Electronic, Electrical Equipment and Components, Except Computer Equipment
3812-3873	Measuring, Analyzing and Controlling Instrument; Photographic and Optical Goods

Appendix C - Sectors Subject to Benchmark Monitoring Requirements

INDUSTRIAL SECTORS SUBJECT TO BENCHMARK MONITORING		
Industry Sector [1]	**Industry Sub-sector**	**Benchmark Monitoring Parameters**
A	General Sawmills and Planing Mills	TSS, COD, Zinc, TN, Phosphorus
	Wood Preserving Facilities	Arsenic, Chromium, Copper
	Log Storage and Handling	TSS
	Hardwood Dimension and Flooring Mills	TSS, COD
B	Paperboard Mills	COD
C	Industrial Inorganic Chemicals	Aluminum, Iron, TN
	Plastics, Synthetic Resins, etc	Zinc
	Soaps, Detergents, Cosmetics, Perfumes	TN, Zinc
	Agricultural Chemicals	TN, Iron, Lead, Zinc, Phosphorus
	Petroleum Refining	Oil & Grease, Lead, Zinc, BTEX
D	Asphalt Paving and Roofing Materials	TSS
E	Clay Products	Aluminum
	Concrete Products	TSS, pH, Iron
F	Steel Works, Blast Furnaces, and Rolling .... and Finishing Mills	Aluminum, Zinc
	Iron and Steel Foundries	Aluminum, TSS, Copper, Iron, Zinc
	Nonferrous Rolling, Drawing & Extruding	Copper, Zinc
	Nonferrous Foundries (Castings)	Copper, Zinc
G [2]	Ore Mining and Dressing	TSS, COD, pH, turbidity, metals
H	[Reserved]	
I	Oil and Gas Extraction	TSS, Chlorides, pH, [4]
J	Sand and Gravel Mining	TSS, TN, Iron, Zinc, Phosphorus
	Dimension and Crushed Stone and Non- metallic Minerals (except fuels)	TSS
K	Hazardous Waste Treatment, Storage or ..... Disposal	TSS, COD, TN, Arsenic, Cadmium, Cyanide, Lead, Magnesium, Mercury, Selenium, Silver

1 - Table does not include parameters for compliance monitoring under *effluent limitations guidelines*.
2 - See Sector G (Part VII.G) for additional monitoring *discharges* from waste rock and overburden piles from active ore mining or dressing facilities which includes TSS, COD, turbidity, pH, hardness, and metals.
3 - Monitoring requirement for airports with deicing activities utilizing more than 100 tons of urea or more than 100,000 gallons of glycol per year.
4 - BTEX is Benzene, Ethylbenze, Toluene and Xylene.

INDUSTRIAL SECTORS SUBJECT TO BENCHMARK MONITORING (Continued)		
Industry Sector [1]	**Industry Sub-sector**	**Benchmark Monitoring Parameters**
L	Landfills, Land Application Sites, and Open.. Dumps	Iron, TSS, TN, Phosphorus
	Landfills, Land Application Sites and Open .. Dumps, Except Municipal Solid Waste Landfill Sites Closed in accordance with 40 CFR 258.60	Iron, TSS
M	Automobile Salvage Yards	TSS, Oil & Grease, Aluminum, Iron, Lead, BTEX [4]
N	Scrap Recycling/Waste Recycling Facilities .. and Facilities Engaged in Ship Dismantling, Marine Salvaging & Marine Wrecking for Scrap	TSS, COD, Oil & Grease, Aluminum, Cadmium, Copper, Chromium, Iron, Lead, Zinc
	Scrap & Waste Recycling Facilities which .... include *Stormwater Discharges* from Shredder Fluff Storage Areas	TSS, COD, Oil & Grease, Aluminum, Cadmium, Copper, Chromium, Iron, Lead, Zinc, Mercury, PCBs, BTEX [4]
O	Steam Electric Generating Facilities	Iron, Oil & Grease, PCBs
P	Land Transportation and/or Warehousing, including Transfer Stations with vehicle maintenance facilities	Oil & Grease, COD, BTEX [4]
Q	Water Transportation Facilities	Aluminum, Iron, Zinc, Lead
S	Airports with deicing activities [3]	COD, BOD, TN, pH
T	Treatment Works	COD
U	Grain Mill Products	TSS, TN, Phosphorus
	Fats and Oils Products	BOD, COD, TSS, TN, Phosphorus
Y	Rubber Products	Zinc
Z	Leather Tanning and Finishing	TN, Chromium
AA	Fabricated Metal Products Except Coating	TN, Aluminum, Iron, Zinc
	Fabricated Metal Coating and Engraving	TN, Zinc
AC	Electronic, Electrical Equipment and Components, Photographic & Optical Goods	TSS, Copper, Lead

1 - Table does not include parameters for compliance monitoring under *effluent limitations guidelines*.
2 - See Sector G (Part VII.G) for additional monitoring *discharges* from waste rock and overburden piles from active ore mining or dressing facilities which includes TSS, COD, turbidity, pH, hardness, and metals.
3 - Monitoring requirement for airports with deicing activities utilizing more than 100 tons of urea or more than 100,000 gallons of glycol per year.
4 - BTEX is Benzene, Ethylbenze, Toluene and Xylene.

Appendix D - Compliance Monitoring Requirements - Industrial Activities Subject to Effluent Limitation Guidelines

Effluent limitation guidelines applicable to *discharges* that may be eligible for permit coverage	
Effluent Limitation Guideline	**Sectors With Affected Facilities**
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas (40 CFR Part 429, Subpart I (2002) (established January 26, 1981))	A
Contaminated runoff from phosphate fertilizer manufacturing facilities (40 CFR Part 418 Subpart A (2002) (established April 8, 1974))	C
Runoff from asphalt emulsion facilities (40 CFR Part 443 Subpart A (2002) (established July 24, 1975))	D
Runoff from material storage piles at cement manufacturing facilities (40 CFR Part 411 Subpart C (2002) (established February 23, 1977))	E
Mine dewatering *discharges* at crushed stone mines (40 CFR Part 436, Subpart B)	J
Mine dewatering *discharges* at construction sand and gravel mines (40 CFR Part 436, Subpart C)	J
Mine dewatering *discharges* at industrial sand mines (40 CFR Part 436, Subpart D)	J
Runoff from landfills, (40 CFR Part 445, Subpart A and B (2002) (established February 2, 2000))	K & L
Coal pile runoff at steam electric generating facilities (40 CFR Part 423 (2002) (established November 19, 1982))	O
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures (40 CFR Part 449, (established May 16, 2012))	S

Appendix E - Additional Information for New *Discharges*

Any facility with new *stormwater discharges associated with industrial activity* which require any other *Uniform Procedures Act* (http://www.dec.ny.gov/permits/6081.html) permit(s) (*Environmental Conservation Law*, 6 NYCRR Part 621) are not initially eligible for coverage under this general permit. The *discharge*r must first complete a Short Environmental Assessment Form which can be found in Appendix B of 6 NYCRR Part 617.20 or on the web at http://www.dec.ny.gov/regs/6191.html, and submit it to the appropriate NYSDEC Regional Permit Administrator. Upon a review of the Short Environmental Assessment Form and the information specified below, the *Department* may authorize the applicant to submit a Notice of Intent (NOI) to obtain coverage under this general permit or, alternatively, require an application for an *individual SPDES permit*.

Additional Information

1. A site map showing topography (or indicating the outline of drainage areas served by the *outfall(s)* for which *discharge* authorization and permit coverage is being sought if a topographic map is unavailable) of the facility including: each of its drainage and *discharge* structures; the drainage area of each *stormwater outfall*; paved areas and buildings within the drainage area of each *stormwater outfall*; areas used for outdoor storage or disposal of *significant materials*; structural *control measure*(s) to reduce *pollutants* in *stormwater* runoff; material loading and access areas; areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each hazardous waste treatment, storage or disposal facility (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); wells where fluids from the facility are injected underground; and springs, and surface and/or *groundwater* bodies which will receive *stormwater discharges* from the facility.

2. An estimate of the area of impervious surfaces (including paved areas and building roofs) and the total area drained by each *outfall* and a narrative description of the following: *significant materials* that, in the three years prior to the submittal of this information, have been treated, stored or disposed of in a manner which will allow exposure to *stormwater*; methods of treatment, storage or disposal of such materials; materials management practices employed to *minimize* contact of these materials with *stormwater* runoff; materials loading and access areas; the location, manner and frequency of application of pesticides, herbicides, soil conditioners and fertilizers; the location and description of structural and non-structural *control measures* being used to reduce *pollutants* in *stormwater* runoff; and a description of the *stormwater* treatment, including the ultimate disposal of any solid or fluid wastes other than by *discharge*.

3. A certification that all *outfalls* that could contain *stormwater discharges associated with industrial activity* have been tested or evaluated for the presence of non-*stormwater discharges* which are not covered by an existing *SPDES* permit; tests for such non-*stormwater discharges* may include smoke tests, fluorometric, analysis of accurate schematics, as well as other appropriate tests. The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during a test.

4. Existing information regarding reportable leaks or spills of toxic or hazardous *pollutants* at the facility that have occurred within the three years prior to the submittal of this information.

5. Estimates for the following parameters for all *outfalls*:

    - Any *pollutant* limited in an effluent limitations guideline for which the facility is subject;
    - Any *pollutant* listed in the facility's existing *SPDES* permit, if any;
    - Oil and grease, pH, BOD5, COD, TSS, total phosphorus, Ammonia, Total Kjeldahl nitrogen, and nitrate plus nitrite nitrogen;
    - Any information on the *discharge* required under paragraph §122.21(g)(7)(iii) and (iv) of 40 CFR Part 122; and
    - The flow rate and total amount of *discharge* for *stormwater* event(s) and the method of estimation.

6. Other information as the *Department* may reasonably require to determine whether coverage under this general permit or, alternatively, under an individual permit is required.

Appendix F - List of DEC Regional Offices

List of NYS DEC Regional Offices			
Region	**Counties Covered**	**DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators**	**DIVISION OF WATER (DOW) Water (SPDES) Program Regional Water Engineer**
1	Nassau and Suffolk	SUNY @ Stony Brook 50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0365	SUNY @ Stony Brook 50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Ave., Suite 1W Whiteplains, NY 10603-2860 Tel. (914) 428-2505
4	Albany, Columbia , Delaware , Greene , Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 NYS Route 86 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-0220 Tel. (518) 623-1200
6	Herkimer, Jefferson, Lewis, Oneida and St. Lawrence	State Office Building 317 Washington Street Watertown, NY 13601-3787 Tel. (315) 785-2245	State Office Building 207 Genesee Street Utica, NY 13501-2885 Tel. (315) 793-2554
7	Broome , Cayuga , Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins	615 Erie Blvd. West Syracuse, NY 13204-2400 Tel. (315) 426-7438	615 Erie Blvd. West Syracuse, NY 13204-2400 Tel. (315) 426-7500
8	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne and Yates	6274 East Avon-Lima Road Avon, NY 14414-9519 Tel. (585) 226-2466	6274 East Avon-Lima Rd. Avon, NY 14414-9519 Tel. (585) 226-2466
9	Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming	270 Michigan Avenue Buffalo, NY 14203-2999 Tel. (716) 851-7165	270 Michigan Ave. Buffalo, NY 14203-2999 Tel. (716) 851-7070

