

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
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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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**DRAFT SITE CHARACTERIZATION REPORT
HUDSON VALLEY REGIONAL AIRPORT SITE
18 GRIFFITH WAY, TOWN OF WAPPINGER
DUTCHESS COUNTY, NEW YORK**

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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
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) as a result of the presence of combined perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at concentrations in one of the potable drinking water supplies at the Site above the 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 Investigation Report (SCIR) 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 SCIR. The following summarizes the additional work required by NYSDEC/NYSDOH to for consideration in approving the SCIR:

- 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 initial phase of the SC 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

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.

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 hangars 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 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 Hangar. 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, 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 an industrial activity, NYSDEC Permit ID# NYR00E169. There are seven outfalls listed in the 2012 first quarter inspection associated with the airport and the SPDES storm water permit. Stormwater at the airport flows into various 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. 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 and cyanide, pesticides, and PCBs.
5. AOC-5, Stormwater Outfalls: Airport personnel actively sample seven Outfall locations as part of their stormwater State Pollution Discharge Elimination System (SPDES) general permit. 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. Stormwater and sediment samples were proposed to be collected at six outfalls to the north of the North/South runway and analyzed for PFAS and 1,4-Dioxane. Of note, two of the proposed outfalls located north of Runway 24 were not found. Airport personnel informed C.T. Male that they have no recollection of outfalls being present in this area. Storm drainage structures and swales are present in the same general area, which according to Airport personnel, were installed approximately five years ago during construction of the access ramp to Runway 24. C.T. Male collected a stormwater sample from two of the storm drains and a sediment sample from each respective swale. A stormwater and sediment sample collected at the southern outfall, located adjacent to the main terminal and New Hackensack Road, 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 Hanger, Site No. 314101): The two hangars that AAG currently leases from Dutchess County Airport are also known as the former Flagship Hanger and former IBM Hanger. 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 Hanger (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.

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 western 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. 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 $\frac{1}{4}$ to $\frac{1}{2}$ mile radius of the southeastern corner of the Site requesting access for well testing. Forty-one (41) positive responses were received, and these locations were subsequently sampled. Sample locations and corresponding concentrations of PFOA / PFOS are shown on Figure 12.

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.
- Two of the proposed outfalls located north of Runway 24 were not located. C.T. Male was informed by Airport personnel that there are no outfalls in this area of the Site. Therefore, C.T. Male collected a stormwater sample from two of the storm drains and a sediment sample from each respective swale located in the same general area. These sampling locations are denoted as Outfall-006 and Outfall-007.

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 in order 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 of the six 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 C. 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		

Monitoring Well ID	Date Collected	Area of Concern	Analyses*
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 outfall locations, as well as 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 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 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 at the laboratory 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 on-Site drinking water samples were analyzed at the laboratory for PFAS, 1,4-Dioxane, SVOCs, PCBs, and metals.

Off-Site drinking water wells were collected from forty-one (41) potable wells near the Site in 2021. 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 D.

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 E. Data Usability Summary Reports (DUSRs) are included in Appendix F. 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 of the potable drinking water supplies at the Site above the health advisory value of 70 parts per trillion 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 an 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 capping 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, thrust 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 G.

Confining Layers and Aquitards

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-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.

Pumping Influences

On and off-Site pumping influences can affect the observed flow patterns in groundwater at and surrounding the Site. Due to the nature of water supply wells in the region, typically installed as an open borehole in rock with overburden entirely cased off, it is likely in most instances that the effects of pumping nearby wells would be most prominent in the bedrock aquifer. Any off-Site water supply well currently in operation has the potential to influence groundwater flow, which in turn could have minimal to drastic effects on contaminant migration. At this time, off-Site locations of significant pumping influence are not entirely known. However, the large residential/commercial developments to the east and southeast of the Site are suspect influencers for bedrock groundwater flow and require further evaluation.

On-Site, the observed trend of groundwater flow in the bedrock aquifer implies that well DW-1 may have likely been in use as a water supply well. Pumping in DW-1 may have affected bedrock groundwater flow in the area between the Former IBM and Flagship Hangars, for the water level events completed on March 25 and May 28, 2021 respectively. However, the airport is now connected to a public water supply and DW-1 has been removed from service.

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. In order to assist in the review of the data 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
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

AOC	Media	Table(s)	Figure(s)
Off-Site Locations	Surface Water	Not Applicable	8
	Drinking Water	41	12

Compounds detected in the various media analyzed during this SC were compared to the following New York State guidance documents and standards:

- 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.

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 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 USEPA Health Advisory level of 70 ppt in drinking water. At MW-3S, PFOA was detected in exceedance of the 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. Currently there are no NYSDEC regulatory standards or guidance values for 1,4-Dioxane in groundwater. 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 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 at MW-29. Currently there are no NYSDEC

regulatory standards or guidance values for 1,4-Dioxane in groundwater. 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. 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 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 7690 ppb and Total Manganese was detected at a concentration of 1657 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. 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 a southern outfall, 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 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 NYSDEC concentrations for Unrestricted SCO in the sediment sample. Acetone was detected in the sediment sample at a concentration of 0.058 ppb, in exceedance of the respective NYSDEC Unrestricted SCO of 0.05 ppb. However, Acetone is commonly identified as a laboratory artifact and are not believed to be related to site operations. No other VOCs exceeded their respective NYSDEC concentration for Unrestricted SCO. 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 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 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 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 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 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 non-detect in the drinking water sample.

1,4-Dioxane was detected at 0.254 ppb in the drinking water sample. Currently there are no NYDEC regulatory standards or guidance values for 1,4-Dioxane in drinking water. 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 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 non-detect for PFAS.
- MW103 sampling results detected one PFAS compound. PFOA and PFOS were non-detect.

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 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-one (41) 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, 1,4-Dioxane. Sample results are discussed below, and the reported laboratory results are presented in Table 41.

Additionally, 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.

5.11.1 Analytical Results – Off-Site Locations; Drinking Water

Analytical test results were compared to the 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. Currently there are no USEPA or NYSDEC regulatory standards or guidance values for 1,4-Dioxane in drinking water. Figure 12 depicts the drinking water concentrations of PFOA and PFOS at each well.

Of the forty-one (41) drinking water wells that were sampled, three (3) locations, Map IDs: A14, A15 and Location A1, had results that were reported above the USEPA HAL of 70ppt. Location A1 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, Location D, A18/Location E, Location D and A34 had reported concentrations of either PFOA or PFOS above the NYS MCL of 10ppt but

below the USEPA HA of 70ppt. Map ID A4 is situated immediately adjacent to the southeastern site boundary. Location D, A18/Location E, Location D and A34 are located east and upgradient of the subject Site.

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 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

There 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

There 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 NYSDEC Unrestricted SCO 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) exceeded NYSDEC SCO in surface water at Outfall-001, AOC-5. The following SVOCs were also detected at this location in exceedance of their respective NYSDEC SCO 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 the off-Site sampling location at 1581 NY-376. There are currently no NYDEC regulatory standards or guidance values for 1,4-Dioxane in water. 1,4-Dioxane was not detected in any soil or sediment sample.

6.3.1 PFAS in Water

PFAS were detected widely across the Site in groundwater, surface water, and potable drinking water wells. Exceedances of the USEPA Health Advisory level of 70 ppt² for PFOS and/or PFOA were detected in the following sampling locations: MW104 (downgradient AFFF testing area); MW-2S and MW-3S (downgradient of the Former Balefill Landfill); MW-20 (downgradient of the Former Dutchess County Landfill); A-21G, A-21R, A-21S, ME-18, MW-4, and MW-6 (AAG Hangars); MW100 (ARFF / Maintenance Building area); Fire Pond-01 and Fire Pond-02 (Fire Pond Surface Water).

PFAS in water was detected in MW-3S at the former Balefill Landfill. Detections in MW-2S, which is also downgradient to the Balefill were also identified. Other downgradient monitoring wells on the Site (i.e. MW101 and MW102), 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 sampling location MW104 within the AFFF testing area also displayed elevated concentrations of PFAS. Additionally, upgradient location MW103 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 USEPA Health Advisory level of 70 ppt for PFOA and PFOS were found in pre-existing wells with the AAG Hangars area. Additionally, PFOA and PFOS 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 CVOC contamination in this area, remedies selected and put into effect following prior

² The USEPA Health Advisory level of 70 ppt for drinking water was used for comparison purposes.

environmental investigations in this area were not designed to target and treat PFAS contamination.

The Firefighting AFFF Testing Area, Fire Pond, and ARFF / Maintenance Building areas all exhibited elevated concentrations of PFAS in groundwater and surface water. These three 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 Soils and Sediment

PFAS were detected in the surface soil, subsurface soil and sediment samples at each AOC in which these media were sampled. PFAS concentrations in soils generally displayed the same relative trends as the groundwater and surface water detections described above. However, there are currently no NYSDEC regulatory standards or guidance values for PFAS in soils.

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 HAL of 70 ppt. Each of these sampling locations exists Northeast and upgradient of the Site hydraulically. This suggests there may be other localized or regional sources of PFAS contamination.

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 2016³ 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 Vermont⁴ 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.

³ Rankin, Keegan & A Mabury, Scott & M Jenkins, Thomas & Washington, John. (2016). A North American and global survey of perfluoroalkyl substances in surface soils: Distribution patterns and mode of occurrence. *Chemosphere*. 161. 333-341. 10.1016/j.chemosphere.2016.06.109.

⁴ Zhu, et al. 2019. *PFAS Background in Vermont Shallow Soils*

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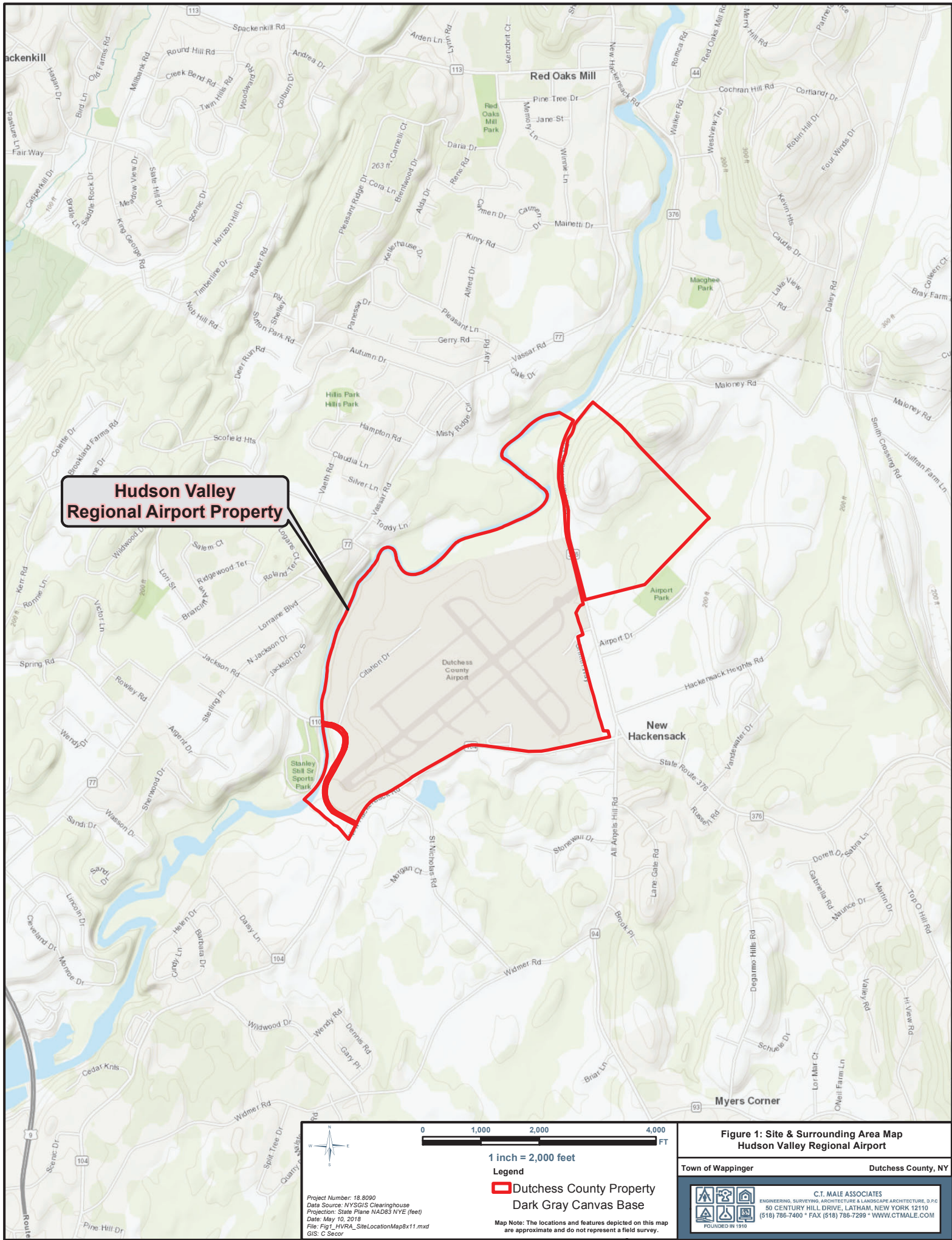
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C.T. MALE ASSOCIATES

FIGURES





**Hudson Valley
Regional Airport Property**



0 1,000 2,000 4,000
FT

1 inch = 2,000 feet

Legend

-  Dutchess County Property
-  Dark Gray Canvas Base

Project Number: 18.090
Data Source: NYGIS Clearinghouse
Projection: State Plane NAD83 NYE (feet)
Date: May 10, 2018
File: Fig1_HVRA_SiteLocationMap8x11.mxd
GIS: C. Secor