Appendix G – Pollutant(s) of Concern for Impaired Waterbodies Reference Table

Pollutant(s) of Concern for Impaired Waterbodies Reference Table		
Pollutant of Concern Causing Impairment	**Applicable Benchmark or Numeric Effluent Limit**	**Sector**
Acid/Base (pH)	pH	A, D, E, G, I, J, K, L, S
Algal/Plant Growth	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Total Phosphorous (TP)	C, J, L, U
	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC
Ammonia	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Ammonia	K, L, S
Biological Impacts	Aluminum	C, E, F, M, N, Q, AA
	Arsenic	A, G, K
	Cadmium	G, K, N
	Beryllium	G
	Chromium	A, K, N, Z
	Copper	A, F, G, N, AC
	Cyanide	K
	Iron	C, E, F, G, J, L, M, N, O, Q, AA
	Lead	C, G, K, M, N, Q, AC
	Magnesium	K
	Manganese	G
	Mercury	G, K, N
	Nickel	G
	Selenium	G, K
	Silver	G, K
	Zinc	A, C, F, G, J, K, L, N, Q, Y, AA
	Chlorides	I
	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Total Phosphorous (TP)	C, J, L, U
	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC

Pollutant(s) of Concern for Impaired Waterbodies Reference Table (Continued)		
Pollutant of Concern Causing Impairment	**Applicable Benchmark or Effluent Limit**	**Sector**
Cadmium	Cadmium	G, K, N
Chlorides/Salts	Chlorides	I
Floatables	Oil & Grease	C, D, M, N, O, P
Mercury	Mercury	G, K, N
Harmful Algal Blooms	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Total Phosphorous (TP)	C, J, L, U
	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC
Low D.O./ Oxygen Demand	Biochemical Oxygen Demand (BOD)	K, L, S, U
	Chemical Oxygen Demand (COD)	A, B, G, K, N, P, S, T, U
	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Total Phosphorous (TP)	C, J, L, U
Nitrogen	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
Nutrients	Total Nitrogen (TN)	A, C, J, K, L, S, U, Z, AA
	Total Phosphorous (TP)	C, J, L, U
	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC
PCBs	PCBs	N, O
Phosphorus	Total Phosphorous (TP)	C, J, L, U
	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC
Oil & Grease	Oil & Grease	C, D, M, N, O, P
Silt/Sediment	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC
Turbidity	Total Suspended Solids (TSS)	A, D, E, F, G, I, J, K, L, M, N, U, AC

Appendix H – Standard Permit Conditions

1. Duty to Comply

The *owner or operator* must comply with all terms and conditions of the permit. Any permit noncompliance constitutes a violation of the *Environmental Conservation Law* and is grounds for enforcement action, ineligibility for this SPDES general permit, or denial of a permit renewal.

An owner/operator's filing of a request for a transfer or termination, or notification of planned changes or anticipated non-compliance does not limit, diminish or stay compliance with any terms of this general permit.

2. Continuation of the Expired General Permit

In the event a new general permit is not issued prior to the expiration of this general permit and this general permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this general permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit until such time that a new general permit is issued. This general permit expires 5 years from the effective date.

3. Enforcement

Failure of the *owner or operator* to strictly adhere to any of the SPDES general permit requirements contained herein shall constitute a violation of this SPDES general permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this SPDES general permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate

The *owner or operator* shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6. Duty to Provide Information

The *owner or operator* shall furnish to the *Department*, within five (5) business days of a *Department* request for such information, any information requested to determine compliance with this SPDES general permit, or to determine whether cause exists for denying coverage in accordance with Appendix H.13 of this general permit. The *owner or operator* shall also furnish upon request, copies of records required by this permit.

7. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts or submitted incorrect information in the NOI or in any report to the *Department*, they shall promptly submit corrected facts or information.

8. Signatory Requirements

a. All forms (NOI and NOT), shall be signed as follows:

(1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(b) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements, and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership by a general partner

c. For a sole proprietorship by the proprietor,

d. For a municipality: State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

e. Duly Authorized Representatives
All reports and documentation required by the permit and other information requested by the *Department* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above and submitted to the *Department*.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of

manager, *owner or operator*, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

f. Changes to authorization
If an authorization under Appendix H.8.a is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the *Department* prior to or together with any reports, information, or applications to be signed by an authorized representative.

g. Certification
Any person signing documents under this section shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that *qualified personnel* properly gathered and evaluated the information submitted. Based on my inquiry of the *person* or *persons* who manage the system, or those *person* directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

9. Penalties for Falsification of Documentation/Penalties related to Monitoring Devices

In accordance with 6 NYCRR 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

10. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject under section 311 of the CWA or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA").

11. Property Rights

The issuance of this permit does not convey any property rights in either real property or personal property, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, *State* or local laws or regulations; nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the authorized *discharge*. Owners or Operators must obtain any applicable conveyances, easements, licenses and/or access to real property prior to commencing *discharges* authorized by this SPDES general permit.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be impaired or affected thereby.

13. Requiring an Individual Permit or an Alternative General Permit

The *Department* may require any person authorized by this general permit to apply for and/or obtain either an *individual SPDES permit* or an alternative *SPDES* general permit in accordance with 6 NYCRR Part 750-1.21(e).

a. The *Department* may require any *owner or operator* authorized by this permit to apply for and/or obtain either an *individual SPDES permit* or another SPDES general permit. When the *Department* requires any *discharge*r authorized by a general permit to apply for an *individual SPDES permit*, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an *individual SPDES permit*, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to *discharge* under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The *Department* may grant additional time upon demonstration, to the satisfaction of the *Department*, that additional time to apply for an alternative authorization is necessary or where the *Department* has not provided a permit determination in accordance with Part 621 of this Title.

b. When an *individual SPDES permit* is issued to a *discharge*r authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for *outfalls* authorized under the *individual SPDES permit* is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

14. State/Environmental Laws

a. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties established pursuant to any applicable *State* law or regulation under authority preserved by section 510 of the Clean Water Act.

b. No condition of this permit shall release the *owner or operator* from any responsibility or requirements under other environmental statutes or regulations.

c. Nothing in this SPDES general permit relieves the Owner or Operator from the requirement to obtain any other permits required by law.

d. Coverage under this SPDES permit does not supersede, revoke or rescind an order on consent or modification of the order or any of the terms, conditions or requirements contained in such order or modification unless specifically intended by the order or a newly issued order.

15. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of *stormwater* pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems installed by an *owner or operator* only when necessary to achieve compliance with the conditions of the permit.

16. Inspection and Entry

The *owner or operator* shall allow an authorized representative of either the *Department* or EPA or, in the case of a facility which *discharges* through a *municipal separate storm sewer system*, an authorized representative of the municipal operator of the separate storm sewer receiving the *discharge*, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the *owner or operator*s premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

b. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit, including required to be maintained for the purposes of operation and maintenance:

c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practice or operations regulated or required under the permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized the CWA or the ECL, any substance or parameters at any location.

17. Definitions

Definitions are included in Appendix A of this permit. Additional definitions are provided within the Part VII industrial sectors for terms that are specific to those industries.

18. Reopener Clause

a. If there is evidence indicating potential or realized impacts on water quality due to any *stormwater discharge associated with industrial activity* covered by this permit, the *owner or operator* of such *discharge* may be required to obtain an individual permit or an alternative general permit in accordance with Appendix H.13 of this permit or the permit may be modified to include different limitations and/or requirements.

b. Permit modification, suspension, or revocation will be conducted according to 6 NYCRR Part 621 and 6 NYCRR 750-1.18 and 750-1.20.

APPENDIX D

Fire Code Citations

New York State Fire Code, 2015 Edition

Chapter 20 – Aviation Facilities

Section 2006.11 – Fuel Spill Prevention and Procedures

2006.11 Fuel spill prevention and procedures.

Fuel spill prevention and the procedures for handling spills shall comply with Sections 2006.11.1 through 2006.11.7.

2006.11.1 Fuel-service equipment maintenance.

Aircraft fuel-servicing equipment shall be maintained and kept free from leaks. Fuel-servicing equipment that malfunctions or leaks shall not be continued in service.

2006.11.2 Transporting fuel nozzles.

Fuel nozzles shall be carried utilizing appropriate handles. Dragging fuel nozzles along the ground shall be prohibited.

2006.11.3 Drum fueling.

Fueling from drums or other containers having a capacity greater than 5 gallons (19 L) shall be accomplished with the use of an *approved* pump.

2006.11.4 Fuel spill procedures.

The fueling-system operator shall establish procedures to follow in the event of a fuel spill. These procedures shall be comprehensive and shall provide for all of the following:

1. Upon observation of a fuel spill, the aircraft-fueling operator shall immediately stop the delivery of fuel by releasing hand pressure from the fuel flow-control valve.
2. Failure of the fuel control valve to stop the continued spillage of fuel shall be cause for the activation of the appropriate emergency fuel shutoff device.
3. A supervisor for the fueling-system operator shall respond to the fuel spill area immediately.

2006.11.5 Notification of the fire department.

The fire department shall be notified of any fuel spill that is considered a hazard to people or property or which meets one or more of the following criteria:

1. Any dimension of the spill is greater than 10 feet (3048 mm).
2. The spill area is greater than 50 square feet (4.65 m^2).
3. The fuel flow is continuous in nature.

2006.11.6 Investigation required.

An investigation shall be conducted by the fueling-system operator of all spills requiring notification of the fire department. The investigation shall provide conclusive proof of the cause and verification of the appropriate use of emergency procedures. Where it is determined that corrective measures are necessary to prevent future incidents of the same nature, they shall be implemented immediately.

2006.11.7 Multiple fuel delivery vehicles.

Simultaneous delivery of fuel from more than one aircraft-fueling vehicle to a single aircraft-fueling manifold is prohibited unless proper backflow prevention devices are installed to prevent fuel flow into the tank vehicles.

National Fire Protection Association 407 – Standard for Aircraft Fuel Servicing, 2012 Edition

Chapter 5.2 – Prevention and Control of Spills

Appendix A.5.2 – Spill Response

Chapter 5.2 – Prevention and Control of Spills

5.2 Prevention and Control of Spills.

5.2.1 Fuel servicing equipment shall comply with the requirements of this standard and shall be maintained in safe operating condition. Leaking or malfunctioning equipment shall be removed from service.

5.2.2 Following fueling of an aircraft, all hoses shall be removed, including those from hydrant systems. All hoses shall also be properly stowed.

5.2.3 Fuel nozzles shall not be dragged along the ground.

5.2.4 Approved pumps, either hand operated or power operated, shall be used where aircraft are fueled from drums. Pouring or gravity flow shall not be permitted from a container with a capacity of more than 5 gallons.

5.2.5 Where a spill is observed, the fuel servicing shall be stopped immediately by release of the deadman controls.

5.2.5.1 In the event that a spill continues, the equipment emergency fuel shutoff shall be actuated.

5.2.5.2 In the event that a spill continues from a hydrant system, the system emergency fuel shutoff shall be actuated.

5.2.5.3 The supervisor shall be notified immediately.

5.2.5.4 Cleaning operations shall be performed by personnel trained per Section 5.1.1 (Only personnel trained in the safe operation of the equipment and fuels they use, the operation of emergency controls, and the procedures to be followed in an emergency shall be permitted to handle fuel).

5.2.5.5 Operation shall not be resumed until the spill has been cleared and conditions are determined to be safe.

5.2.6 The airport fire crew shall be notified if a spill covers over 10 feet in any direction or is over 50 square feet in area, continues to flow, or is otherwise a hazard to persons or property. The spill shall be investigated to determine the cause, to determine whether emergency procedures were properly carried out, and to determine the necessary corrective measures.

Appendix A.5.2 – Spill Response

A.5.2 The following actions are appropriate in the event of a fuel spill, although each spill should be treated as an individual case due to such variables as the size of the spill, type of flammable or combustible liquid involved, wind and weather conditions, equipment arrangement, aircraft occupancy, emergency equipment, and personnel available:

(1) The flow of fuel should be stopped, if possible. If the fuel is discovered leaking or spilling from fuel servicing equipment or hoses, the emergency fuel shutoff should be operated at once. If the fuel is discovered leaking or spilling from the aircraft at the filler opening, vent line, or tank seams during fueling operations, fueling should be stopped immediately. Evacuation of the aircraft should be ordered when necessary. The aircraft then should be thoroughly checked for damage or entrance of flammable liquid or vapors into any concealed wing or fuselage area, and corrective action should be taken as necessary before it is returned to normal operational service.

(2) The airport fire crew should be notified if the spill presents a fire hazard. The only routine exceptions are for small spills. Supervisory personnel should be notified to ensure that operations in progress can be continued safely or halted until the emergency is past and that corrective measures can be taken to prevent recurrence of a similar accident.

(3) It could be necessary to evacuate the aircraft if the spill poses a serious fire exposure to the aircraft or its occupants. Walking through the liquid area of the fuel spill should not be permitted. Persons who have been sprayed with fuel or had their clothing soaked with fuel should go to a place of refuge, remove their clothing, and wash. Individuals whose clothing has been ignited should be wrapped in blankets, coats, or other items or should be told to or forced to roll on the ground.

(4) Mobile fueling equipment and all other mobile equipment should be withdrawn from the area or left as is until the spilled fuel is removed or made safe. No fixed rule can be made as fire safety varies with circumstances. Shutting down equipment or moving vehicles can provide a source of ignition if no fire immediately results from the spillage.

(5) Aircraft, automotive, or spark-producing equipment in the area should not be started before the spilled fuel is removed or made safe. If a vehicle or cart engine is running at the time of the spill, it normally is good practice to drive the vehicle away from the hazard area unless the hazard to personnel is judged too severe. Fuel servicing vehicles or carts in operation at the time of the spill should not be moved until a check is made to verify that any fuel hose that could have been in use or connected between the vehicle and the aircraft is safely stowed.

(6) If any aircraft engine is operating at the time of the spill, it normally is good practice to move the aircraft away from the hazard area unless air currents set up by operating power plants would aggravate the extent or the nature of the existing vapor hazard.

(7) If circumstances dictate that operating internal combustion engine equipment within a spill area that has not ignited should be shut down, engine speeds should be reduced to idle prior to cutting ignition in order to prevent backfire.

(8) The volatility of the fuel can be a major factor in the initial severity of the hazard created by a spill. Gasoline and other low flash point fuels at normal temperatures and pressures produce vapors that are capable of forming ignitible mixtures with the air near the surface of the liquid, whereas this condition does not normally exist with kerosene fuels (JET A or JET A-1) except where ambient temperatures are 38°C (100°F) or above or where the liquid has been heated to a similar temperature.

(9) Spills of gasoline and low flash point turbine fuels (JET B) greater than 3 m (10 ft) in any dimension and covering an area of over 5 m2 (50 ft2) or that are of an ongoing nature should be blanketed or covered with foam. The nature of the ground surface and the existing exposure conditions dictate the exact method to be followed. Such fuels should not be washed down sewers or drains. The decision to use a sewer or drain should be made only by the chief of the airport fire brigade or the fire department. If fuels do enter sewers, either intentionally or unintentionally, large volumes of water should be introduced to flush such sewers or drains as quickly as possible to dilute the flammable liquid content of the sewer or drain to the maximum possible extent. Normal operations involving ignition sources (including aircraft and vehicle operations) should be prohibited on surface areas adjacent to open drains or manholes from which flammable vapors could issue due to the introduction of liquids into the sewer system until it can be established that no flammable vapor–air mixture is present in the proximity. (NOTE: NFPA415 provides further information on aircraft fueling ramp drainage designs to control the flow of fuel that could be spilled on a ramp and to minimize the resulting possible danger.)

(10) Spills of kerosene grades of aviation fuels (JETA or JETA-1) greater than 3 m (10 ft) in any dimension and covering an area of over 5 m2 (50 ft2) or that are of an ongoing nature and that have not ignited should be blanketed or covered with foam if there is danger of ignition. If there is no danger of ignition, an absorbent compound or an emulsiontype cleaner can be used to clean the area. Kerosene does not evaporate readily at normal temperatures and should be cleaned up. Smaller spills can be cleaned up using an approved, mineral-type, oil absorbent.

(11) Aircraft on which fuel has been spilled should be inspected thoroughly to ensure that no fuel or fuel vapors have accumulated in flap well areas or internal wing sections not designed for fuel tankage. Any cargo, baggage, express, mail sacks, or similar items that have been wetted by fuel should be decontaminated before being placed aboard any aircraft.

EXHIBIT 3

SUMMARY REPORT – PFAS TEST PIT INVESTIGATION AT PROPOSED MAINTENANCE AND STORAGE BUILDINGS (CT MALE, 2024)

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

12 Raymond Avenue, Poughkeepsie, NY 12603
845.454.4400 www.ctmale.com

February 7, 2024 VIA EMAIL

Mr. Robert Balkind, PE
Dutchess County D.P.W. – Commissioner's Office
626 Dutchess Turnpike
Poughkeepsie, New York 12603
Email: rbalkind@dutchessny.gov

Re: *Summary Report – PFAS Test Pit Investigation at Proposed Maintenance and Storage Buildings; Hudson Valley Regional Airport Site - 18 Griffith Way, Wappingers Falls, Dutchess County, NY - NYSDEC Site 314129*
C.T. Male Project No. 18.8090

Dear Mr. Balkind:

This summary letter report (Report) has been prepared to present the findings of a limited soils investigation performed at the Hudson Valley Regional Airport. Soils at the areas of the proposed two (2) maintenance and storage buildings were investigated for the presence of Per- and Polyfluoroalkyl Substances (collectively referred to as PFAS) through the excavation of test pits and sampling of soil. A summary of field activities, analytical results, and recommendations is detailed below.

Introduction

The Hudson Valley Regional Airport is located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York. The airport property is approximately 510.8 acres in size and is identified with tax number 135689-6259-03-225301-0000 on the Town of Wappinger tax maps. A Site Location Map is included as Figure 1. The proposed two (2) buildings (the "Site") are located in the northwestern portion of the facility, adjacent to the newly constructed ARFF/SRE building, along Citation Drive. This report describes the field sampling procedures and analytical results.

The current property site use is as a regional airport known as Hudson Valley Regional Airport (POU). It is a publicly owned, public-use, General Aviation facility, servicing the aviation needs of Dutchess County, metropolitan New York City area, and the southeastern region of New York State. The airport property has several tenants that lease hangars and utilize the airport for helicopter and airplane flights for private clients or personal use. The airport operates by criteria that is outlined and regulated by the FAA pertaining to the following areas: facility requirements for airfield, terminal and general aviation areas, runways and taxiways, land use, instrumentation and lighting, general aviation requirements, fuel storage, and Aircraft Rescue and Fire Fighting (ARFF).

As stated in the Airport's Master Plan, the Federal Aviation Regulation Part 139.315 establishes a system of indexing airports that are regularly served by scheduled commuter aircraft. The overall length of the aircraft having five or more daily departures determines the airports ARFF index. The Hudson Valley Regional Airport operates as an Index A facility. The minimum rescue and firefighting equipment and agents required for Index A are as follows:

- The airport must have one vehicle carrying at least 500 pounds of sodium-based dry chemical or halon 1211;

- Or alternatively, one vehicle carrying 450 pounds of potassium-based dry chemical and water with a commensurate quantity of Aqueous Fire Fighting Foam (AFFF) agent to total 100 gallons, for simultaneous dry chemical and AFFF application.

The ARFF vehicle at the airport currently meets the Federal Aviation Regulation Part 139 requirements and has the capability of AFFF application.

The Federal Aviation Regulations also state that ARFF vehicles must be tested annually to ensure that the vehicle is working properly. Additionally, the quantity and the chemical composition of the AFFF must be held to the required standards. Interviews with the Airport Director and the fire fighters at the airport indicated that the testing area for AFFF application is the North or South end of runway 15-33. Typically, one to two 5-gallon buckets of AFFF were applied during the testing. In 2009-2010, the airport switched the type of AFFF used in the ARFF vehicle(s). The AFFF products now used are Ansulite 3% (AFC-3A) and Chemguard C301MS, which may not contain PFAS compounds based on a review of the material safety data sheets; however, there are proprietary compounds listed, which may contain the PFAS compounds of concern.

Site History

The New York State Department of Environmental Conservation (NYSDEC) has classified the airport property as a potential inactive hazardous waste disposal site (P-Site #314129) due to the presence of combined perfluorooctanoic acid (PFOA) and perfluororooctanesulfonic acid (PFOS) detected in May 2016 at concentrations in a potable drinking water supply well then located at the airport property above the Health Advisory Level (HAL) value of 70 parts per trillion set by the United States Environmental Protection Agency (USEPA). PFOS and PFOA are members of the class of substances called per- and polyfluoroalkyl substances known as PFAS. Concentrations of PFAS were also detected in nearby off-Site private water supply wells. Initial private well water samples were collected by the New York State Department of Health (NYSDOH) in September 2017. The NYSDEC informed Dutchess

County by letter (dated September 15, 2017) of the P-Site classification based on these detections. The NYSDEC also mandated an investigation in accordance with NYSDEC's technical requirements for a site characterization investigation (SC). Initial site characterization activities, a records review, and a draft SC report were submitted to the NYSDEC in December of 2019. Subsequently, additional field activities were conducted, and multiple revised draft SC reports were submitted to the NYSDEC in October 2021, August 2022, May 2023, June 2023, and October 2023. The SC report was finally approved by the NYSDEC on November 16, 2023.

Based on the records search, inspections and interviews, nine areas of concern (AOCs) were identified and investigated during the SC investigation: the firefighting AFFF testing area (AOC-1), the former Balefill Landfill (AOC-2), the former Dutchess County Landfill (AOC-3), the former Jackson Road petroleum spill (AOC-4), several stormwater outfalls that may have received AFFF during routine testing(AOC-5), the AAG hangars (former IBM Hanger, NYSDEC Site No. 314078 and Flagship Hanger, NYSDEC Site No. 314101) (AOC-6), the Aircraft Rescue and Firefighting Facilities (ARFF)[1] / maintenance building (AOC-7), the fire pond (AOC-8), and the North/South runway where AFFF was tested annually as required by the Federal Aviation Administration (FAA) (AOC-9). It should be noted that the areas where to two maintenance and storage buildings are proposed to be constructed, are not located within any of the identified AOCs. The closest AOC (AOC-4), is located at a significantly lower elevation down-gradient from the proposed construction area. Refer to Figure 2 *Site Characterization Areas of Concern Locations & Sky Harbour Hanger Location*.

The airport property is generally flat across the maintained areas immediately surrounding the airport runways, associated hangars, and airport terminal. Airport ground elevations range between approximately 100 feet above mean sea level (amsl) at the southwestern property boundary to approximately 170 feet amsl at the northeastern property boundary. The airport land was presumably filled and built up, presumably using local, repositioned soils to flatten the grade for the runways, especially in the southwestern, western, and northwestern portions of the property where grade slopes sharply toward the Wappinger Creek immediately beyond the areas that buffer the runways. Additionally, the Balefill and Dutchess County Landfill, to the northwest and northeast of the airport property, respectively, are artificially mounded from landfilling. The grade of both landfills generally slopes downward radially, but more predominantly to the north in both instances, in the direction of the Wappinger Creek. The natural topography surrounding the airport property also slopes to the northwest

[1] A new Aircraft Rescue and Firefighting Facilities (ARFF) building, situated in the southwest corner of the property, was constructed after a significant portion of the subject Site Characterization was completed. All references to the ARFF building in this report refer to the former ARFF building, which remains situated in the southeast corner of the property.

in the direction of the Wappinger Creek. The locations of the proposed Storage and Maintenance Building footprints are generally flat, grassy areas located adjacent to the asphalt parking area surrounding the existing ARFF/SRE building. Beyond the proposed building footprints, the area topography slopes to the north and west.