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

**Figure 1: Site & Surrounding Area Map
Hudson Valley Regional Airport**

Town of Wappinger

Dutchess County, NY



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**Figure 3: Groundwater Flow Map
Hudson Valley Regional Airport**

Town of Wappinger

Dutchess County, NY

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0 300 600 1,200
FT

1 inch = 600 feet

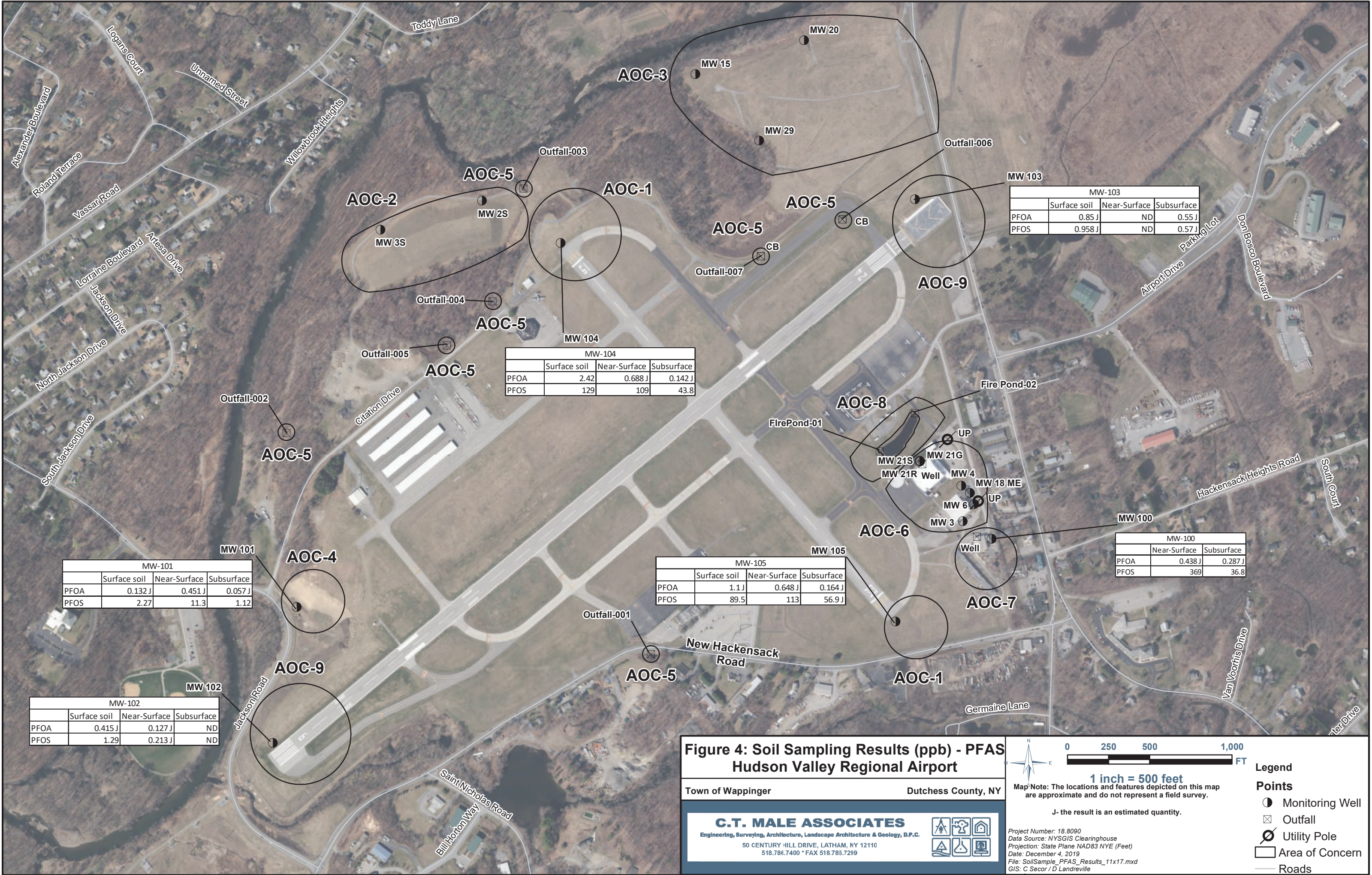
Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

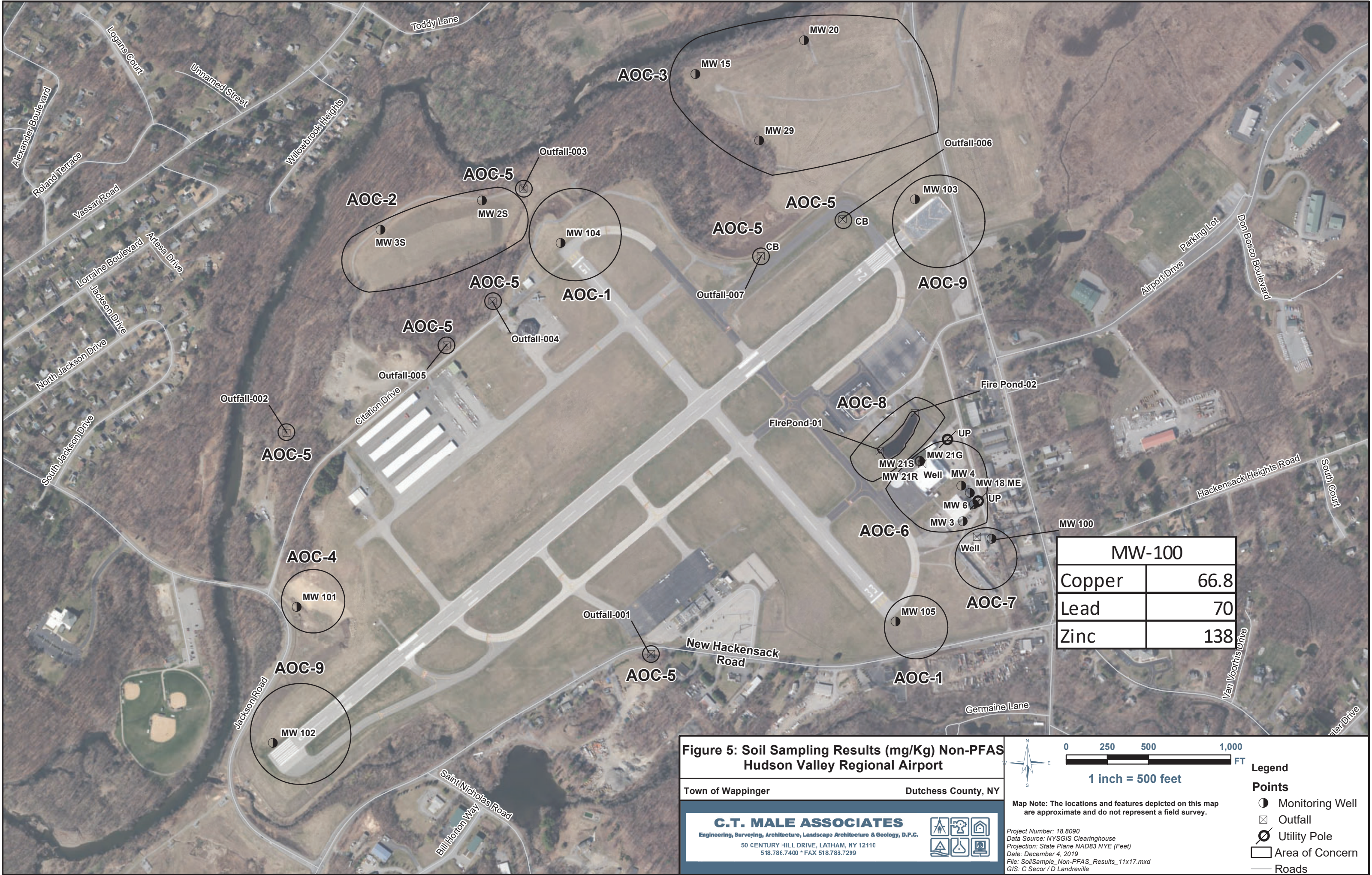
Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: 8/20/2021
File:
GIS: D Landreville