Overburden soils at the airport property consist primarily of silts and sands. Gravelly sections of overburden also exist but are less extensive, based on review of the soil borings for previous site investigations. Deeper sections of soil consist of glacial till with a silty-clay matrix and highly variable grain size. Till was observed or reported to be somewhat weathered, saturated, and only moderately dense in most instances. Additionally, like most overburden units encountered at the airport property, the till was not found extensively, likely having been eroded away entirely in some locations. Overburden soils generally reflect fluvial deposits expected given the airport property's proximity to the Wappinger Creek. Large portions of the airport were cut and filled to create flat ground for building and runway construction. Fill material was likely sourced (and processed) from other areas on the airport parcel, but it is unknown if off-site fill sources were also utilized.

Soils at the airport property are mapped by the United States Department of Agriculture (USDA) Web Soil Survey primarily as udorthents, or gravelly loam, likely derived from glacial outwash and kame deposits. Udorthents are described by the USDA as well drained soils that have often been disturbed or reworked by cuffing or filling in areas that are covered by buildings or pavement. The Wappinger loam and Pawling Silt loam are both mapped by the USDA in the western portions of the airport property, and are siltier, fine-grained loams that are likely derived from lake and stream sediments.

This Report was prepared in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) (DER-10) and 6 NYCRR 375 Environmental Remediation Programs (December 14, 2006).

Summary of Field Activities

On December 18, 2023, five (5) test pits identified as TP-21 to TP-25 were excavated by Dutchess County personnel within the area of two (2) proposed storage and maintenance buildings. The test pit locations are depicted on Figure 3 – *Test Pit Soil Sample Locations and Results at Proposed Maintenance and Storage Buildings*. Test pits TP-21 to TP-25 were excavated using a CAT excavator. Generally, test pits were excavated to depths ranging from approximately six (6) to eight (8) feet. Groundwater was encountered in TP-21 at a depth of approximately 6 feet and 3 inches below ground surface (bgs). Groundwater was not encountered at any other test pit location. Soils

generally consisted of topsoil in the upper four (4) to six (6) inches, followed by a light brown fine to coarse sand with some gravel and trace cobbles. Field test pit logs are included as Appendix A.

Shallow soil samples were collected for analysis of PFAS at depths ranging from 0-2", just below the organic root layer. Deeper test pit samples were collected for analysis of PFAS from test pits TP-22 (4-5' bgs), and TP-24 (5-6' bgs). The deeper samples were intended to evaluate the distribution of PFAS vertically.

Analytical Sampling Results

All samples were collected and analyzed in accordance with the NYSDEC's *SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) Under NYSDEC's Part 375 Remedial Programs,* April 2023 and DER-10, Technical Guidance for Site Investigation and Remediation, May 2010. Soil sample analytical results for this investigation were assessed in comparison to NYSDEC 6 NYCRR Part 375-6 Unrestricted Use Soil Cleanup Objectives (UUSCOs), Commercial use Soil Cleanup Objectives (CUSCOs), and Protection of Groundwater Soil Cleanup Objectives (PGSCOs). Equipment rise blank water samples were assessed in comparison to NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1); Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations dated October 1993; Revised June 1998; errata sheet dated January 1999; and Addenda through 2023 (NYSDEC Class GA).

Seven (7) soil grab samples were collected for PFAS analysis at the proposed maintenance and storage buildings areas. Four (4) quality assurance/quality control (QA/QC) samples including one (1) matrix spike sample, one (1) matrix spike duplicate sample, one (1) field duplicate, and one (1) equipment rinse blank sample were submitted for analysis in addition to the grab samples. No PFAS were detected in equipment rinsate blank samples.

Several PFAS compounds including PFOA and PFOS were detected in all samples at concentrations below UUSCOs. Table A on the following page summarizes PFOA and PFOS concentrations detected in soil grab samples. Soil laboratory analytical results are summarized in attached Table B. PFOA and PFOS soil concentrations in soil are depicted on Figure 2 – *PFAS Soil Concentrations at Proposed Maintenance and Storage Buildings*. Laboratory analytical results are included as Appendix B.

Table A
PFOA and PFOS Concentrations Detected in Soil Grab Sample

Analyte	SCOs for protection of GW (ug/kg)	SCOs for Unrestricted Use (ug/kg)	SCOs for Restricted Commercial Use (ug/kg)	Concentration (ug/kg)
PFOA	***0.8***	***0.66***	***500***	
TP-21S				0.24
TP-22				0.118
TP-22S				0.104
TP-23S				0.117
TP-24				0.09
TP-24S				0.129
TP-25				0.108
PFOS	***1.0***	***0.88***	***440***	
TP-21S				0.554
TP-22				0.128
TP-22S				0.289
TP-23S				0.294
TP-24				ND
TP-24S				0.362
TP-25S				0.577

Laboratory data has not been validated.

Conclusions and Recommendations

PFAS impacted soil has been identified at the building footprints of the proposed future maintenance and storage buildings. Several PFAS analytes were detected in soil at test pits TP-21 – TP-25, though no concentrations exceed UUSCOs.

The results of this limited investigation indicate that soil located at the proposed maintenance and storage building footprints contains PFAS at concentrations below the UUSCOs. The PFAS content of groundwater at this location is unknown. Future construction activities for the maintenance and storage buildings will include disturbance of very low-concentration PFAS impacted soil and possibly PFAS containing groundwater if limited dewatering is necessary. Since soil PFAS concentrations are below UUSCOs, no specialized handling procedures are required

beyond typical earthwork procedures. It is advisable to include erosion and sediment control and fugitive dust mitigation measures to protect against the unknown but no special measures are required per applicable PFAS regulation and/or guidance. Any excess soil generated from this project may be re-used on-site as backfill. If off-site re-use of excess material is proposed, the County should provide this sampling data (and report) to the receiving facility to disclose the PFAS content of the soil.

If you have any questions or comments, please contact Jim McIver at (845) 454-4400.

Sincerely,

C.T. MALE ASSOCIATES

James D. McIver, Jr., P.G., MBA
Managing Geologist/Regional Office Manager

Attachments:

Figures:

Figure 1 – Site Location Map
Figure 2 – PFAS Soil Concentrations at Proposed Maintenance and Storage Buildings

Tables:

Table 1: Summary of Analytical Results, Proposed Maintenance and Storge Buildings

Appendix A: Test Pit Logs
Appendix B: Laboratory Analytical Reports

ec: Eric White, Environmental Scientist IV, C.T. Male

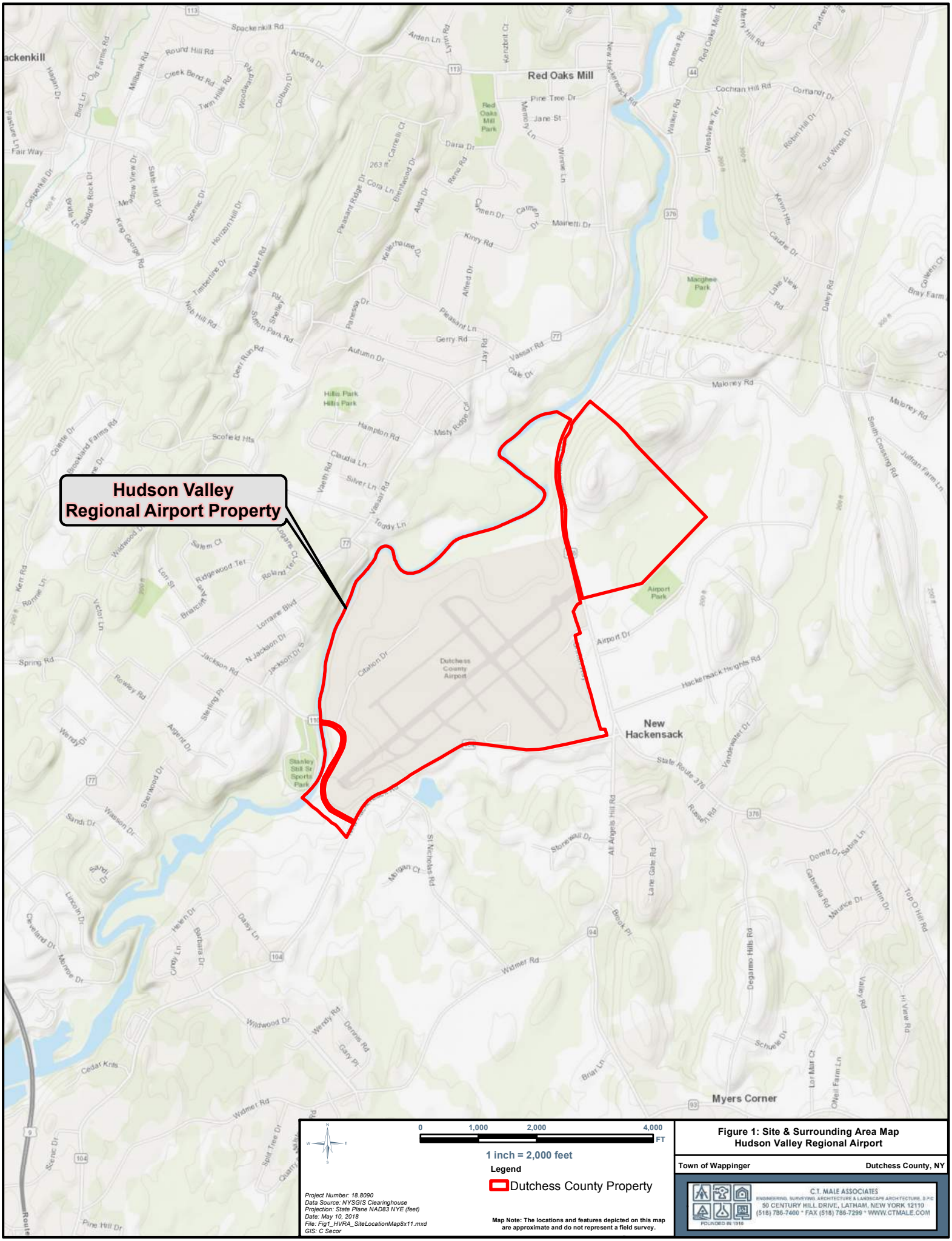

Figure 1: Site & Surrounding Area Map
Hudson Valley Regional Airport

Town of Wappinger — Dutchess County, NY

C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NEW YORK 12110
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FOUNDED IN 1910

PROPOSED PROJECT WILL CONSOLIDATE ALL AIRPORT OPERATIONS AND MAINTENANCE VEHICLE AND EQUIPMENT STORAGE TO THIS LOCATION ON THE AIRPORT.

SAMPLE ID:	TP-22	TP-22S
ANALYTE (ug/kg)	Conc	Conc
PFOS	0.128	0.289
PFOA	0.118	0.104

SAMPLE ID:	TP-21S
ANALYTE (ug/kg)	Conc
PFOS	0.554
PFOA	0.24

SAMPLE ID:	TP-23S
ANALYTE (ug/kg)	Conc
PFOS	0.294
PFOA	0.117

SAMPLE ID:	TP-24	TP-24S
ANALYTE (ug/kg)	Conc	Conc
PFOS	ND	0.362
PFOA	0.09	0.129

SAMPLE ID:	TP-25S
ANALYTE (ug/kg)	Conc
PFOS	0.577
PFOA	0.108

TP21
TP22
TP23
TP24
TP25

PROPOSED SRE / MAINTENANCE COLD STORAGE BUILDING

PROPOSED SALT/UREA STORAGE

SEE KEYING DETAIL, DETAIL A3/CG 501

PROPOSED GAS LINE, SEE CU SERIES FOR LAYOUT AND DETAILS

FOR TURF AND SIDEWALK LAYOUT SEE A1/EL

ARFF/SRE BUILDING F.F. 145.11

HANGAR

PROPOSED WATER LINE, SEE CU SERIES FOR LAYOUT AND DETAILS

SEE ISOLATION JOINT AT FOUNDATION DETAIL, SEE DETAIL B2/CG 501

SEE KEYING DETAIL, DETAIL A3/CG 501

PROPOSED CONTINUOUS TAXIWAY EDGE MARKING, SEE DETAIL C4/CG 505

TAXIWAY "D"

GRADING LIMITS

SILT FENCE, SEE DETAIL B4/CG 503

SEPTIC SYSTEM, ITEM S-100.