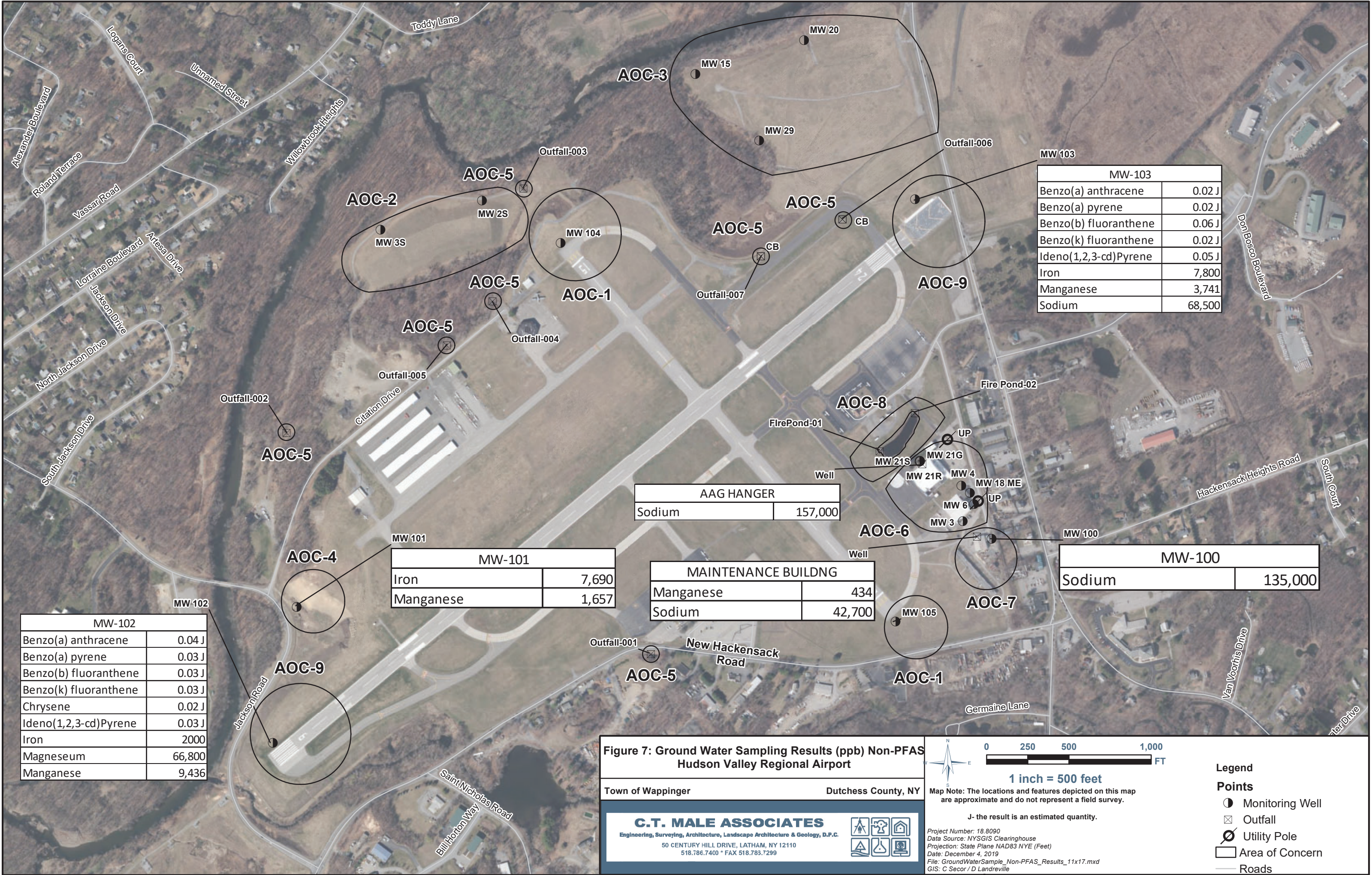
LEGEND

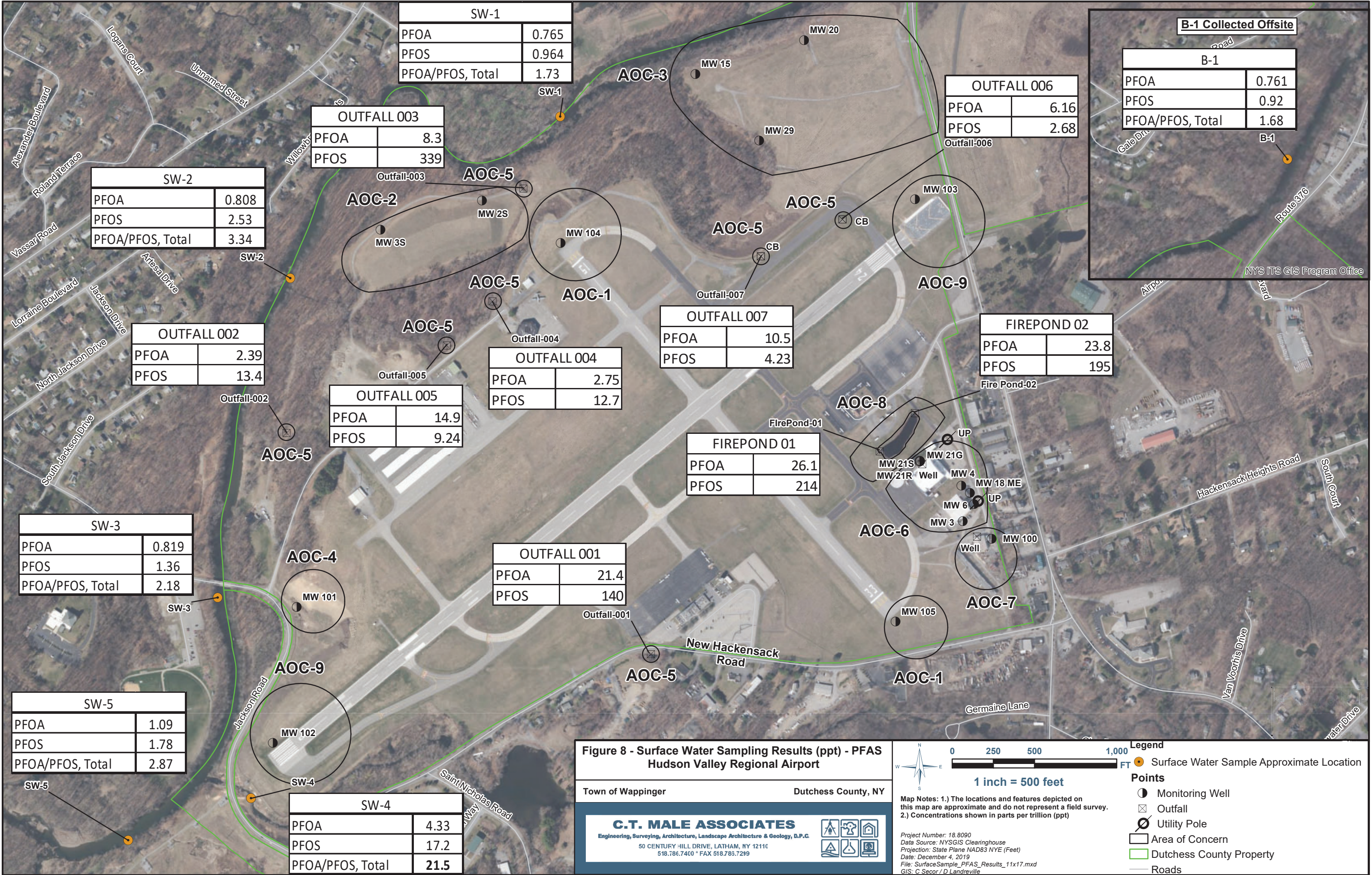
- Inferred Groundwater Flow Direction

- Inferred Ground Water Level Contour (ft)









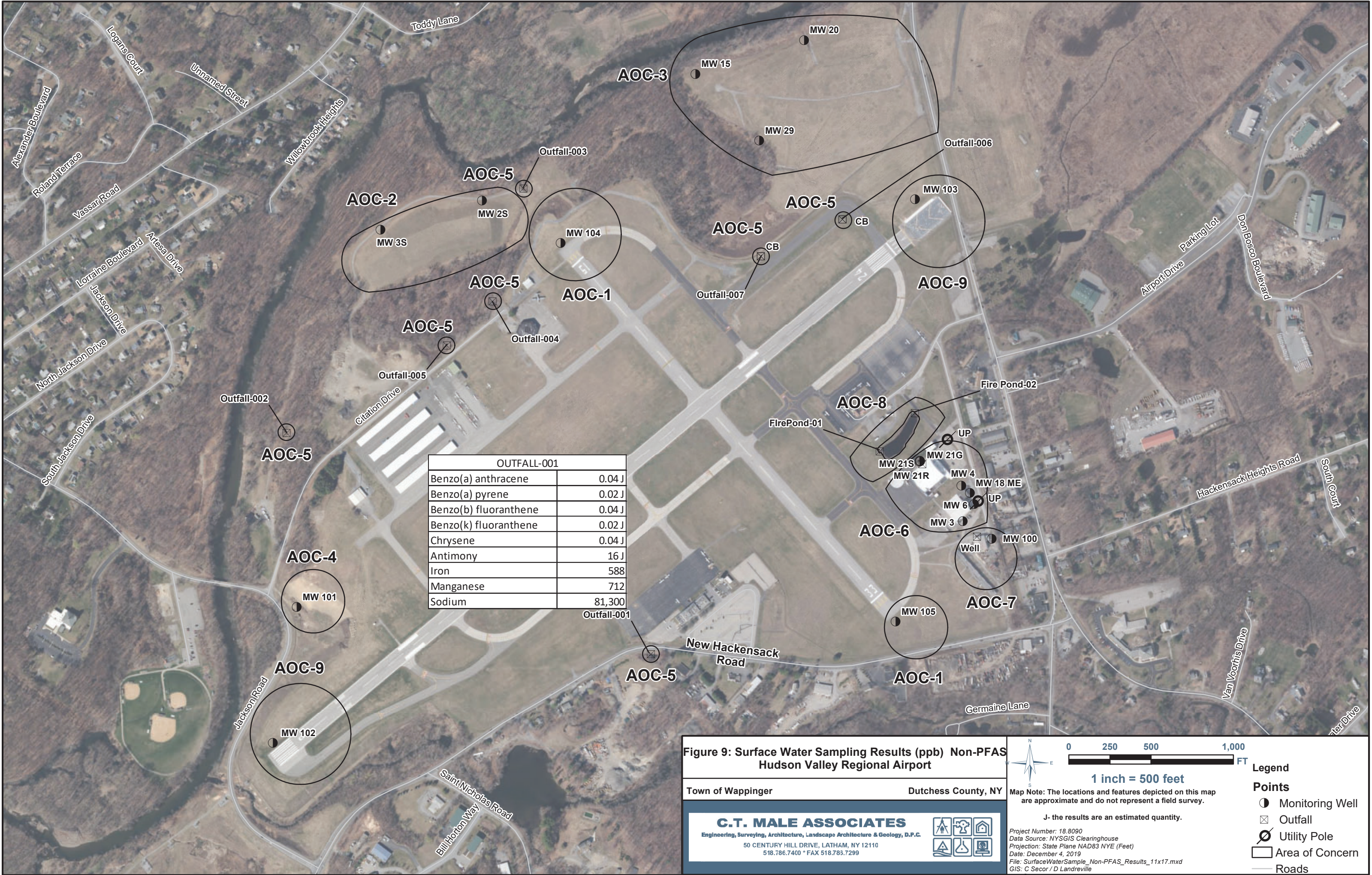


Figure 9: Surface Water Sampling Results (ppb) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger Dutchess County, NY

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1 inch = 500 feet

Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

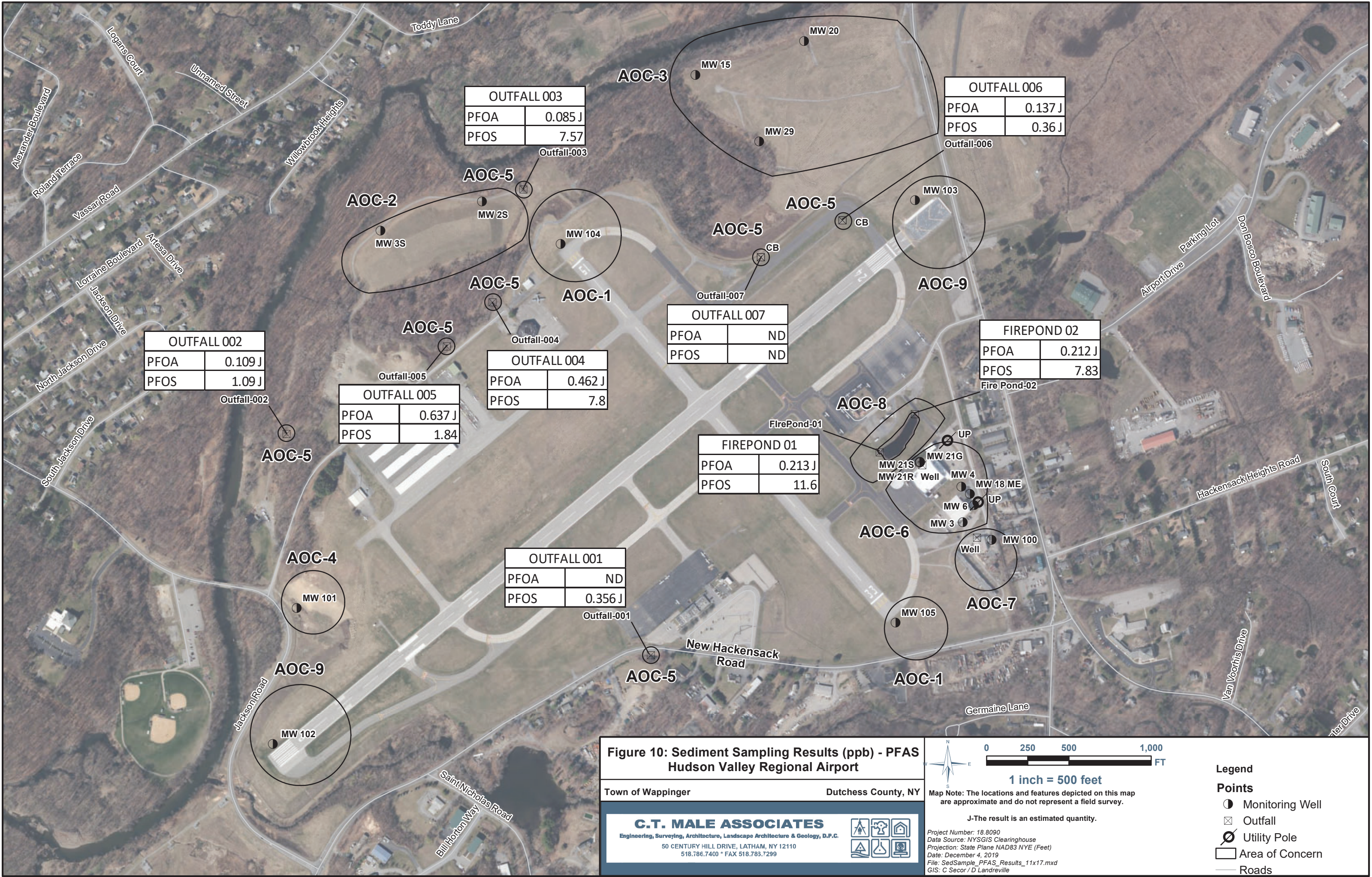
J- the results are an estimated quantity.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: December 4, 2019
File: SurfaceWaterSample_Non-PFAS_Results_11x17.mxd
GIS: C Secor / D Landreville

Legend

Points

- Monitoring Well
- Outfall
- Utility Pole
- Area of Concern
- Roads



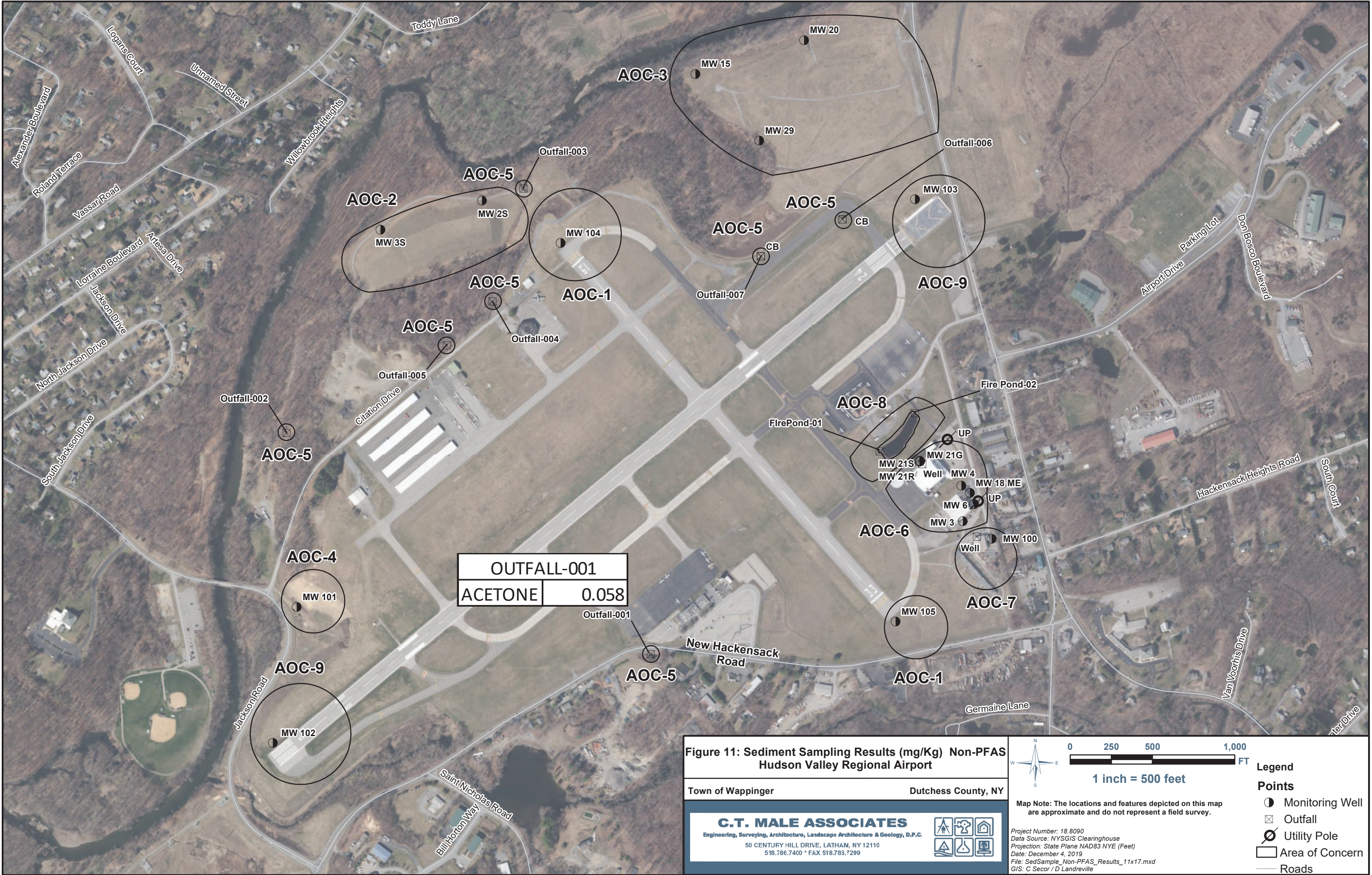
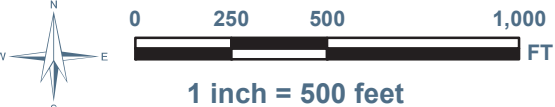