JACKSON ROAD (C.R. 110)

Legend
- Proposed Test Pit Location, Shallow Soil Sampling
- Proposed Test Pit Location, Shallow & Deep Soil Sampling

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FOUNDED IN 1910

Drawing Adapted from drawing by C&S Engineers dated December 2017

Figure 2 - Sampling Location Plan at Proposed Storage Buildings

HVRA South Side Expansion, Wappinger, NY
December 7, 2023

40 0 40 80FT.
40'

Copyright ©

Dec. 12, 2018 - 10:19am
F:\Project\128 - DUTCHESS COUNTY\128051001 - ARFF-SRE Building\Design\CADD\Sheet Files\128051001_CG-SERIES.dwg

Table 1: Summary of Analytical Results
Proposed Maintenance and Storage Buildings
Hudson Valley Regional Airport
Dutchess County, New York

			SAMPLE ID:	FD01-20231218				TP-21S				TP-22				TP-22S			
			COLLECTION DATE:	12/18/2023				12/18/2023				12/18/2023				12/18/2023			
			SAMPLE DEPTH:	0-2"				0-2"				4-5'				0-2"			
			SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL			
	NY-RESC	NY-PGW	NY-UNRES																
ANALYTE	(ug/kg)		(ug/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PERFLUORINATED ALKYL ACIDS BY EPA 1633																			
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	NS	ND		0.787	0.164	ND		0.798	0.167	ND		0.771	0.161	ND		0.776	0.162
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NS	NS	NS	ND		0.787	0.381	ND		0.798	0.386	ND		0.771	0.373	ND		0.776	0.376
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	NS	NS	NS	ND		0.787	0.08	ND		0.798	0.081	ND		0.771	0.078	ND		0.776	0.078
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NS	NS	NS	ND		0.787	0.276	ND		0.798	0.279	ND		0.771	0.27	ND		0.776	0.272
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	NS	NS	NS	ND		4.92	0.497	ND		4.99	0.504	ND		4.82	0.487	ND		4.85	0.49
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	NS	NS	NS	ND		4.92	1.73	ND		4.99	1.76	ND		4.82	1.7	ND		4.85	1.71
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	NS	NS	NS	ND		0.984	0.142	ND		0.998	0.144	ND		0.964	0.139	ND		0.97	0.14
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	NS	NS	NS	ND		0.787	0.144	ND		0.798	0.146	ND		0.771	0.141	ND		0.776	0.142
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	NS	ND		0.787	0.193	ND		0.798	0.196	ND		0.771	0.189	ND		0.776	0.19
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	NS	NS	NS	ND		0.787	0.097	ND		0.798	0.098	ND		0.771	0.095	ND		0.776	0.095
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	NS	NS	NS	ND		0.197	0.11	ND		0.2	0.112	ND		0.193	0.108	ND		0.194	0.109
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	NS	NS	NS	ND		1.97	0.502	ND		2	0.509	ND		1.93	0.492	ND		1.94	0.495
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NS	NS	NS	ND		0.197	0.081	ND		0.2	0.082	ND		0.193	0.08	ND		0.194	0.08
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NS	NS	NS	ND		0.197	0.098	ND		0.2	0.1	ND		0.193	0.096	ND		0.194	0.097
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	NS	NS	NS	ND		1.97	0.246	ND		2	0.25	ND		1.93	0.241	ND		1.94	0.243
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NS	NS	NS	ND		0.197	0.098	ND		0.2	0.1	ND		0.193	0.096	ND		0.194	0.097
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	NS	NS	NS	ND		0.394	0.094	ND		0.399	0.095	ND		0.386	0.092	ND		0.388	0.092
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	NS	NS	NS	ND		0.394	0.082	ND		0.399	0.083	ND		0.386	0.08	ND		0.388	0.081
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	NS	NS	NS	ND		0.394	0.04	ND		0.399	0.041	ND		0.386	0.039	ND		0.388	0.04
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	NS	NS	NS	ND		0.394	0.031	ND		0.399	0.031	ND		0.386	0.03	ND		0.388	0.03
Perfluorobutanesulfonic Acid (PFBS)	NS	NS	NS	ND		0.197	0.043	ND		0.2	0.043	ND		0.193	0.042	ND		0.194	0.042
Perfluorobutanoic Acid (PFBA)	NS	NS	NS	ND		0.787	0.05	0.168	J	0.798	0.05	0.087	J	0.771	0.049	0.068	J	0.776	0.049
Perfluorodecanesulfonic Acid (PFDS)	NS	NS	NS	ND		0.197	0.032	ND		0.2	0.032	ND		0.193	0.031	ND		0.194	0.031
Perfluorodecanoic Acid (PFDA)	NS	NS	NS	ND		0.197	0.074	ND		0.2	0.075	ND		0.193	0.073	ND		0.194	0.073
Perfluorododecanesulfonic Acid (PFDoS)	NS	NS	NS	ND		0.197	0.038	ND		0.2	0.038	ND		0.193	0.037	ND		0.194	0.037
Perfluorododecanoic Acid (PFDoA)	NS	NS	NS	ND		0.197	0.04	ND		0.2	0.041	ND		0.193	0.039	ND		0.194	0.04
Perfluoroheptanesulfonic Acid (PFHpS)	NS	NS	NS	ND		0.197	0.036	ND		0.2	0.037	ND		0.193	0.036	ND		0.194	0.036
Perfluoroheptanoic Acid (PFHpA)	NS	NS	NS	ND		0.197	0.023	0.108	J	0.2	0.023	0.051	J	0.193	0.022	0.046	J	0.194	0.023
Perfluorohexanesulfonic Acid (PFHxS)	NS	NS	NS	ND		0.197	0.058	0.114	J	0.2	0.059	ND		0.193	0.057	ND		0.194	0.057
Perfluorohexanoic Acid (PFHxA)	NS	NS	NS	ND		0.197	0.046	0.108	J	0.2	0.046	ND		0.193	0.045	ND		0.194	0.045
Perfluorononanesulfonic Acid (PFNS)	NS	NS	NS	ND		0.197	0.042	ND		0.2	0.042	ND		0.193	0.041	ND		0.194	0.041
Perfluorononanoic Acid (PFNA)	NS	NS	NS	ND		0.197	0.077	0.211		0.2	0.078	ND		0.193	0.076	ND		0.194	0.076
Perfluorooctanesulfonamide (PFOSA)	NS	NS	NS	ND		0.197	0.043	ND		0.2	0.043	ND		0.193	0.042	ND		0.194	0.042
Perfluorooctanesulfonic Acid (PFOS)	**440**	**1.0**	**0.88**	**ND**		**0.197**	**0.078**	**0.554**		**0.2**	**0.079**	**0.128**	**J**	**0.193**	**0.076**	**0.289**		**0.194**	**0.077**
Perfluorooctanoic Acid (PFOA)	**500**	**0.8**	**0.66**	**0.084**	**J**	**0.197**	**0.051**	**0.24**		**0.2**	**0.052**	**0.118**	**J**	**0.193**	**0.05**	**0.104**	**J**	**0.194**	**0.05**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	NS	ND		0.197	0.023	ND		0.2	0.023	ND		0.193	0.022	ND		0.194	0.023
Perfluoropentanoic Acid (PFPeA)	NS	NS	NS	ND		0.394	0.055	0.175	J	0.399	0.056	ND		0.386	0.054	ND		0.388	0.054
Perfluorotetradecanoic Acid (PFTeDA)	NS	NS	NS	ND		0.197	0.105	ND		0.2	0.106	ND		0.193	0.103	ND		0.194	0.103
Perfluorotridecanoic Acid (PFTrDA)	NS	NS	NS	ND		0.197	0.052	ND		0.2	0.053	ND		0.193	0.051	ND		0.194	0.051
Perfluoroundecanoic Acid (PFUnA)	NS	NS	NS	ND		0.197	0.05	0.089	J	0.2	0.051	ND		0.193	0.049	ND		0.194	0.05
GENERAL CHEMISTRY																			
Solids, Total	NS	NS	NS	92.7		0.1	0.1	84.2		0.1	0.1	75.8		0.1	0.1	77.4		0.1	0.1

* Comparison is not performed on parameters with non-numeric criteria.
NS denotes No Standard
NY-RESC: New York NYCRR Part 375 Commercial Criteria, New York Restricted use Criteria
NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria
NY-PGW: New York NYCRR Part 375 Protection of Groundwater Criteria
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

Table 1: Summary of Analytical Results
Proposed Maintenance and Storage Buildings
Hudson Valley Regional Airport
Dutchess County, New York