Figure 11: Sediment Sampling Results (mg/Kg) Non-PFAS
Hudson Valley Regional Airport

Town of Wappinger Dutchess County, NY

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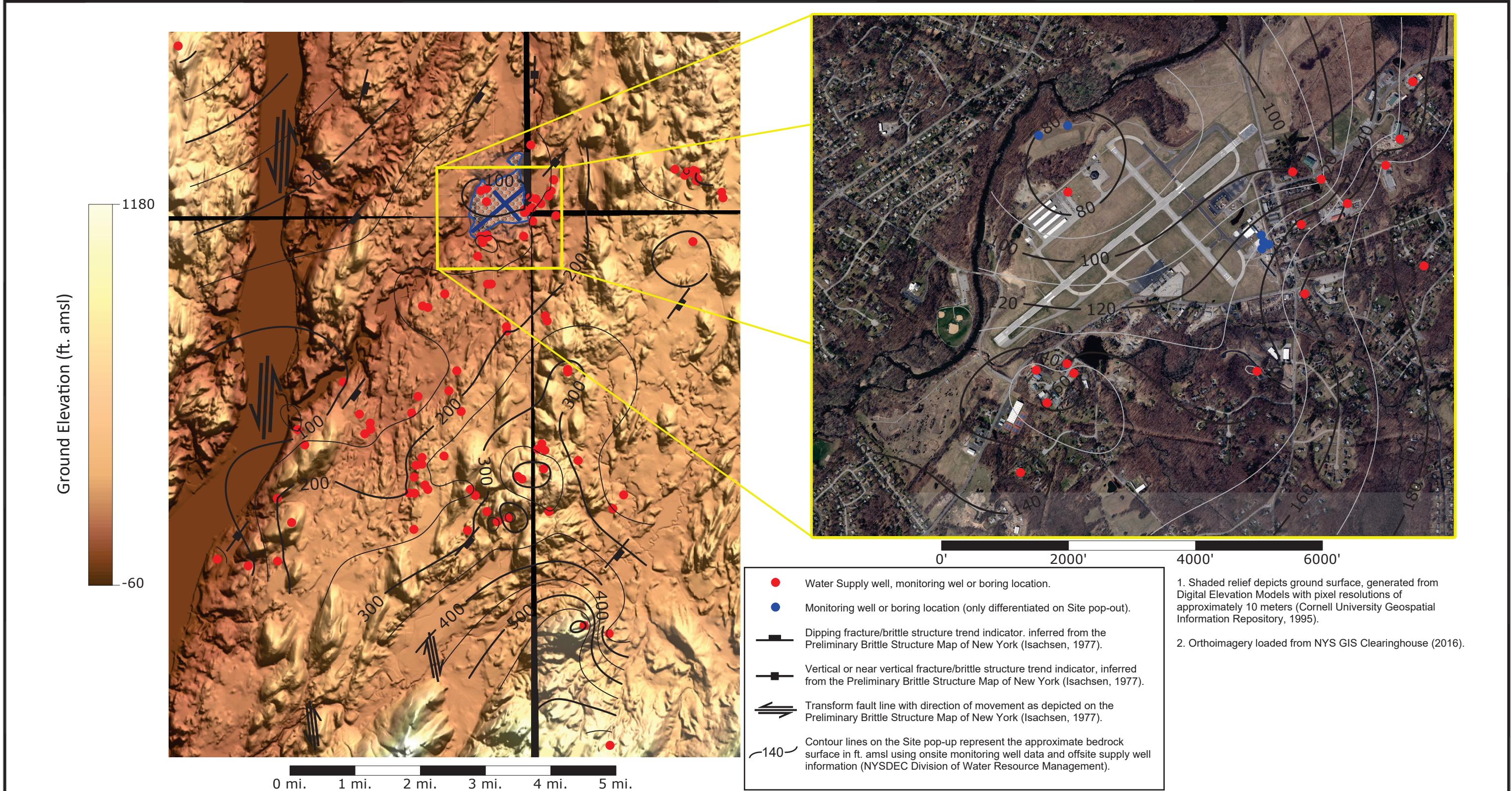


Map Note: The locations and features depicted on this map are approximate and do not represent a field survey.

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (Feet)
Date: December 4, 2019
File: SedSample_Non-PFAS_Results_11x17.mxd
GIS: C Secor / D Landreville

- Legend**
- Points**
- Monitoring Well
 - Outfall
 - Utility Pole
 - Area of Concern
 - Roads





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.	UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW.
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⑨					

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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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			1842		1.89	0.223	-		-	-

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.

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:	0.0' - 0.5'				0.5' - 2.0'				9.5' - 10.5'				0.0' - 0.5'				0.5' - 2.0'				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 (PFTTrDA)	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			131.4		1.04	0.044	109.7	J	1.06	0.044	43.9	J	1.02	0.043	90.6	J	1.45	0.061	113.6	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:
(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

	CAS	SAMPLE ID: LAB ID: COLLECTION DATE: SAMPLE MATRIX: NY-AWQS ⁽¹⁾	HVRA-BFL-2S-190801				HVRA-BFL2S-190801				HVRA-BFL-3S-190801			
			L1934623-02				L1934623-02 R1				L1934623-01			
			8/1/2019				8/1/2019				8/1/2019			
			WATER				WATER				WATER			
ANALYTE	CAS		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	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	-		-	-	1.62	J	1.99	0.801
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.97	0.638	-		-	-	0.793	J	1.99	0.645
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	7.11		1.97	0.234	-		-	-	2.31		1.99	0.237
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	9.43		1.97	0.402	-		-	-	13.6		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	-		-	-	0.307	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	-		-	-	8.99		1.99	0.224
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	663		1.97	0.37	-		-	-	7.76		1.99	0.374
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	58.2		1.97	0.323	-		-	-	13.2		1.99	0.327
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.547	J	1.97	0.307	-		-	-	0.916	J	1.99	0.311
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.97	0.571	-		-	-	0.741	J	1.99	0.578
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	70	932		1.97	0.496	-		-	-	21.4		1.99	0.502
Perfluorooctanoic Acid (PFOA)	335-67-1	70	22.5		1.97	0.232	-		-	-	35.8		1.99	0.235
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	10.8		1.97	0.39	-		-	-	11.2		1.99	0.394
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.97	0.244	-		-	-	ND		1.99	0.247
Perfluorotridecanoic Acid (PFTTrDA)	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	-		-	-	57.2		1.99	0.235

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 gray indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

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

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	(ug/l)	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	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	155.8		2.05	0.242	17.6		1.86	0.219	ND		1.84	0.218	ND		1.89	0.223

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 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:

(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-MW101-0.5				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:	0.0' - 0.5'				0.5' - 2.0'				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	1.2	J	0.977	0.041

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 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-MW101-0.5				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:	0.0' - 0.5'				0.5' - 2.0'				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-MW101-0.5				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:	0.0' - 0.5'				0.5' - 2.0'				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-MW101-0.5				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:	0.0' - 0.5'				0.5' - 2.0'				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.

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 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	0.1	-		-	-	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	161.4		2.02	0.239

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 th range fo 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			
		NY-UNRES ⁽¹⁾								
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM										
1,4-Dioxane	123-91-1	0.1	-		-	-	-		-	-
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.03	0.296	ND		1.05	0.301
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.03	0.185	ND		1.05	0.188
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.03	0.087	ND		1.05	0.089
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.03	0.208	ND		1.05	0.211
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.03	0.4	ND		1.05	0.041
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	ND		1.03	0.023	ND		1.05	0.024
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	ND		1.03	0.158	ND		1.05	0.16
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	ND		1.03	0.069	ND		1.05	0.07
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	ND		1.03	0.072	ND		1.05	0.073
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.03	0.141	ND		1.05	0.143
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	ND		1.03	0.047	ND		1.05	0.047
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	ND		1.03	0.062	ND		1.05	0.064
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	0.069	J	1.03	0.054	0.061	J	1.05	0.055
Perfluorononanoic Acid (PFNA)	375-95-1	NS	ND		1.03	0.077	ND		1.05	0.079
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.03	0.101	ND		1.05	0.103
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	0.356	J	1.03	0.134	0.32	J	1.05	0.136
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	ND		1.03	0.043	ND		1.05	0.044
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	ND		1.03	0.047	ND		1.05	0.048
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.03	0.056	ND		1.05	0.057
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.03	0.211	ND		1.05	0.214
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	ND		1.03	0.048	ND		1.05	0.049
PFOA/PFOS, Total		NS	0.356	J	1.03	0.043	0.32	J	1.05	0.044
GENERAL CHEMISTRY		(mg/kg)								
Solids, Total	NONE	NS	84.3		0.1	NA	85.5		0.1	NA

Notes:

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 gray indicate a RL or MDL above the AWQS.

Results that are shaded yellow and in bold indicate a concentration above the AWQS.

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 th range fo 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			
		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	0.058		0.01	0.005	0.031		0.011	0.0052
Tetrachloroethene	127-18-4	1.3	0.0013		0.00052	0.0002	0.00066		0.00054	0.00021
trans-1,2-Dichloroethene	156-60-5	0.19	0.0002	J	0.0016	0.00014	ND		0.0016	0.00015
Total VOCs			0.0595	-	-	-	0.03166	-	-	-

Notes:
(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 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 th range fo 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			
		NY-UNRES ⁽¹⁾								
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS										
Anthracene	120-12-7	100	0.069	J	0.12	0.037	ND		0.12	0.038
Benzo(a)anthracene	56-55-3	1	0.31		0.12	0.022	0.2		0.12	0.022
Benzo(a)pyrene	50-32-8	1	0.3		0.15	0.047	0.2		0.16	0.048
Benzo(b)fluoranthene	205-99-2	1	0.44		0.12	0.032	0.32		0.12	0.033
Benzo(ghi)perylene	191-24-2	100	0.23		0.15	0.022	0.16		0.16	0.023
Benzo(k)fluoranthene	207-08-9	0.8	0.16		0.12	0.031	0.083	J	0.12	0.031
Carbazole	86-74-8	NS	0.067	J	0.19	0.019	0.049	J	0.2	0.019
Chrysene	218-01-9	1	0.38		0.12	0.02	0.24		0.12	0.02
Dibenzo(a,h)anthracene	53-70-3	0.33	0.046	J	0.12	0.022	0.029	J	0.12	0.023
Fluoranthene	206-44-0	100	0.9		0.12	0.022	0.55		0.12	0.022
Fluorene	86-73-7	30	0.028	J	0.19	0.019	ND		0.2	0.019
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.24		0.15	0.027	0.17		0.16	0.027
Phenanthrene	85-01-8	100	0.47		0.12	0.023	0.26		0.12	0.024
Pyrene	129-00-0	100	0.69		0.12	0.019	0.43		0.12	0.02
Total SVOCs			4.33	-	-	-	2.691	-	-	-

Notes:

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 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 th range fo 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			
		NY-UNRES												
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	0.00186		0.00181	0.000419	0.00165	J	0.00185	0.000428	-	-	-	-
4,4'-DDT	50-29-3	0.0033	ND		0.0034	0.00146	ND		0.00347	0.00149	-	-	-	-
Endrin aldehyde	7421-93-4	NS	ND		0.00226	0.000793	0.207	E	0.00231	0.000809	0.206		0.00462	0.00162

Notes:

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 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 th range fo 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			
		NY-UNRES								
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS										
Aluminum, Total	7429-90-5	NS	7020		8.97	2.42	8980		9.03	2.44
Antimony, Total	7440-36-0	NS	0.789	J	4.48	0.341	0.777	J	4.52	0.343
Arsenic, Total	7440-38-2	13	6.4		0.897	0.186	5.14		0.903	0.188
Barium, Total	7440-39-3	350	48.1		0.897	0.156	64.5		0.903	0.157
Beryllium, Total	7440-41-7	7.2	0.224	J	0.448	0.03	0.253	J	0.452	0.03
Cadmium, Total	7440-43-9	2.5	0.735	J	0.897	0.088	0.641	J	0.903	0.089
Calcium, Total	7440-70-2	NS	55100	J	8.97	3.14	19600	J	9.03	3.16
Chromium, Total	7440-47-3	NS	7.5		0.897	0.086	9.22		0.903	0.087
Cobalt, Total	7440-48-4	NS	5.05		1.79	0.149	6.5		1.81	0.15
Copper, Total	7440-50-8	50	25.2	J	0.897	0.231	16.4	J	0.903	0.233
Iron, Total	7439-89-6	NS	21100		4.48	0.81	18600		4.52	0.816
Lead, Total	7439-92-1	63	20		4.48	0.24	21.9		4.52	0.242
Magnesium, Total	7439-95-4	NS	15100	J	8.97	1.38	13000	J	9.03	1.39
Manganese, Total	7439-96-5	1600	1250		0.897	0.143	891		0.903	0.144
Nickel, Total	7440-02-0	30	10.8		2.24	0.217	13.9		2.26	0.219
Potassium, Total	7440-09-7	NS	186	J	224	12.9	283		226	13
Silver, Total	7440-22-4	2	0.287	J	0.897	0.254	ND		0.903	0.256
Sodium, Total	7440-23-5	NS	73.9	J	179	2.82	87.5	J	181	2.84
Vanadium, Total	7440-62-2	NS	9.82		0.897	0.182	10.4		0.903	0.183
Zinc, Total	7440-66-6	109	88.2		4.48	0.263	77.6		4.52	0.265

Notes:

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 19 - AOC-6, AAG Hangars - PFAS and 1,4-D

		SAMPLE ID:	FIELD BLANK				HVRA-AAG-PW01				TRIP BLANK			
		LAB ID:	L1931312-06				L1931312-04				L1931312-05			
		COLLECTION DATE:	7/17/2019				7/17/2019				7/17/2019			
		SAMPLE MATRIX:	WATER				WATER				WATER			
		NY-AWQS ⁽¹⁾												
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM														
1,4-Dioxane	123-91-1	NS	-		-	-	-	-	-	-	-	-	-	-
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	1323		20	2.36	ND		1.8	0.222

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.

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E - Concentration of analyte exceeds th range fo the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

ND denotes Non Detect

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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 th range fo 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 th range fo 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 th range fo the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

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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			
			L1934423-05				L1934423-02				L1934423-01				L1934423-04				L1934423-03				L1934423-06				L1934423-09				L1934423-08				L1934423-07			
			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			
			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 (NEFOSAA)	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	26.5		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 (PFTriDA)	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	3381		50	5.9	2384		50	5.9	ND		1.86	0.219	ND		1.84	0.217	2107.5		10	1.18	13.1	J	1.82	0.215	1448.5		10	1.18	1367.7		10	1.18

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 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	(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		0.15	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 (PFTTrDA)	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		1.8	0.213	747.1		1.92	0.226

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 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	-		-	-	-		-	-
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			369.4	J	1.04	0.043	-		-	-	37.1	J	0.956	0.04

Notes:

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 ≥ 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:	0.5' - 1.0'				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:	0.5' - 1.0'				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:	0.5' - 1.0'				0.5' - 1.0'				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:	0.5' - 1.0'				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:	0.5' - 1.0'				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

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 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 (PFTTrDA)	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:

(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 th range fo 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 th range fo 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 th range fo 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 th range fo 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 MATRIX:	SURFACE WATER				SURFACE WATER				SURFACE WATER				SURFACE 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		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 (PFTTrDA)	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		1.82	0.215	218.8		1.79	0.211	1.2	J	2.08	0.246	0.9	J	1.78	0.21

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 th range fo 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			
		NY-UNRES ⁽¹⁾								
ANALYTE	CAS	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,4 DIOXANE BY 8270D-SIM										
1,4-Dioxane	123-91-1	0.1	ND		0.0412	0.0105	ND		0.0345	0.00881
PERFLUORINATED ALKYL ACIDS BY ISOTOPE DILUTION		(ug/kg)								
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NS	ND		1.29	0.37	ND		1.21	0.347
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	NS	ND		1.29	0.231	ND		1.21	0.217
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NS	ND		1.29	0.109	ND	J	1.21	0.102
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NS	ND		1.29	0.26	ND	J	1.21	0.244
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	ND		1.29	0.05	ND		1.21	0.047
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	0.245	J	1.29	0.029	0.342	J	1.21	0.027
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NS	0.345	J	1.29	0.197	ND		1.21	0.185
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	0.122	J	1.29	0.086	0.1	J	1.21	0.081
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	0.128	J	1.29	0.09	ND		1.21	0.085
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NS	ND		1.29	0.176	ND		1.21	0.165
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NS	0.16	J	1.29	0.058	0.215	J	1.21	0.055
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NS	2.27		1.29	0.078	0.208	J	1.21	0.073
Perfluorohexanoic Acid (PFHxA)	307-24-4	NS	0.342	J	1.29	0.068	0.218	J	1.21	0.064
Perfluorononanoic Acid (PFNA)	375-95-1	NS	0.147	J	1.29	0.097	0.206	J	1.21	0.091
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	ND		1.29	0.126	ND		1.21	0.118
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	NS	11.6		1.29	0.167	7.83		1.21	0.157
Perfluorooctanoic Acid (PFOA)	335-67-1	NS	0.213	J	1.29	0.054	0.212	J	1.21	0.051
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NS	0.422	J	1.29	0.059	0.737	J	1.21	0.056
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NS	ND		1.29	0.07	ND	J	1.21	0.065
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NS	ND		1.29	0.263	ND	J	1.21	0.247
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NS	0.243	J	1.29	0.06	0.132	J	1.21	0.057
PFOA/PFOS, Total		NS	11.8	J	1.29	0.054	8.0	J	1.21	0.051
GENERAL CHEMISTRY		(mg/kg)								
Solids, Total	NONE		72.9		0.1	0.1	82.3		0.1	0.1

Notes:

(1) NY-UNRES: New York NYCRR Part 375 New York Unrestricted use Criteria 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 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			2.4	J	1.95	0.23	3.4	J	1.84	0.218

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 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				8/12/2019									
		SAMPLE DEPTH:	FD of MW102-4.5				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0 - 11.0'				0.5' - 2.0'					
		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	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		
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 (PFTTrDA)	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	1.7	J		0.975	0.041	0.3	J		0.976	0.041	ND		1	0.042	1.8	J	1.47	0.062	ND		0.989	0.041	1.1	J	1.02	0.043

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 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				8/12/2019							
			SAMPLE DEPTH:	FD of MW102-4.5				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0' - 11.0'				0.5' - 2.0'			
			SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL							
			NY-UNRES ⁽¹⁾																												
			(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.

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

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 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.

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

NA denotes Not Analyzed

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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 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				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0' - 11.0'				0.5' - 2.0'				
		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				8/12/2019									
			SAMPLE DEPTH:		FD of MW102-4.5				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0' - 11.0'				0.5' - 2.0'					
			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				
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				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0' - 11.0'				0.5' - 2.0'			
		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				8/12/2019							
		SAMPLE DEPTH:	FD of MW102-4.5				0.0' - 0.5'				0.5' - 2.0'				4.5' - 5.5'				0.0' - 0.5'				10.0' - 11.0'				0.5' - 2.0'			
		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
TOTAL METALS																														
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				9/6/2019							
		SAMPLE MATRIX:	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			75.8		1.8	0.212	0.8	J	1.85	0.218	ND		1.84	0.217	43.2		1.91	0.225	32.5		1.84	0.218	ND		1.94	0.229	ND		1.79	0.211

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 th range fo 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 (PFTTrDA)	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	347.3		1.98	0.234	15.5		1.98	0.233	24.1		1.87	0.221	8.8		1.96	0.231	14.7		1.9	0.224	ND		1.8	0.213

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 th range fo the calibration curve and/or linear range of the instrument

NA denotes Not Analyzed

NS denotes No Standard

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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								
		SAMPLE MATRIX:	SEDIMENT				SEDIMENT				SEDIMENT				SEDIMENT				SEDIMENT								
		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		0.0934	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)																									
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	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	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 (NElFOSAA)	2991-50-6	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	7.7	J	1.25	0.053	8.3	J	3.53	0.148	2.5	J	1.34	0.056	0.5	J	1.2	0.05	ND		1.06	0.045	
GENERAL CHEMISTRY																											
Solids, Total	NONE		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:

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J - Estimated Value ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation or Reporting Limit (LOQ or RL)

E - Concentration of analyte exceeds th range fo 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 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			
		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
ANALYTE	CAS																																	
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			
		NY-AWQS								
		(ug/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
ANALYTE	CAS									
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:

(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)

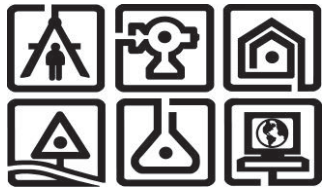
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

NA denotes Not Analyzed</

C.T. MALE ASSOCIATES

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
2		1	2.5	Asphalt ±0.25' Brown coarse SAND and fine to coarse GRAVEL, trace brick,	Fill
4					
6		2	3.5	±6.0' Brown medium and coarse SAND, firm, well sorted	Moist Saturated at 6.0' bgs
8					
10		3	5.0		Saturated
12					
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

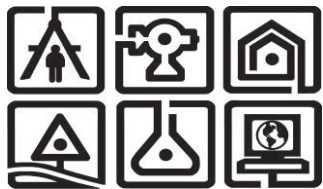
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	6.51	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
2		1	3.5	Topsoil <div>±1.5'</div>	Moist
4				Light Brown fine SAND and SILT, Some medium and coarse Sand, firm, poorly sorted <div>±3.0'</div>	Moist
6				Light Brown coarse SAND and fine to coarse GRAVEL, loose, poorly sorted	Moist
8		2	3.0		Moist
10					Saturated at 8.5' bgs
					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 <div>±10.5'</div>	Saturated
14					
16				End of Boring at 15.0' bgs <div>±15.0'</div>	MW installed to 15.0' bgs with 10' screen

DRILLING CONTRACTOR: NYEG Drilling

DIRECT-PUSH TYPE: Geoprobe 7720 DT

METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

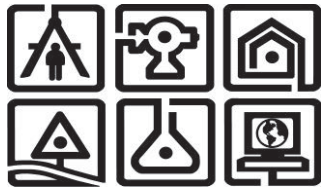
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	6.50	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
				Topsoil	Moist
2		1	4.0	Brown fine SAND and fine to coarse GRAVEL, little medium and coarse sand, firm, poorly sorted	Moist
4					
6					
8		2	4.5	Gray and Brown Till, primarily - SILT, Some fine to coarse Gravel, little fine sand, dense, poorly sorted	Wet from 4.0' to 4.5' bgs 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
10					Moist 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

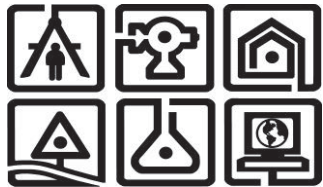
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	12.52	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
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					
26		6	1.5		Wet from 24.5' to 26.5' bgs
				Refusal at 26.5' bgs - End of Boring	MW installed to 20.0' bgs with 10' screen (Casing refusal at 20.0' bgs)
28					
30					
32					

DRILLING CONTRACTOR: NYEG Drilling

DIRECT-PUSH TYPE: Geoprobe 7720 DT

METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

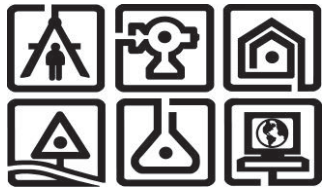
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	12.52	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
2		1	4.0	Topsoil ±1.0'	Moist
4				Gray Till, primarily - SILT and fine SAND, Some fine to coarse Gravel, dense, poorly sorted	Moist Till is moderately weathered
6		2	2.5		Moist Wet at 6.5' bgs
8					
10					Saturated at 10.0' bgs Till loosens significantly at 10.0' bgs
12		3	5.0		
14				Gray and Brown SILT, little fine sand and clay, varved, dense, well sorted ±14.0'	Wet at 14.0' bgs
				±15.0'	MW installed to 14.0' bgs with 10' screen
16				Refusal at 15.0' bgs - End of Boring	

DRILLING CONTRACTOR: NYEG Drilling

DIRECT-PUSH TYPE: Geoprobe 7720 DT

METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

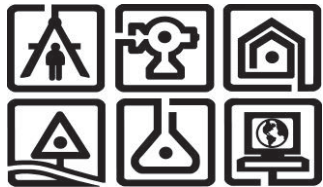
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	3.98	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
				Topsoil	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					
12		3	5.0	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
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

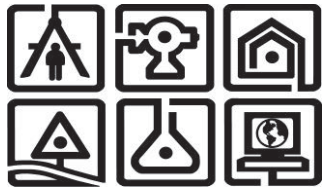
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	18.71	Top of Casing

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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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
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					
22		5	5.0	Gray SILT, Some Clay, trace fine sand, dense, low plasticity, well sorted	Wet Saturated at 21.0' bgs
24					
26					Saturated
28		6	5.0		
30					
32				End of Boring at 30.0' bgs	MW installed to 25.0' bgs with 10' screen (Casing refusal at 25.0' bgs)

DRILLING CONTRACTOR: NYEG Drilling

DIRECT-PUSH TYPE: Geoprobe 7720 DT

METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

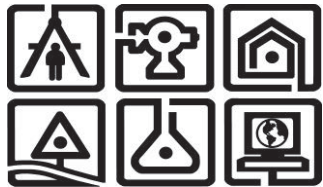
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	18.71	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
				Topsoil	Moist
2		1	4.5	Brown fine to coarse SAND and fine to coarse GRAVEL, firm, poorly sorted	Moist
4					
6				Brown Till, primarily - SILT and fine SAND, Some fine to coarse Gravel and Cobble, dense, poorly sorted	Moist
8		2	5.0		
10					
12				Gray Till, primarily - SILT, Some fine Gravel and fine Sand, little clay and coarse gravel, very dense, poorly sorted	Moist
14		3	5.0		
16		4	5.0		Moist