			SAMPLE ID:	TP-23S				TP-24				TP-24S				TP-25S			
			COLLECTION DATE:	12/18/2023				12/18/2023				12/18/2023				12/18/2023			
			SAMPLE DEPTH:	0-2"				5-6'				0-2"				0-2"			
			SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL			
	NY-RESC	NY-PGW	NY-UNRES																
ANALYTE	(ug/kg)		(ug/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PERFLUORINATED ALKYL ACIDS BY EPA 1633																			
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	NS	NS	NS	ND		0.785	0.164	ND		0.783	0.164	ND		0.754	0.158	ND		0.754	0.158
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NS	NS	NS	ND		0.785	0.38	ND		0.783	0.379	ND		0.754	0.365	ND		0.754	0.365
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	NS	NS	NS	ND		0.785	0.079	ND		0.783	0.079	ND		0.754	0.076	ND		0.754	0.076
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NS	NS	NS	ND		0.785	0.275	ND		0.783	0.274	ND		0.754	0.264	ND		0.754	0.264
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	NS	NS	NS	ND		4.9	0.495	ND		4.9	0.494	ND		4.71	0.476	ND		4.71	0.476
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	NS	NS	NS	ND		4.9	1.73	ND		4.9	1.72	ND		4.71	1.66	ND		4.71	1.66
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	NS	NS	NS	ND		0.981	0.141	ND		0.979	0.141	ND		0.942	0.136	ND		0.942	0.136
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	NS	NS	NS	ND		0.785	0.144	ND		0.783	0.143	ND		0.754	0.138	ND		0.754	0.138
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	NS	NS	NS	ND		0.785	0.192	ND		0.783	0.192	ND		0.754	0.185	ND		0.754	0.185
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	NS	NS	NS	ND		0.785	0.097	ND		0.783	0.096	ND		0.754	0.093	ND		0.754	0.093
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	NS	NS	NS	ND		0.196	0.11	ND		0.196	0.11	ND		0.188	0.106	ND		0.188	0.106
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	NS	NS	NS	ND		1.96	0.501	ND		1.96	0.5	ND		1.88	0.481	ND		1.88	0.481
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NS	NS	NS	ND		0.196	0.081	ND		0.196	0.081	ND		0.188	0.078	ND		0.188	0.078
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NS	NS	NS	ND		0.196	0.098	ND		0.196	0.098	ND		0.188	0.094	ND		0.188	0.094
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	NS	NS	NS	ND		1.96	0.246	ND		1.96	0.245	ND		1.88	0.236	ND		1.88	0.236
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NS	NS	NS	ND		0.196	0.098	ND		0.196	0.098	ND		0.188	0.094	ND		0.188	0.094
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	NS	NS	NS	ND		0.392	0.093	ND		0.392	0.093	ND		0.377	0.09	ND		0.377	0.09
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	NS	NS	NS	ND		0.392	0.082	ND		0.392	0.082	ND		0.377	0.078	ND		0.377	0.078
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	NS	NS	NS	ND		0.392	0.04	ND		0.392	0.04	ND		0.377	0.038	ND		0.377	0.038
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	NS	NS	NS	ND		0.392	0.031	ND		0.392	0.031	ND		0.377	0.029	ND		0.377	0.029
Perfluorobutanesulfonic Acid (PFBS)	NS	NS	NS	ND		0.196	0.042	ND		0.196	0.042	ND		0.188	0.041	ND		0.188	0.041
Perfluorobutanoic Acid (PFBA)	NS	NS	NS	ND		0.785	0.049	ND		0.783	0.049	ND		0.754	0.048	ND		0.754	0.048
Perfluorodecanesulfonic Acid (PFDS)	NS	NS	NS	ND		0.196	0.031	ND		0.196	0.031	ND		0.188	0.03	ND		0.188	0.03
Perfluorodecanoic Acid (PFDA)	NS	NS	NS	0.075	J	0.196	0.074	ND		0.196	0.074	ND		0.188	0.071	0.09	J	0.188	0.071
Perfluorododecanesulfonic Acid (PFDoS)	NS	NS	NS	ND		0.196	0.038	ND		0.196	0.038	ND		0.188	0.036	ND		0.188	0.036
Perfluorododecanoic Acid (PFDoA)	NS	NS	NS	ND		0.196	0.04	ND		0.196	0.04	ND		0.188	0.038	ND		0.188	0.038
Perfluoroheptanesulfonic Acid (PFHpS)	NS	NS	NS	ND		0.196	0.036	ND		0.196	0.036	ND		0.188	0.035	ND		0.188	0.035
Perfluoroheptanoic Acid (PFHpA)	NS	NS	NS	ND		0.196	0.023	0.053	J	0.196	0.023	ND		0.188	0.022	0.055	J	0.188	0.022
Perfluorohexanesulfonic Acid (PFHxS)	NS	NS	NS	ND		0.196	0.058	ND		0.196	0.058	ND		0.188	0.056	ND		0.188	0.056
Perfluorohexanoic Acid (PFHxA)	NS	NS	NS	ND		0.196	0.046	ND		0.196	0.045	ND		0.188	0.044	ND		0.188	0.044
Perfluorononanesulfonic Acid (PFNS)	NS	NS	NS	ND		0.196	0.042	ND		0.196	0.042	ND		0.188	0.04	ND		0.188	0.04
Perfluorononanoic Acid (PFNA)	NS	NS	NS	0.151	J	0.196	0.077	ND		0.196	0.077	0.09	J	0.188	0.074	0.133	J	0.188	0.074
Perfluorooctanesulfonamide (PFOSA)	NS	NS	NS	ND		0.196	0.042	ND		0.196	0.042	ND		0.188	0.041	ND		0.188	0.041
Perfluorooctanesulfonic Acid (PFOS)	**440**	**1.0**	**0.88**	**0.294**		**0.196**	**0.078**	**ND**		**0.196**	**0.078**	**0.362**		**0.188**	**0.075**	**0.577**		**0.188**	**0.075**
Perfluorooctanoic Acid (PFOA)	**500**	**0.8**	**0.66**	**0.117**	**J**	**0.196**	**0.051**	**0.09**	**J**	**0.196**	**0.051**	**0.129**	**J**	**0.188**	**0.049**	**0.108**	**J**	**0.188**	**0.049**
Perfluoropentanesulfonic Acid (PFPeS)	NS	NS	NS	ND		0.196	0.023	ND		0.196	0.023	ND		0.188	0.022	ND		0.188	0.022
Perfluoropentanoic Acid (PFPeA)	NS	NS	NS	ND		0.392	0.055	ND		0.392	0.055	ND		0.377	0.053	ND		0.377	0.053
Perfluorotetradecanoic Acid (PFTeDA)	NS	NS	NS	ND		0.196	0.104	ND		0.196	0.104	ND		0.188	0.1	ND		0.188	0.1
Perfluorotridecanoic Acid (PFTrDA)	NS	NS	NS	ND		0.196	0.052	ND		0.196	0.052	ND		0.188	0.05	ND		0.188	0.05
Perfluoroundecanoic Acid (PFUnA)	NS	NS	NS	0.094	J	0.196	0.05	ND		0.196	0.05	ND		0.188	0.048	0.09	J	0.188	0.048
GENERAL CHEMISTRY																			
Solids, Total	NS	NS	NS	70.2		0.1	0.1	92.5		0.1	0.1	84.1		0.1	0.1	78.6		0.1	0.1

* Comparison is not performed on parameters with non-numeric criteria.
NS denotes No Standard
NY-RESC: New York NYCRR Part 375 Commercial Criteria, New York Restricted use Criteria
NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria
NY-PGW: New York NYCRR Part 375 Protection of Groundwater Criteria
J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

TEST PIT LOG

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 Century Hill Drive
Latham, NY 12110
(518) 786-7400 • FAX (581) 786-7299

PROJECT NAME:	HVRA - Sky Harbour South Side	CONTRACTOR	Dutchess County - Highway Dept.
PROJECT NUMBER:	18.8090	EQUIPMENT:	CAT excavator
LOGGED BY:	ML	DATE:	12/13/2023

TEST PIT NO. _21___

0'

0-6" Dark brown topsoil, grass, roots

6" - 2.0' Brown, coarse to fine SAND, little gravel, trace cobbles, moist.

2.0' - 5' 10" Light brown, medium to fine SAND, little gravel, trace cobbles

Wet soil at 5' 8"

5'

End of test pit +/- 5' 10"

10'

15'

TOTAL DEPTH: 5' 10"

WATER AT: wet at 5' 8"

NOTES: Sample TP-21S collected at 0-2";

TEST PIT LOG

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Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
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Latham, NY 12110
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PROJECT NAME:	HVRA - Sky Harbour South Side	CONTRACTOR	Dutchess County - Highway Dept.
PROJECT NUMBER:	18.8090	EQUIPMENT:	CAT excavator
LOGGED BY:	ML	DATE:	12/13/2023

TEST PIT NO. _22___

0'

0-6" Dark brown topsoil, grass, roots

6" - 6' 2" Brown, coarse to fine SAND, some gravel, trace cobbles, moist.

5'

End of test pit +/- 6' 2"

10'

15'

TOTAL DEPTH: 6' 2"

WATER AT: Not encountered

NOTES: Sample TP-22S collected at 0-2";

Sample TP-22 collected at 4-5'

TEST PIT LOG

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 Century Hill Drive
Latham, NY 12110
(518) 786-7400 • FAX (581) 786-7299

PROJECT NAME:	HVRA - Sky Harbour South Side	CONTRACTOR	Dutchess County - Highway Dept.
PROJECT NUMBER:	18.8090	EQUIPMENT:	CAT excavator
LOGGED BY:	ML	DATE:	12/13/2023

TEST PIT NO. _23___

0'

0-6" Dark brown topsoil, grass, roots

6" - 6' 8" Brown, coarse to fine SAND, some gravel, trace cobbles, moist.

3" seam of Light brown coarse to fine SAND at 4.5'

5'

End of test pit +/- 6' 8"

10'

15'

TOTAL DEPTH: 6' 8"

WATER AT: Not encountered

NOTES: Sample TP-23S collected at 0-2";

TEST PIT LOG

C.T. MALE ASSOCIATES
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Latham, NY 12110
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PROJECT NAME:	HVRA - Sky Harbour South Side	CONTRACTOR	Dutchess County - Highway Dept.
PROJECT NUMBER:	18.8090	EQUIPMENT:	CAT excavator
LOGGED BY:	ML	DATE:	12/13/2023

TEST PIT NO. _24___

0'

0-6" Dark brown topsoil, grass, roots

6" - 3.5' Brown, coarse to fine SAND, some gravel, trace cobbles, moist.

3.5' - 5' 10" Light brown coarse to fine SAND, some gravel, trace cobbles, moist.

5'

End of test pit +/- 5' 10"

10'

15'

TOTAL DEPTH: 5' 10"

WATER AT: Not encountered

NOTES: Sample TP-24S collected at 0-2";
Sample TP-24 collected at 5.0'

TEST PIT LOG

C.T. MALE ASSOCIATES
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50 Century Hill Drive
Latham, NY 12110
(518) 786-7400 • FAX (581) 786-7299

PROJECT NAME:	HVRA - Sky Harbour South Side	CONTRACTOR	Dutchess County - Highway Dept.
PROJECT NUMBER:	18.8090	EQUIPMENT:	CAT excavator
LOGGED BY:	ML	DATE:	12/13/2023

TEST PIT NO. _25___

0'

0-6" Dark brown topsoil, grass, roots

6" - 2.5' Brown, coarse to fine SAND, some gravel, trace cobbles, moist.

2.5' - 5' 8" Light brown coarse to fine SAND, little gravel, trace cobbles, moist.

5'

End of test pit +/- 5' 8"

10'

15'

TOTAL DEPTH: 5' 8"

WATER AT: Not encountered

NOTES: Sample TP-25S collected at 0-2";

ANALYTICAL REPORT

Lab Number:	L2374790
Client:	C.T. Male Associates 50 Century Hill Drive Latham, NY 12210
ATTN:	Jim Mciver
Phone:	(518) 786-7400
Project Name:	HVRA
Project Number:	18.8090
Report Date:	01/08/24

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Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (99110) , NJ (MA015), NY (11627), NC (685), OH (CL106), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2374790-01	TP-21S	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 12:40	12/18/23
L2374790-02	TP-22	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 12:15	12/18/23
L2374790-03	TP-22S	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 12:20	12/18/23
L2374790-04	TP-23S	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 11:55	12/18/23
L2374790-05	TP-24	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 11:30	12/18/23
L2374790-06	TP-24S	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 11:40	12/18/23
L2374790-07	TP-25S	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 11:45	12/18/23
L2374790-08	FD01-20231218	SOIL	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 00:00	12/18/23
L2374790-09	EQUIPMENT RINSE BLANK 01	WATER	18 GRIFFITH WAY, WAPPINGERS FALLS, NY	12/18/23 12:45	12/18/23

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Boucher

Title: Technical Director/Representative Date: 01/08/24

ORGANICS

SEMIVOLATILES

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-01
Client ID: TP-21S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:40
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 16:37
Analyst: PNB
Percent Solids: 84%

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.168	J	ng/g	0.798	0.050	1
Perfluoropentanoic Acid (PFPeA)	0.175	J	ng/g	0.399	0.056	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.798	0.081	1
Perfluorohexanoic Acid (PFHxA)	0.108	J	ng/g	0.200	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.023	1
Perfluoroheptanoic Acid (PFHpA)	0.108	J	ng/g	0.200	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	0.114	J	ng/g	0.200	0.059	1
Perfluorooctanoic Acid (PFOA)	0.240		ng/g	0.200	0.052	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.798	0.279	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.037	1
Perfluorononanoic Acid (PFNA)	0.211		ng/g	0.200	0.078	1
Perfluorooctanesulfonic Acid (PFOS)	0.554		ng/g	0.200	0.079	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.075	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.798	0.386	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.100	1
Perfluoroundecanoic Acid (PFUnA)	0.089	J	ng/g	0.200	0.051	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.041	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.053	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.106	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.798	0.098	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.798	0.146	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.038	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-01 Date Collected: 12/18/23 12:40

Client ID: TP-21S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.798	0.196	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.798	0.167	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.100	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.112	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.509	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.399	0.041	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.399	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.399	0.083	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.399	0.095	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.998	0.144	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.99	0.504	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.99	1.76	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-01 Date Collected: 12/18/23 12:40

Client ID: TP-21S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	77		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	81		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	83		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	82		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	91		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	77		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	78		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	61		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	87		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	88		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-02
Client ID: TP-22
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:15
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 16:50
Analyst: PNB
Percent Solids: 76%

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.087	J	ng/g	0.771	0.049	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.386	0.054	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.193	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.771	0.078	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.193	0.045	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.193	0.022	1
Perfluoroheptanoic Acid (PFHpA)	0.051	J	ng/g	0.193	0.022	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.193	0.057	1
Perfluorooctanoic Acid (PFOA)	0.118	J	ng/g	0.193	0.050	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.771	0.270	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.193	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.193	0.076	1
Perfluorooctanesulfonic Acid (PFOS)	0.128	J	ng/g	0.193	0.076	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.193	0.073	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.771	0.373	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.193	0.041	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.193	0.096	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.193	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.193	0.031	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.193	0.042	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.193	0.080	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.193	0.039	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.193	0.051	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.193	0.103	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.771	0.095	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.771	0.141	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.193	0.037	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-02 Date Collected: 12/18/23 12:15