DRILLING CONTRACTOR: NYEG Drilling

DIRECT-PUSH TYPE: Geoprobe 7720 DT

METHOD OF SAMPLING: 5' Macro Core

GROUNDWATER LEVEL READINGS

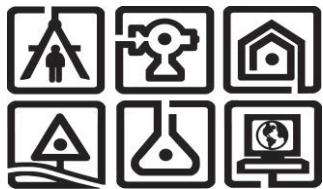
DATE	LEVEL	REFERENCE MEASURING POINT
8/7	DRY	Top of Casing

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			SAMPLE CLASSIFICATION	NOTES
	INTERVAL	NUMBER	RECOVERY (FT)		
18		4	5.0	Gray Till, primarily - SILT, Some fine Gravel and fine Sand, little clay and coarse gravel, very dense, poorly sorted	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

C.T. MALE ASSOCIATES

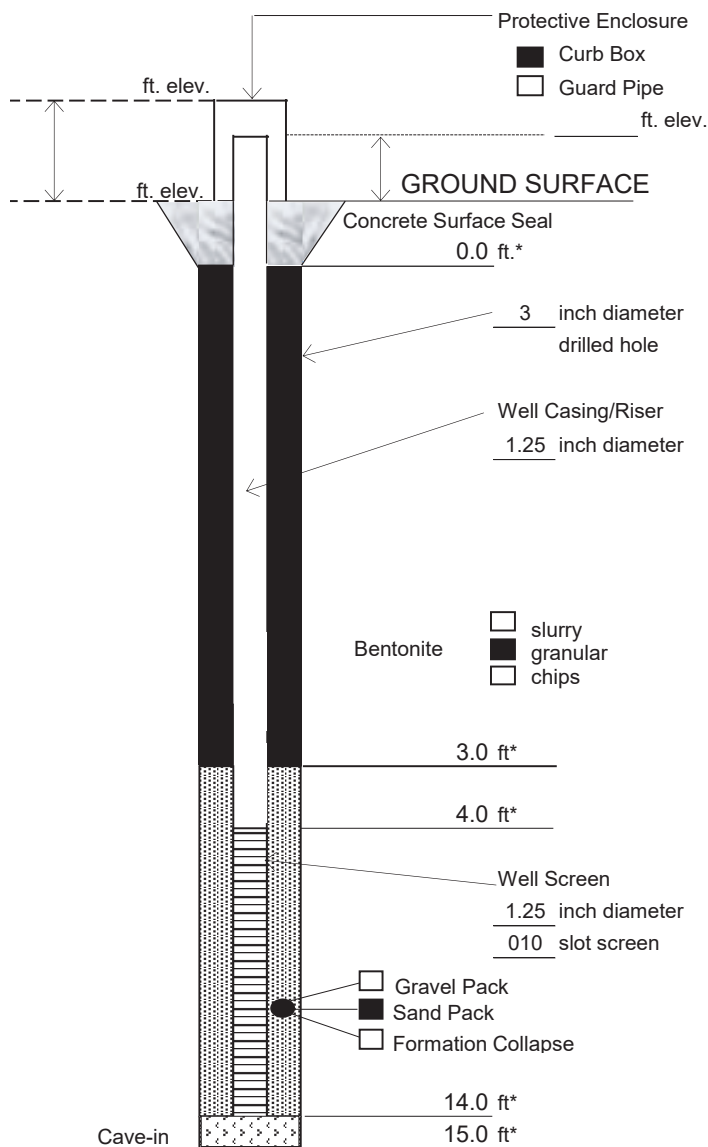
APPENDIX B
MONITORING WELL CONSTRUCTION LOGS



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:

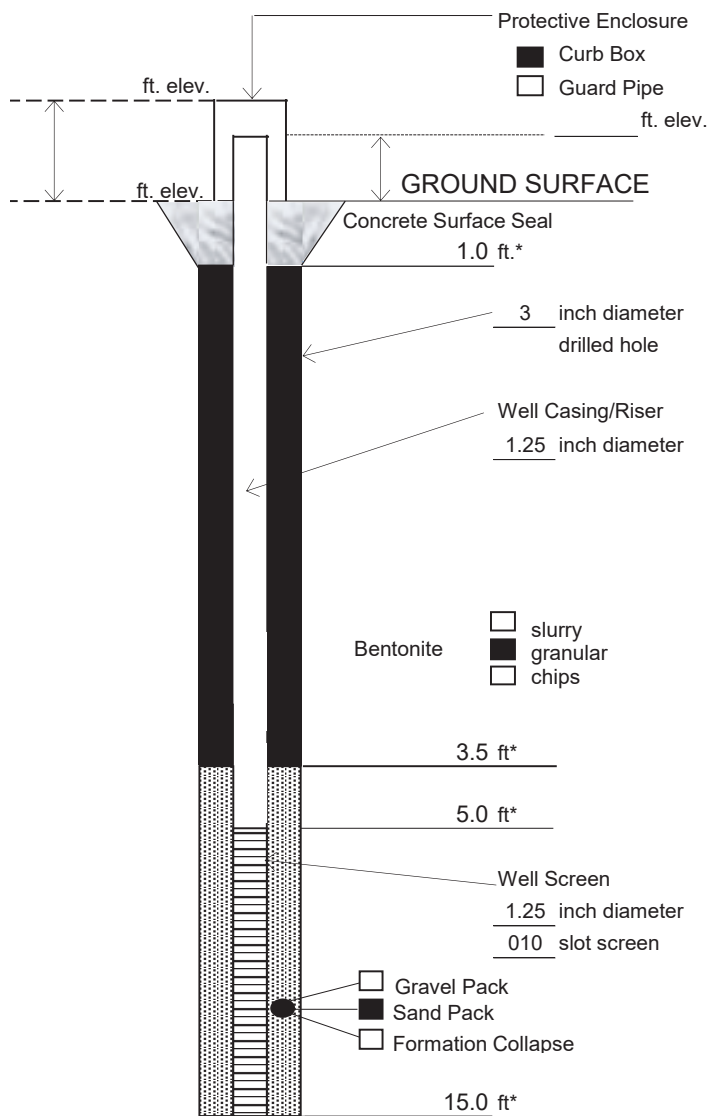
No grout used for monitoring well construction.

Notes:

Blacktop patched around roadbox following installation.



MONITORING WELL CONSTRUCTION LOG



* Depth below ground surface.

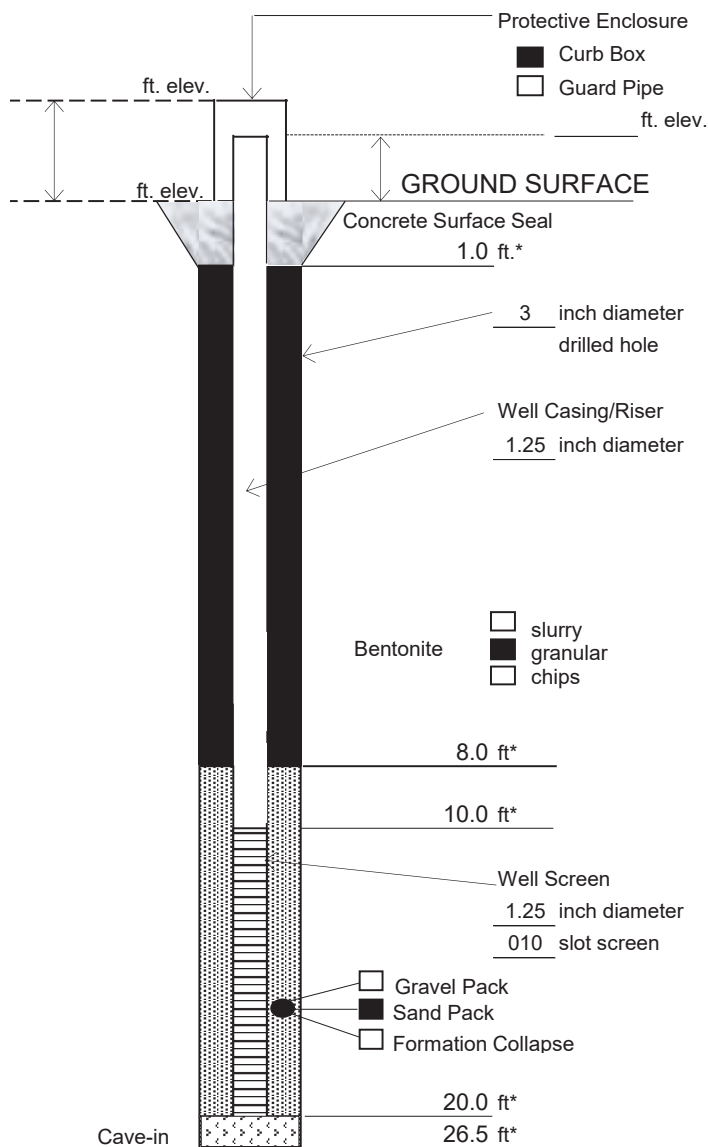
Notes:



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.

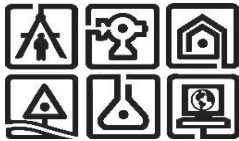
Notes:



MONITORING WELL CONSTRUCTION LOG



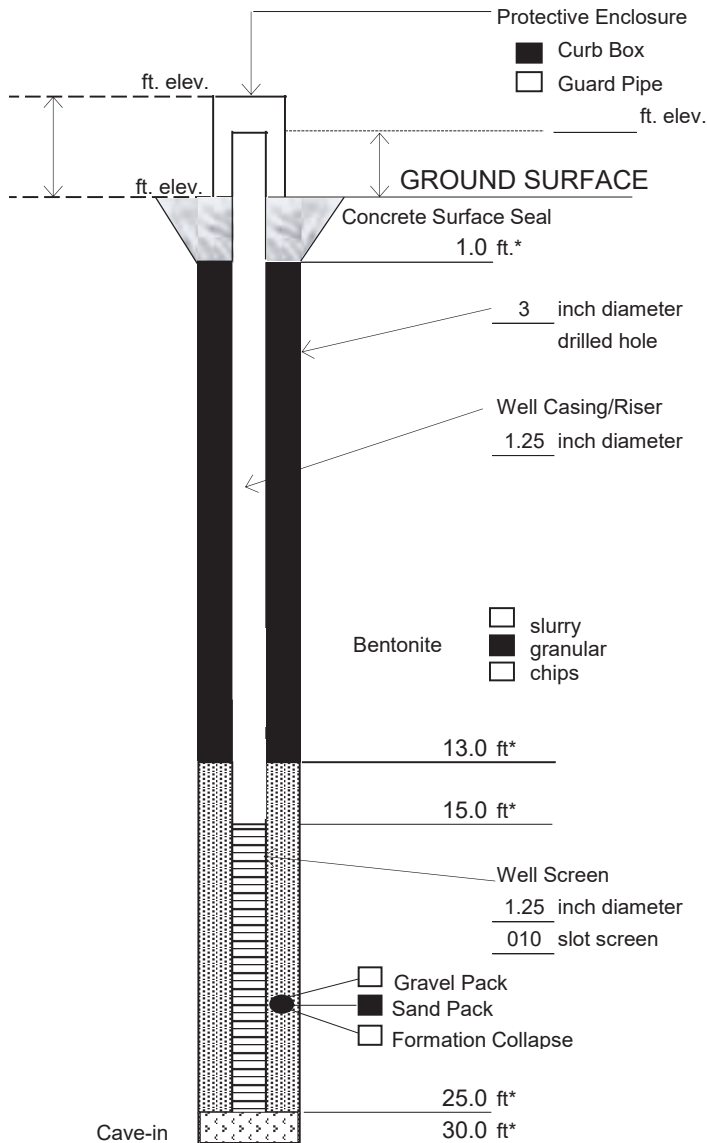
Notes:



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

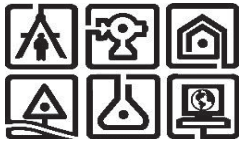
Materials Used:

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.

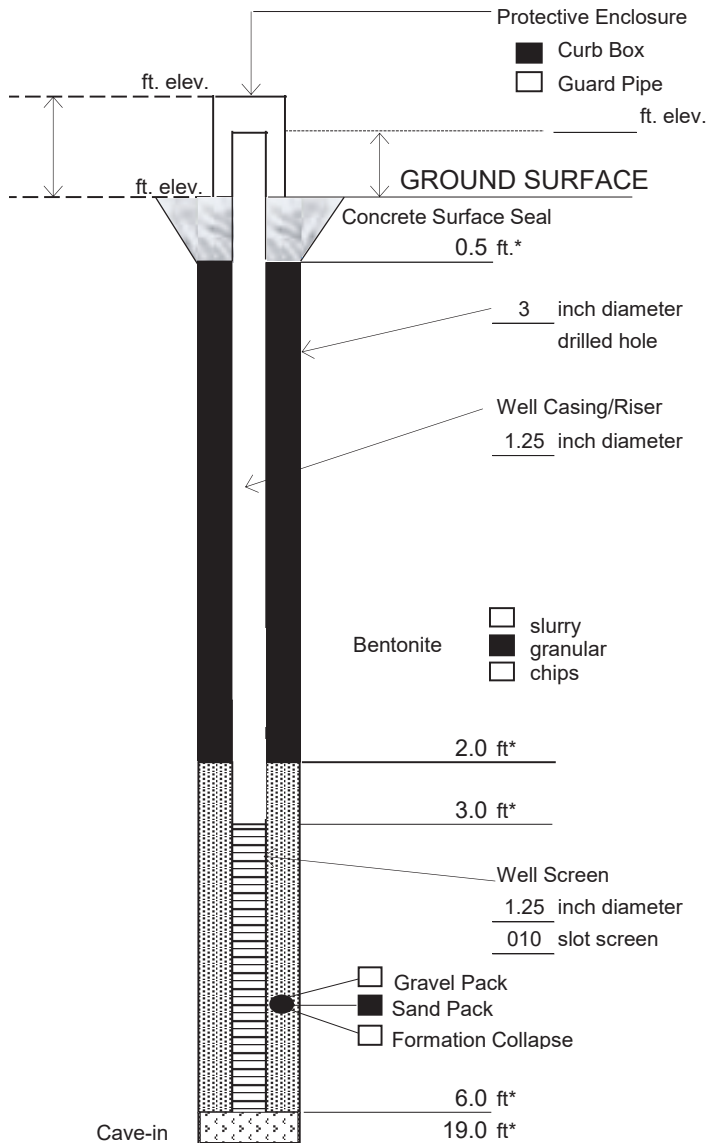
Notes:



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:

C.T. MALE ASSOCIATES

APPENDIX C
MONITORING WELL DEVELOPMENT
AND SAMPLING LOGS



Daily Calibration Record

Date: 8/7/19C.T.M. Project #: 18.8090Project: HV Airport SC InvestigationLocation: Wappingers Falls, NYTechnician Name(s): Pat KingAmbient Temperature: ~70°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: <u>FA03766</u> <u>Pro DSS</u>	<u>0840</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>4.07</u> / <u>7.03</u> / <u>10.12</u> Dissolved Oxygen: <u>98.9</u> % Sp. Conductivity: <u>6975</u> ORP: <u>22.5</u>	pH: <u>4.00</u> / <u>7.01</u> / <u>10.03</u> Dissolved Oxygen: <u>100.0</u> % Sp. Conductivity: <u>7000</u> ORP: <u>230.3</u>	pH: <u>4.00</u> / <u>7.01</u> / <u>10.03</u> Dissolved Oxygen: <u>99.9</u> % Sp. Conductivity: <u>7000</u> ORP: <u>230.3</u>
YSI: <u>FA01466</u>	<u>0920</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>3.99</u> / <u>6.97</u> / <u>9.96</u> Dissolved Oxygen: <u>97.8</u> % Sp. Conductivity: <u>6954</u> ORP: <u>224.8</u>	pH: <u>4.01</u> / <u>6.99</u> / <u>10.00</u> Dissolved Oxygen: <u>100.6</u> % Sp. Conductivity: <u>7000</u> ORP: <u>229.7</u>	pH: <u>4.01</u> / <u>6.99</u> / <u>10.00</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>229.7</u>
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	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 DEVELOPMENT LOG

Project Name: HV Airport SC Investigation

Date Started: 8/7/19

Project Number: 18.8090

Date Finished: 8/7/19

Field Parameters	Initial	1	2	3	4	5	6	7	8	9	10
Water Level	12.52	18.00	18.59								
Temperature (C)	19.4	17.6	19.6								
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	29.9	14.9								
Turbidity (NTU)	110	1194	669								

Monitoring Well: MW102

Total Depth: 19.35'

Water Column: 6.83'

One Well Volume: 0.44 gal.

Notes:

- Begin dev. @ 10:44 w/ per. pump
- Dry @ 10:50 - purged ~ 0.80 gal. - testing recharge
- Recover to 17.92 @ 11:12
- Purge dry @ 11:15 - total ~ 1.0 gal. purged, end development

Field Parameters	Initial	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	OK									

Monitoring Well: MW104

Total Depth: 21.30'

Water Column: 2.59'

One Well Volume: 0.17 gal.

Notes:

- Begin dev. @ 11:42 w/ per. pump
- Dry @ 11:49 - 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	Initial	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	Initial	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	5.70	6.90								
Conductivity (uS)	662	703	6900								
pH	6.56	6.56	6.77								
ORP (mV)	-7.6	19.4	-2.0								
Turbidity (NTU)	808	1000	604								

Monitoring Well: MW103

Total Depth: 13.80'

Water Column: 9.82'

One Well Volume: 0.63 gal.

Notes:

- Begin dev. @ 12:34 w/ per. 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 DEVELOPMENT LOG

Project Name: HV Airport SC Investigation

Date Started: 8/7/19

Project Number: 18.8090

Date Finished: 8/7/19

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Initial	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	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)	172.9	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

1.25' well

* Total Depth: 12.92

Water Column: 6.42

One Well Volume: 6.41 gal

10 volumes = 4.1 gal

Peristaltic Pump

YSI DSS Pro: FA03966

* Total Depth *
after development
↳ 13.42

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Initial	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	-	-	18.7	18.2
DO (mg/L)	2.33	1.05	1.14	1.26	-	-	1.29	-	-	1.39	1.54
Conductivity (uS)	870	880	849	790	-	-	782	-	-	786	766
pH	10.00	8.82	8.91	8.26	-	-	7.94	-	-	7.48	6.92
ORP (mV)	-7.0	-93.3	-94.3	-95.4	-	-	-71.7	-	-	-30.0	-25.2
Turbidity (NTU)	2141	2000	1571	2195	-	-	2024	-	-	2367	1336

Monitoring Well: MW-100

Notes: Start @ 1315

*Purge too fast to collect all findings

1.25' well

* Total Depth: 12.99

Water Column: 5.78

One Well Volume: 0.37 gal

10 volumes = 3.7 gal

Peristaltic Pump

YSI DSS Pro: FA03966

Field Parameters		Well Volumes and Corresponding Field Parameters Value									
	Initial	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									
	Initial	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:



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

Page 1 of 1

DATE: <u>8/7/19</u>	ON SITE: <u>07:50</u> OFF SITE: <u>16:00</u>	PROJECT NO.: <u>18,8090</u>
PROJECT NAME: <u>HVRA</u>		PROJECT LOCATION: <u>Wappingers Falls, NY</u>
SAMPLING PERSONNEL: <u>D. King</u>	SAMPLE TYPE: POET <input type="checkbox"/> POU <input type="checkbox"/> LTM <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	
SAMPLE ADDRESS: <u>Maintenance Building</u>		DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>
SITE CONTACT PRESENT? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		NAME: <u>Mike (HVRA Maintenance)</u>
PURGING SOURCE: <u>Sink (Not Bathroom)</u>	PURGE DURATION: <u>~25 min</u>	SAMPLE LOCATION(S): <u>Sink (Not Bathroom)</u>
INITIAL SAMPLING <input checked="" type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input type="checkbox"/>		
INFLUENT SAMPLE COLLECTION TIME: <u> </u>	MID POINT SAMPLE COLLECTION TIME: <u> </u>	EFFLUENT SAMPLE COLLECTION TIME: <u>* See COC *</u>
FLOW METER READING (GALLONS): <u> </u>		
NOTES: <ul style="list-style-type: none">• 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

Example Sample Locations:

POET vessel ports

Pressure tank

Kitchen Sink (aerator removed)

Outdoor Spigot

PFCs Sampling Checklist

Date: 8/8/19

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 repellent

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: [Signature] Time: _____



Daily Calibration Record

Date: 8/8/19C.T.M. Project #: 18.8090Project: HV Airport SC InvestigationLocation: Wappingers Falls, NYTechnician Name(s): D. King, C. BondiAmbient Temperature: ~75°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: <u>FA03966</u> <u>Pro DSS</u>	<u>0820</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>4.04 / 6.94 / 10.06</u> Dissolved Oxygen: <u>98.3</u> % Sp. Conductivity: <u>6564</u> ORP: <u>231.2</u>	pH: <u>4.00 / 7.01 / 10.03</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>232.7</u>	pH: <u>4.00 / 7.01 / 10.03</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>232.7</u>
YSI: <u>FA01466</u>	<u>0820</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>3.99 / 7.00 / 10.06</u> Dissolved Oxygen: <u>110.7</u> % Sp. Conductivity: <u>7006</u> ORP: <u>229.5</u>	pH: <u>4.00 / 7.01 / 10.03</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>232.4</u>	pH: <u>4.00 / 7.01 / 10.03</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>232.4</u>
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____	pH: _____ / _____ / _____ Dissolved Oxygen: _____ % Sp. Conductivity: _____ ORP: _____
YSI: _____		Yes <input type="checkbox"/> No <input type="checkbox"/>	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
 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: 8/8/19

PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.8090

PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: D. King

NOTES TAKEN BY: D. King

NOTES CHECKED BY: _____

MONITORING WELL ID#: MW102

WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 11.08 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 19.35 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 8.27 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.53 GALLONS

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	2.61	3.26			
Conductivity (uS)	± 3%	1150	1157	1160	1134	1126	1129	1139	1210			
pH (SU)	± 0.1	6.24	6.26	6.34	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: ~ 110 mL/min.

TIME STARTED: 10:11

TIME FINISHED: Dry @ 10:49

OBSERVATIONS: COLOR None
SHEEN None

ODOR None
OTHER _____

WATER LEVEL AT 80% RECOV.: _____ ft

WATER RECOVERY HEIGHT: _____ ft

SAMPLE COLLECTION TIME: _____

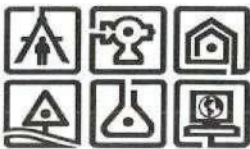
RECOVERY TIME IN MINUTES: _____

NOTES: Sample taken 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: D. King

NOTES TAKEN BY: D. King

NOTES CHECKED BY: _____

MONITORING WELL ID#: MW104

WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 17.91 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 21.30 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 3.39 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 6.22 GALLONS

2" = 0.16 GAL/LF 6" = 1.47 GAL/LF

Field Parameters	Stabilization	Time (since start of purging)											
Time (minutes)	-	Initial	<u>0.5</u>	<u>8</u>									
Water Level (ft)	± 0.00	<u>17.91</u>	<u>16.9</u>	<u>DRY</u>									
Temperature (C)	± 3%	<u>18.3</u>	<u>16.9</u>										
DO (mg/L)	±10% or < 0.5	<u>7.68</u>	<u>6.03</u>										
Conductivity (uS)	± 3%	<u>509</u>	<u>483.5</u>										
pH (SU)	± 0.1	<u>7.10</u>	<u>6.98</u>										
ORP (mV)	±10 mV	<u>146.5</u>	<u>128.5</u>										
Turbidity (NTU)	±10% or < 5	<u>7924</u>	<u>44.5</u>										

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: 110 mL/min.

TIME STARTED: 11:34

TIME FINISHED: 11:42

OBSERVATIONS: COLOR None
SHEEN None

ODOR 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: D. King

NOTES TAKEN BY: D. King

NOTES CHECKED BY: _____

MONITORING WELL ID#: MW103

WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 9.30 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 13.80 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 9.50 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.61 GALLONS

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	4.84	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	-12.8	1.8	11.7	16.2				
Turbidity (NTU)	±10% or < 5	40.9	45.2	30.5	21.0	14.7	15.4				

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: 110 mL/min.

TIME STARTED: 12:11

TIME FINISHED: DRY @ 12:40

OBSERVATIONS: COLOR None
SHEEN None

ODOR 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: 8/6/19

PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.8090

PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: Cliff Bond

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

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 13.43 FROM: TPVC

1" = 0.041 GAL/LF

3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 6.74 ft

1.25" = 0.064 GAL/LF

4" = 0.66 GAL/LF

WELL VOLUME: 0.43 GALLONS

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%	882	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	14.38	

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
SHEEN None

ODOR None
OTHER None

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/TA, 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 Pro : FA03966



WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):



Initial / 3 Vol.



Low-Flow



Sample ^{CB}

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

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 13.81 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 6.45 7.37 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.47 GALLONS

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	9.23
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	2.42	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	5.18	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	6.87	6.94	6.87	6.88	6.91	6.91	6.94	6.95		
ORP (mV)	30.1	48.48	51.5	28.7	45.9	43.8	57.9	54.9	50.5	53.1		
Turbidity (NTU)	90.63	48.70	89.70	187.7	118.1	293.96	146.72	9.45	268.29	745.32		

VOLUMES PURGED: 4.0 GALLONS AVG PURGE RATE: 160 ml/min

TIME STARTED: 0940 TIME FINISHED: 1120 Dry

OBSERVATIONS: COLOR Clear/cloudy
SHEEN None

ODOR 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:

H/VRA

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 repellent

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:

[Signature]

Time:

07:56



Daily Calibration Record

Date: 8/9/19
 Project: HV Airport SC Investigation
 Technician Name(s): D. King

C.T.M. Project #: 18.8090Location: Wappingers Falls, NYAmbient Temperature: ~70°F

Serial Number	Time	Temperature Accuracy	Pre-Cal Values	Calibration Values	Post-Cal or Bump Check Values
YSI: <u>FA01466</u>	<u>0715</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>4.04</u> / <u>7.01</u> / <u>10.07</u> Dissolved Oxygen: <u>98.8</u> % Sp. Conductivity: <u>7032</u> ORP: <u>237.9</u>	pH: <u>4.00</u> / <u>7.03</u> / <u>10.08</u> Dissolved Oxygen: <u>100.0</u> % Sp. Conductivity: <u>7000</u> ORP: <u>239.4</u>	pH: <u>4.00</u> / <u>7.05</u> / <u>10.08</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>—</u>
YSI: <u>FA03966</u> <u>ProDSS</u>	<u>0715</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	pH: <u>4.15</u> / <u>7.09</u> / <u>10.14</u> Dissolved Oxygen: <u>99.6</u> % Sp. Conductivity: <u>7330</u> ORP: <u>232.7</u>	pH: <u>4.00</u> / <u>7.03</u> / <u>10.08</u> Dissolved Oxygen: <u>100.0</u> % Sp. Conductivity: <u>7000</u> ORP: <u>238.9</u>	pH: <u>4.00</u> / <u>7.05</u> / <u>10.08</u> Dissolved Oxygen: <u>—</u> % Sp. Conductivity: <u>7000</u> ORP: <u>238.9</u>
YSI: <u> </u>		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>
YSI: <u> </u>		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>
YSI: <u> </u>		Yes <input type="checkbox"/> No <input type="checkbox"/>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>	pH: <u> </u> / <u> </u> / <u> </u> Dissolved Oxygen: <u> </u> % Sp. Conductivity: <u> </u> ORP: <u> </u>

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 NAME: HV Airport SC Investigation

PROJECT NO.: 18.809

PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: D. King

NOTES TAKEN BY: D. King

NOTES CHECKED BY: _____

MONITORING WELL ID#: MW102

WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 10.49 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 19.35 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 8.86 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.57 GALLONS

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	<u>10.49</u>											
Temperature (C)	± 3%	<u>16.6</u>											
DO (mg/L)	±10% or < 0.5	<u>5.24</u>											
Conductivity (uS)	± 3%	<u>1132</u>											
pH (SU)	± 0.1	<u>6.54</u>											
ORP (mV)	±10 mV	<u>119.4</u>											
Turbidity (NTU)	±10% or < 5	<u>61.2</u>											

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, 1,1-dioxane
← VOCs, SVOCs, PCBs, Pesticides

EQUIPMENT: PERISTALTIC PUMP NEW DISPOSABLE BAILER STAINLESS STEEL BAILER

BLADDER PUMP SUBMERSIBLE PUMP OTHER

SERIAL NOS: YSI FA01466 Turb. CTR



WELL LOW-FLOW PURGING LOG

Sampling Activity (check all that apply):

☐ Initial / 3 Vol.