Client ID: TP-22 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.771	0.189	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.771	0.161	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.193	0.096	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.193	0.108	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.93	0.241	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.93	0.492	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.386	0.039	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.386	0.030	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.386	0.080	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.386	0.092	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.964	0.139	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.82	0.487	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.82	1.70	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-02 Date Collected: 12/18/23 12:15

Client ID: TP-22 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	72		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	71		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	72		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	70		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	69		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	71		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	72		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	71		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	75		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	73		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	99		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	58		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	64		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	54		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	62		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	58		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	37		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	49		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	51		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	60		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	48		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-03
Client ID: TP-22S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:20
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 17:03
Analyst: PNB
Percent Solids: 77%

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.068	J	ng/g	0.776	0.049	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.388	0.054	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.194	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.776	0.078	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.194	0.045	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.194	0.023	1
Perfluoroheptanoic Acid (PFHpA)	0.046	J	ng/g	0.194	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.194	0.057	1
Perfluorooctanoic Acid (PFOA)	0.104	J	ng/g	0.194	0.050	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.776	0.272	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.194	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.194	0.076	1
Perfluorooctanesulfonic Acid (PFOS)	0.289		ng/g	0.194	0.077	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.194	0.073	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.776	0.376	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.194	0.041	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.194	0.097	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.194	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.194	0.031	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.194	0.042	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.194	0.080	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.194	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.194	0.051	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.194	0.103	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.776	0.095	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.776	0.142	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.194	0.037	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-03 Date Collected: 12/18/23 12:20

Client ID: TP-22S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.776	0.190	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.776	0.162	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.194	0.097	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.194	0.109	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.94	0.243	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.94	0.495	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.388	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.388	0.030	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.388	0.081	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.388	0.092	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.970	0.140	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.85	0.490	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.85	1.71	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-03 Date Collected: 12/18/23 12:20

Client ID: TP-22S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	79		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	83		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	81		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	93		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	94		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	72		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	69		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	87		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	92		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	61		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-04
Client ID: TP-23S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:55
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 16:34
Analyst: JW
Percent Solids: 70%

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:39
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.785	0.049	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.392	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.196	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.785	0.079	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.196	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.196	0.023	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.196	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.196	0.058	1
Perfluorooctanoic Acid (PFOA)	0.117	J	ng/g	0.196	0.051	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.785	0.275	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.196	0.036	1
Perfluorononanoic Acid (PFNA)	0.151	J	ng/g	0.196	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	0.294		ng/g	0.196	0.078	1
Perfluorodecanoic Acid (PFDA)	0.075	J	ng/g	0.196	0.074	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.785	0.380	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.196	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.196	0.098	1
Perfluoroundecanoic Acid (PFUnA)	0.094	J	ng/g	0.196	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.196	0.031	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.196	0.042	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.196	0.081	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.196	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.196	0.052	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.196	0.104	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.785	0.097	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.785	0.144	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.196	0.038	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-04 Date Collected: 12/18/23 11:55

Client ID: TP-23S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.785	0.192	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.785	0.164	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.196	0.098	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.196	0.110	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.96	0.246	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.96	0.501	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.392	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.392	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.392	0.082	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.392	0.093	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.981	0.141	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.90	0.495	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.90	1.73	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-04 Date Collected: 12/18/23 11:55

Client ID: TP-23S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	84		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	91		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	81		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	88		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	88		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	84		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	78		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	68		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	76		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	70		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	50		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	59		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	66		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-05
Client ID: TP-24
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:30
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 16:47
Analyst: JW
Percent Solids: 93%

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:40
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.783	0.049	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.392	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.196	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.783	0.079	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.196	0.045	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.196	0.023	1
Perfluoroheptanoic Acid (PFHpA)	0.053	J	ng/g	0.196	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.196	0.058	1
Perfluorooctanoic Acid (PFOA)	0.090	J	ng/g	0.196	0.051	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.783	0.274	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.196	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.196	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.196	0.078	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.196	0.074	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.783	0.379	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.196	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.196	0.098	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.196	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.196	0.031	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.196	0.042	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.196	0.081	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.196	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.196	0.052	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.196	0.104	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.783	0.096	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.783	0.143	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.196	0.038	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-05 Date Collected: 12/18/23 11:30

Client ID: TP-24 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.783	0.192	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.783	0.164	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.196	0.098	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.196	0.110	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.96	0.245	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.96	0.500	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.392	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.392	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.392	0.082	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.392	0.093	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.979	0.141	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.90	0.494	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.90	1.72	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-05 Date Collected: 12/18/23 11:30

Client ID: TP-24 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	101		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	102		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	84		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	87		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	79		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	85		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	88		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	94		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	57		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	73		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	79		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	48		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	73		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	62		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	61		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-06
Client ID: TP-24S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:40
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 17:25
Analyst: JW
Percent Solids: 84%

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:40
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.754	0.048	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.377	0.053	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.188	0.041	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.754	0.076	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.188	0.044	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.188	0.022	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.188	0.022	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.188	0.056	1
Perfluorooctanoic Acid (PFOA)	0.129	J	ng/g	0.188	0.049	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.754	0.264	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.188	0.035	1
Perfluorononanoic Acid (PFNA)	0.090	J	ng/g	0.188	0.074	1
Perfluorooctanesulfonic Acid (PFOS)	0.362		ng/g	0.188	0.075	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.188	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.754	0.365	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.188	0.040	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.188	0.094	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.188	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.188	0.030	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.188	0.041	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.188	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.188	0.038	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.188	0.050	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.188	0.100	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.754	0.093	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.754	0.138	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.188	0.036	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-06 Date Collected: 12/18/23 11:40

Client ID: TP-24S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.754	0.185	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.754	0.158	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.188	0.094	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.188	0.106	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.88	0.236	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.88	0.481	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.377	0.038	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.377	0.029	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.377	0.078	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.377	0.090	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.942	0.136	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.71	0.476	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.71	1.66	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-06 Date Collected: 12/18/23 11:40

Client ID: TP-24S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	80		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	90		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	76		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	84		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	74		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	80		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	81		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	87		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	89		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	102		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	99		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	93		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	60		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	85		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	86		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	71		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	70		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	78		20-150

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-07
Client ID: TP-25S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:45
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 17:38
Analyst: JW
Percent Solids: 79%

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:40
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.754	0.048	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.377	0.053	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.188	0.041	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.754	0.076	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.188	0.044	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.188	0.022	1
Perfluoroheptanoic Acid (PFHpA)	0.055	J	ng/g	0.188	0.022	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.188	0.056	1
Perfluorooctanoic Acid (PFOA)	0.108	J	ng/g	0.188	0.049	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.754	0.264	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.188	0.035	1
Perfluorononanoic Acid (PFNA)	0.133	J	ng/g	0.188	0.074	1
Perfluorooctanesulfonic Acid (PFOS)	0.577		ng/g	0.188	0.075	1
Perfluorodecanoic Acid (PFDA)	0.090	J	ng/g	0.188	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.754	0.365	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.188	0.040	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.188	0.094	1
Perfluoroundecanoic Acid (PFUnA)	0.090	J	ng/g	0.188	0.048	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.188	0.030	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.188	0.041	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.188	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.188	0.038	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.188	0.050	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.188	0.100	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.754	0.093	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.754	0.138	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.188	0.036	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-07 Date Collected: 12/18/23 11:45

Client ID: TP-25S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.754	0.185	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.754	0.158	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.188	0.094	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.188	0.106	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.88	0.236	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.88	0.481	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.377	0.038	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.377	0.029	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.377	0.078	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.377	0.090	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.942	0.136	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.71	0.476	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.71	1.66	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-07 Date Collected: 12/18/23 11:45

Client ID: TP-25S Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	91		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	77		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	82		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	81		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	85		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	94		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	66		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	82		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	80		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	66		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	68		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	87		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	87		20-150

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-08
Client ID: FD01-20231218
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 00:00
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 144,1633
Analytical Date: 01/04/24 17:51
Analyst: JW
Percent Solids: 93%

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:40
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.787	0.050	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.394	0.055	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.197	0.043	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.787	0.080	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.197	0.046	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.197	0.023	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.197	0.023	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.197	0.058	1
Perfluorooctanoic Acid (PFOA)	0.084	J	ng/g	0.197	0.051	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.787	0.276	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.197	0.036	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.197	0.077	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.197	0.078	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.197	0.074	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.787	0.381	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.197	0.042	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.197	0.098	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.197	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.197	0.032	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.197	0.043	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.197	0.081	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.197	0.040	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.197	0.052	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.197	0.105	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.787	0.097	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.787	0.144	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.197	0.038	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-08 Date Collected: 12/18/23 00:00

Client ID: FD01-20231218 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.787	0.193	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.787	0.164	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.197	0.098	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.197	0.110	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.97	0.246	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.97	0.502	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.394	0.040	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.394	0.031	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.394	0.082	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.394	0.094	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.984	0.142	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.92	0.497	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.92	1.73	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-08 Date Collected: 12/18/23 00:00

Client ID: FD01-20231218 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	99		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	76		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	70		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	80		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	79		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	59		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	83		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	54		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	68		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	88		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	85		20-150

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-09
Client ID: EQUIPMENT RINSE BLANK 01
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:45
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 144,1633
Analytical Date: 12/30/23 17:17
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 12/22/23 11:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.02	0.963	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.01	0.805	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.50	0.504	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.02	1.57	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.50	0.444	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.50	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.50	0.655	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.02	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.50	0.474	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.50	0.685	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.609	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.02	2.34	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.820	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.655	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.813	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.692	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.564	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.399	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.02	0.843	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.02	0.948	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.572	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-09 Date Collected: 12/18/23 12:45

Client ID: EQUIPMENT RINSE BLANK 01 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.02	1.24	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.02	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.655	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.692	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.54	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.429	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.399	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.01	0.331	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.78	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.52	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.80	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.94	1

Project Name: HVRA **Lab Number:** L2374790

Project Number: 18.8090 **Report Date:** 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-09 Date Collected: 12/18/23 12:45

Client ID: EQUIPMENT RINSE BLANK 01 Date Received: 12/18/23

Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	93		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	81		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	77		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	77		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	78		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	74		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	45		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	61		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	55		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	63		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	51		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	59		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	46		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	47		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	84		20-150

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 12/30/23 16:38
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 12/22/23 11:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 09 Batch: WG1867337-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 12/30/23 16:38
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 12/22/23 11:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 09 Batch: WG1867337-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 12/30/23 16:38
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 12/22/23 11:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 09 Batch: WG1867337-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	90		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	77		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	74		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	94		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	75		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	79		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	61		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	81		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	73		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	56		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	74		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	63		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	50		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	80		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92		20-150

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 13:19
Analyst: PNB

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1868770-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.050
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.056
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.043
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.081
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.046
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.023
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.023
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.059
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.052
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.280
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.037
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.078
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.079
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.075
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.387
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.042
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.100
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.051
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.032
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.043
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.082
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.041
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.053
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.106
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.098
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.146
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.038

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 13:19
Analyst: PNB

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1868770-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.196
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.167
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.100
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.112
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.510
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.041
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.031
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.083
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.095
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.144
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.505
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.76

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 13:19
Analyst: PNB

Extraction Method: EPA 1633
Extraction Date: 12/28/23 05:13
Cleanup Method: EPA 1633
Cleanup Date: 12/29/23

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1868770-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	83		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	79		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	78		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	77		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	59		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	35		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	45		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	45		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	64		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	58		20-150

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 15:55
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:39
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 04-08 Batch: WG1869725-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.050
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.056
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.043
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.081
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.046
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.023
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.023
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.059
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.052
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.280
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.037
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.078
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.079
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.075
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.387
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.042
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.100
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.051
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.032
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.043
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.082
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.041
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.053
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.106
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.098
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.146
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.038

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 15:55
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:39
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 04-08 Batch: WG1869725-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.196
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.167
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.100
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.112
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.250
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.510
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.041
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.031
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.083
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.095
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.144
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	0.505
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.76

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 01/04/24 15:55
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 12/30/23 09:39
Cleanup Method: EPA 1633
Cleanup Date: 01/02/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 04-08 Batch: WG1869725-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	86		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	102		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	96		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	77		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	94		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	84		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	58		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	36		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	70		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	87		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89		20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	114		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	124		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	116		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	113		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	115		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	121		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	121		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	143		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	107		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	122		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	127		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	96		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	120		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	110		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	92		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	104		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	96		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	112		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L2374790

Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	108		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	129		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	119		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	110		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	95		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	90		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	103		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	90		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	105		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	104		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	97		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	99		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	120		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	128		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	98		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	74		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	46		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L2374790

Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	85				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	101				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	80				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	89				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	77				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	73				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	71				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	55				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	68				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	64				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	43				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	50				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	79				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-3								
Perfluorobutanoic Acid (PFBA)	104		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	110		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	103		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	108		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	110		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	116		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	102		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	116		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	112		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	144		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	95		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	124		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	121		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	97		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	119		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	102		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	87		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	115		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	109		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	97		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-3								
Perfluorotridecanoic Acid (PFTrDA)	88		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	103		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	110		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	110		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	101		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	77		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	69		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	111		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	116		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	106		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	110		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	96		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	100		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	119		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	150		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	111		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	83		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	53		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 09 Batch: WG1867337-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	95				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	88				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	90				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	78				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	76				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	75				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	96				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	65				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	54				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	72				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	61				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	58				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	80				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	50				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	56				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	84				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	108		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	104		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	101		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	109		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	103		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	110		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	108		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	110		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	108		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	96		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	107		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	121		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	89		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	101		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	105		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	112		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	99		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	100		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	117		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	98		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	75		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	117		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	117		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	108		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	69		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	104		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	86		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	84		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	94		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	114		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	105		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	121		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	115		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	118		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	96		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	92		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	56		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	88				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	84				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	82				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	80				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	83				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	83				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	78				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	64				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	67				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	65				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	37				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	53				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	64				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-3								
Perfluorobutanoic Acid (PFBA)	96		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	96		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	98		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	95		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	100		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	116		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	100		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	99		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	90		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	89		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	101		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	106		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	99		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	86		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	99		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	103		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	103		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	91		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	89		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	96		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	120		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	94		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-3								
Perfluorotridecanoic Acid (PFTrDA)	82		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	96		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	106		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	108		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	71		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	97		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	91		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	95		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	99		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	102		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	106		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	118		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	112		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	115		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	93		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	101		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	76		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1868770-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	87				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	83				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	92				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	92				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	79				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	70				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	77				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	75				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	52				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	56				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	55				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	71				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	68				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	113		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	114		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	104		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	106		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	107		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	108		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	116		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	104		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	106		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	145		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	108		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	130		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	100		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	110		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	95		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	126		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	110		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	79		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	128		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	81		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	112		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	121		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	126		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	47		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	89		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	75		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	119		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	125		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	102		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	108		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	92		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	107		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	119		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	107		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	96		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	82		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	64		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	78				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	82				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	93				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	76				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	81				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	71				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	66				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	73				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	67				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	53				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	70				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	56				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	28				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	67				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	52				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	52				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	66				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	69				20-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-3								
Perfluorobutanoic Acid (PFBA)	105		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	114		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	108		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	105		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	111		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	113		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	104		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	102		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	106		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	131		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	103		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	133		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	110		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	116		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	92		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	120		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	107		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	87		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	126		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	104		-		40-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-3								
Perfluorotridecanoic Acid (PFTrDA)	81		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	107		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	112		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	112		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	61		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	103		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	89		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	124		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	115		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	110		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	113		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	90		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	102		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	112		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	107		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	91		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	83		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	74		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 Batch: WG1869725-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	105				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	96				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	87				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	78				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	81				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	84				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	86				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	76				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	59				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	61				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	36				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	59				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	58				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	75				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	81				20-150

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1869725-4 WG1869725-5 QC Sample: L2374790-05 Client ID: TP-24												
Perfluorobutanoic Acid (PFBA)	ND	7.89	8.52	108		8.42	107		40-150	1		30
Perfluoropentanoic Acid (PFPeA)	ND	3.94	4.46	113		4.41	112		40-150	1		30
Perfluorobutanesulfonic Acid (PFBS)	ND	1.75	2.00	114		2.14	123		40-150	7		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	7.4	8.33	113		8.06	109		40-150	3		30
Perfluorohexanoic Acid (PFHxA)	ND	1.97	2.35	119		2.01	102		40-150	16		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	1.86	2.25	121		2.30	124		40-150	2		30
Perfluoroheptanoic Acid (PFHpA)	0.053J	1.97	2.19	108		2.23	111		40-150	2		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.8	1.91	106		1.84	102		40-150	4		30
Perfluorooctanoic Acid (PFOA)	0.090J	1.97	2.14	104		1.96	95		40-150	9		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	7.5	8.24	110		7.95	106		40-150	4		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.88	2.27	121		2.28	122		40-150	0		30
Perfluorononanoic Acid (PFNA)	ND	1.97	2.32	118		2.35	120		40-150	1		30
Perfluorooctanesulfonic Acid (PFOS)	ND	1.83	2.24	122		2.20	121		40-150	2		30
Perfluorodecanoic Acid (PFDA)	ND	1.97	1.97	100		2.26	115		40-150	14		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	7.58	8.46	112		7.85	104		40-150	7		30
Perfluorononanesulfonic Acid (PFNS)	ND	1.9	1.68	89		1.73	92		40-150	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.97	2.56	130		2.33	119		40-150	9		30
Perfluoroundecanoic Acid (PFUnA)	ND	1.97	2.09	106		2.05	104		40-150	2		30
Perfluorodecanesulfonic Acid (PFDS)	ND	1.9	1.64	86		1.80	95		40-150	9		30
Perfluorooctanesulfonamide (PFOSA)	ND	1.97	1.96F	99		1.94	99		40-150	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.97	2.26	115		2.04	104		40-150	10		30
Perfluorododecanoic Acid (PFDoA)	ND	1.97	2.25	114		2.00	102		40-150	12		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1869725-4 WG1869725-5 QC Sample: L2374790-05 Client ID: TP-24												
Perfluorotridecanoic Acid (PFTrDA)	ND	1.97	1.54	78		1.61	82		40-150	4		30
Perfluorotetradecanoic Acid (PFTeDA)	ND	1.97	2.15	109		2.09	106		40-150	3		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	7.89	8.65	110		8.95	114		40-150	3		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	7.46	8.98	120		9.72	131		40-150	8		30
Perfluorododecanesulfonic Acid (PFDoS)	ND	1.91	1.17	61		1.52	80		40-150	26		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	7.38	7.79	106		7.50	102		40-150	4		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	7.46	7.09	95		7.16	96		40-150	1		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.97	2.36	120		2.36	120		40-150	0		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.97	2.36	120		2.32	118		40-150	2		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	19.7	21.9	111		21.3	108		40-150	3		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	19.7	23.1	117		21.7	110		40-150	6		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.94	3.86	98		3.69	94		40-150	5		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.94	4.10	104		4.10	104		40-150	0		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.51	4.79	136		4.18	119		40-150	14		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.94	5.06	128		4.53	115		40-150	11		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND	9.86	9.74	99		9.72	99		40-150	0		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	49.3	45.0	91		33.8	69		40-150	28		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	49.3	32.9	67		30.1	61		40-150	9		30

Matrix Spike Analysis
Batch Quality Control

Project Name: HVRA
Project Number: 18.8090
Lab Number: L2374790
Report Date: 01/08/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1869725-4 WG1869725-5 QC Sample: L2374790-05 Client ID: TP-24												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		82		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		96		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	90		88		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		51		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		67		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	86		69		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	68		53		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	83		81		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		68		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	83		82		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	60		51		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	84		68		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		86		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	81		79		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	82		68		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	81		83		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	90		84		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	66		68		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	34		41		20-150
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		79		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	96		92		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		75		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		82		20-150

Matrix Spike Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L2374790

Report Date: 01/08/24

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1869725-4 WG1869725-5 QC Sample: L2374790-05 Client ID: TP-24												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	79		69		20-150

INORGANICS
&
MISCELLANEOUS

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-01
Client ID: TP-21S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:40
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.2		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-02
Client ID: TP-22
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:15
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	75.8		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-03
Client ID: TP-22S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 12:20
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.4		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-04
Client ID: TP-23S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:55
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	70.2		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-05
Client ID: TP-24
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:30
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.5		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-06
Client ID: TP-24S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:40
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.1		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-07
Client ID: TP-25S
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 11:45
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	78.6		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

SAMPLE RESULTS

Lab ID: L2374790-08
Client ID: FD01-20231218
Sample Location: 18 GRIFFITH WAY, WAPPINGERS FALLS, NY

Date Collected: 12/18/23 00:00
Date Received: 12/18/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.7		%	0.100	0.100	1	-	12/20/23 00:06	121,2540G	CLF

Lab Duplicate Analysis

Batch Quality Control

Project Name: HVRA

Project Number: 18.8090

Lab Number: L2374790

Report Date: 01/08/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1866071-1 QC Sample: L2374790-05 Client ID: TP-24						
Solids, Total	92.5	91.4	%	1		10

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374790-01A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-01B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-02A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-02B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-03A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-03B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-04A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-04B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-05A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-05A1	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-05A2	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-05B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-05B1	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-05B2	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-06A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-06B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-07A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-07B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-08A	Plastic 8oz unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(90)
L2374790-08B	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		A2-TS(7)
L2374790-09A	Plastic 500ml unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(28)
L2374790-09B	Plastic 500ml unpreserved	A	NA		5.3	Y	Absent		A2-1633-DRAFT(28)

*Values in parentheses indicate holding time in days

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: HVRA
Project Number: 18.8090

Lab Number: L2374790
Report Date: 01/08/24

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	HVRA	**Lab Number:**	L2374790
Project Number:	18.8090	**Report Date:**	01/08/24

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

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320 Forbes Blvd
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Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 12/19/23

ALPHA Job #: L2374790

Client Information

Client: C.T. Male Associates
Address: 50 century Hill Dr. Latham, NY 12110
Phone: 518-786-7400
Fax:
Email: J.mciver@ctmale.com

Project Information

Project Name: HVRA
Project Location: 18 Griffith way, Wappingers Falls, NY
Project # 18.8090
(Use Project name as Project #) ☐
Project Manager: Jim McIver / Eric White
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information

☒ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please also send results to ewhite@ctmale.com and to mloughlin@ctmale.com

Please specify Metals or TAL.

ANALYSIS

PFAS EPA method 1633
TS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	TS	Sample Specific Comments	Total Bottle
74790-01	TP-21S	12/18/23	12:40	Soil	ML	✓	✓		2
-02	TP-22		12:15		ML	✓	✓		2
-03	TP-22S		12:20		ML	✓	✓		2
-04	TP-23S		11:55		ML	✓	✓		2
-05	TP-24		11:30		ML	✓	✓	MS/MSD	6
-06	TP-24S		11:40		ML	✓	✓		2
-07	TP-25S		11:45		ML	✓	✓		2
-08	FD01-20231218		—		ML	✓	✓		2
-09	Equipment Rinse Blank 01		12:45	Water	ML	✓			2

Container Type: P P
Preservative: A A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/18/23 15:22		12/18/23 1522
AR	12/18/23 1522		12/19/23 0030
KB	12/19/23 1100		12/19/23 1500
A. Ruiz AAL	12/19/23 1600		12/19/23 16:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)