☐ Low-Flow

☒ Sample

DATE: 8/19/19

PROJECT NAME: HV Airport SC Investigation

PROJECT NO.: 18.809

PROJECT LOCATION: Wappingers Falls, NY

SAMPLING PERSONNEL: D. King

NOTES TAKEN BY: D. King

NOTES CHECKED BY: _____

MONITORING WELL ID#: MW104

WELL CASING DIAMETER: 1.25 in.

DEPTH TO WATER (ft): 17.92 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 21.30 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 3.38 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.22 GALLONS

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	<u>17.92</u>											
Temperature (C)	± 3%	<u>17.5</u>											
DO (mg/L)	±10% or < 0.5	<u>6.58</u>											
Conductivity (uS)	± 3%	<u>483.5</u>											
pH (SU)	± 0.1	<u>7.19</u>											
ORP (mV)	±10 mV	<u>190.7</u>											
Turbidity (NTU)	±10% or < 5	<u>OR</u>											

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
SHEEN None

ODOR 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 FA01966 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

PROJECT NAME:

HV Airport SC Investigation

PROJECT LOCATION:

Wappingers Falls, NY

SAMPLING PERSONNEL:

D. King

NOTES TAKEN BY:

D. King

NOTES CHECKED BY:

MONITORING WELL ID#:

MW103

WELL CASING DIAMETER:

1.25 in.

DEPTH TO WATER (ft):

4.68 FROM: TPVC

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft):

13.80 FROM: TPVC

WATER COLUMN HEIGHT:

9.12 ft

1" = 0.041 GAL/LF

3" = 0.38 GAL/LF

WELL VOLUME:

0.58 GALLONS

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%	71.2											
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
SHEEN

None
None

ODOR
OTHER

None

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

CONVERSION FACTORS LINEAR FEET TO GALLONS

DEPTH TO BOTTOM (ft): 13.88 FROM: TPVC

1" = 0.041 GAL/LF 3" = 0.38 GAL/LF

WATER COLUMN HEIGHT: 7.39 ft

1.25" = 0.064 GAL/LF 4" = 0.66 GAL/LF

WELL VOLUME: 0.47 GALLONS

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	8.33	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
SHEEN None

ODOR Slight Petroleum odor
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-flared 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

C.T. MALE ASSOCIATES

APPENDIX D
DRINKING WATER WELL
SAMPLING LOGS



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

Page 1 of 1

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 <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
SAMPLE ADDRESS: 1581 Route 376		DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>	
SITE CONTACT PRESENT? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		NAME: Rob (worker)	
PURGING SOURCE: outside hose spigot	PURGE DURATION: (AH) 1320 10 min	SAMPLE LOCATION(S): outside spigot	
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>			
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

Example Sample Locations:

POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

Page 1 of 1

DATE: 09/04/2019		ON SITE: <u>1353</u> OFF SITE: <u>1415</u>	PROJECT NO.: <u>18.8090</u>
PROJECT NAME: <u>HVRA</u>			PROJECT LOCATION: <u>Wappingers Falls, NY</u>
SAMPLING PERSONNEL: Amanda Hens		SAMPLE TYPE: POET <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
SAMPLE ADDRESS: <u>7 Hackensack Heights Rd.</u>			DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>
SITE CONTACT PRESENT? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NAME: _____ <u>Left Property owner made/wrote note to sampler</u>			
PURGING SOURCE: <u>outside spigot</u>		PURGE DURATION: <u>10 min</u>	SAMPLE LOCATION(S): <u>outside spigot</u>
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>			
INFLUENT SAMPLE COLLECTION TIME:		MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:
FLOW METER READING (GALLONS): <u>NA</u>			
NOTES: • DEC official started purge at 1348 ended at 1358 sampled at 1400. • Resident left note, water 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

Example Sample Locations:

POET vessel ports

Pressure tank

Kitchen Sink (aerator removed)

Outdoor Spigot



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

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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 <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
SAMPLE ADDRESS: FTC Enterprises (Corno Pollution Control) 1610 Rt. 376		DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>	
SITE CONTACT PRESENT? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		NAME: Mike (property owner)	
PURGING SOURCE: outside spigot	PURGE DURATION: 10 min	SAMPLE LOCATION(S): outside spigot	
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>			
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 ~500ft 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

Example Sample Locations:

POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

Page 1 of 1

DATE: 09/04/2019		ON SITE: <u>1505</u> OFF SITE:	PROJECT NO.: <u>18,8090</u>
PROJECT NAME: <u>HVRA</u>		PROJECT LOCATION: <u>Wappingers Falls, NY</u>	
SAMPLING PERSONNEL: Amanda Hens		SAMPLE TYPE: POET <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
SAMPLE ADDRESS: <u>2 Hackensack Heights Rd.</u>		DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>	
SITE CONTACT PRESENT? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		NAME: <u>Homeowners parents</u>	
PURGING SOURCE: <u> </u>	PURGE DURATION: <u> </u>	SAMPLE LOCATION(S): <u> </u>	
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input type="checkbox"/>			
INFLUENT SAMPLE COLLECTION TIME:	MID POINT SAMPLE COLLECTION TIME:	EFFLUENT SAMPLE COLLECTION TIME:	
FLOW METER READING (GALLONS): <u>NA</u>			
NOTES: <u>Sample was not taken; miscommunication about meeting time. Mr. Chung was not home. Was material/items over crawl space 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 Lee and said he would either have someone sample it or call homeowner.</u>			

Key:

POET: Point Of Entry Treatment system
POU: Point Of Use Treatment system
LTM: Long Term Monitoring location

Example Sample Locations:

POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot



Residential Well Sampling Services Field Log

C.T. MALE ASSOCIATES

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 <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>			
SAMPLE ADDRESS: 1601 Rt. 376 Wappinger Falls NY 12590				DOUBLE PAIR OF NITRILE GLOVES USED <input checked="" type="checkbox"/>	
SITE CONTACT PRESENT?		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		NAME: Hurdle Bochner	
PURGING SOURCE: Spigot - back side of building		PURGE DURATION: 10 min		SAMPLE LOCATION(S): Outside Spigot	
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>					
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

Example Sample Locations:
POET vessel ports
Pressure tank
Kitchen Sink (aerator removed)
Outdoor Spigot



C.T. MALE ASSOCIATES

Residential Well Sampling Services Field Log

DATE: 09/06/19		ON SITE: 1545 OFF SITE: 1620	PROJECT NO.: 18-8090
PROJECT NAME: HURA		PROJECT LOCATION: 2 Hackensack Heights Rd.	
SAMPLING PERSONNEL: D. Lent		SAMPLE TYPE: POET <input type="checkbox"/> POU <input type="checkbox"/> LTM <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	
SAMPLE ADDRESS: 2 Hackensack Heights Rd		DOUBLE PAIR OF NITRILE GLOVES USED <input type="checkbox"/>	
SITE CONTACT PRESENT? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NAME: Melon Chung			
PURGING SOURCE: Rear Spigot at deck	PURGE DURATION: 10 Min	SAMPLE LOCATION(S): Outside Spigot	
INITIAL SAMPLING <input type="checkbox"/> ROUTINE SAMPLING <input type="checkbox"/> VESSEL CHANGE-OUT <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>			
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

C.T. MALE ASSOCIATES

APPENDIX E
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
Project Number: 18.8090

Lab Number: L1931312
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
Project Number: 18.8090

Lab Number: L1931312
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
Project Number: 18.8090

Lab Number: L1931312
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
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:

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
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:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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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
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:

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
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:

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
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:

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
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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
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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

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	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
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
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**Lab Number:** L1931312**Project Number:** 18.8090**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 H2O+Trizma	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-04B	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-05A	2 Plastic/1 Plastic/1 H2O Plastic	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1931312-06A	2 Plastic/1 Plastic/1 H2O Plastic	A1	NA		3.4	Y	Absent		A2-NY-537-ISOTOPE(14)

Project Name: HVRA
Project Number: 18.8090

Lab Number: L1931312
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
Project Number: 18.8090

Lab Number: L1931312
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
Project Number: 18.8090

Lab Number: L1931312
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 Perfluorinated 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 its 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.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**Revision **13**

Published Date: 7/30/2019 3:17:52 PM

Page 1 of 1

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.

7/16/19

L1931312

7/16/19	17:40
7/16	1945
7/16/19	23:30

 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 Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105		Page / of 1		Date Rec'd in Lab 7/18/19		ALPHA Job # 11931312																																																																																																																																																																																																				
		Project Information Project Name: <u>HVRA</u> Project Location: <u>AAG Hanger</u> Project # <u>18.8090</u> (Use Project name as Project #) <input type="checkbox"/>		Deliverables <input type="checkbox"/> ASP-A <input checked="" type="checkbox"/> ASP-B <input type="checkbox"/> EQulS (1 File) <input checked="" type="checkbox"/> EQulS (4 File) <input type="checkbox"/> Other		Billing Information <input type="checkbox"/> Same as Client Info PO #																																																																																																																																																																																																						
Client Information Client: <u>C.T. Male</u> Address: <u>12 Raymond Ave</u> <u>Roshekensie NY</u> Phone: <u>845 592 1162</u> Fax: <u>do lent @ ct male . com</u> Email: <u>do lent @ ct male . com</u>		Project Manager: <u>David Lent</u> ALPHAQuote #: Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: Rush (only if pre approved) <input type="checkbox"/> # of Days:		Regulatory Requirement <input type="checkbox"/> NY TOGS <input type="checkbox"/> NY Part 375 <input type="checkbox"/> AWQ Standards <input type="checkbox"/> NY CP-51 <input type="checkbox"/> NY Restricted Use <input type="checkbox"/> Other <input type="checkbox"/> NY Unrestricted Use <input type="checkbox"/> NYC Sewer Discharge		Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:																																																																																																																																																																																																						
These samples have been previously analyzed by Alpha <input type="checkbox"/> Other project specific requirements/comments: <u>Send results to do lent @ ct male . com</u> Please specify Metals or TAL.		ANALYSIS <div style="border: 1px solid black; padding: 5px; width: 100px; float: left; transform: rotate(-90deg); transform-origin: left top;"> ANALYSIS DEC 537 </div>		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do <input type="checkbox"/> Preservation <input type="checkbox"/> Lab to do (Please Specify below) Sample Specific Comments		Total Bottles																																																																																																																																																																																																						
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">ALPHA Lab ID (Lab Use Only)</th> <th rowspan="2">Sample ID</th> <th colspan="2">Collection</th> <th rowspan="2">Sample Matrix</th> <th rowspan="2">Sampler's Initials</th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> <th rowspan="2"></th> </tr> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>931312</td> <td>HVRA-AAG-PW01</td> <td>7/17/19</td> <td>10:00</td> <td>W</td> <td>DL</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>FB Field Blank</td> <td>7/17/19</td> <td>10:00</td> <td>W</td> <td>DL</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>FB Tr. p Blank</td> <td>7/17/19</td> <td>10:00</td> <td>W</td> <td>DL</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		ALPHA Lab ID (Lab Use Only)	Sample ID	Collection			Sample Matrix	Sampler's Initials														Date	Time	931312	HVRA-AAG-PW01	7/17/19	10:00	W	DL	X														FB Field Blank	7/17/19	10:00	W	DL	X														FB Tr. p Blank	7/17/19	10:00	W	DL	X																																																																																																																															Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 <u>P</u> Preservative <u>D</u>		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.)	
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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

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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: 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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
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

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
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

Date Collected: 07/24/19 11:50
Date Received: 07/24/19
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)	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
Project Number: 18.8090

Lab Number: L1932867
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
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

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
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

Date Collected: 07/24/19 12:10
Date Received: 07/24/19
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)	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
Project Number: 18.8090

Lab Number: L1932867
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
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

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
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

Date Collected: 07/24/19 12:30
Date Received: 07/24/19
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)	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
Project Number: 18.8090

Lab Number: L1932867
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
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

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
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

Date Collected: 07/24/19 13:15
Date Received: 07/24/19
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)	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
Project Number: 18.8090

Lab Number: L1932867
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
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

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
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

Date Collected: 07/24/19 13:30
Date Received: 07/24/19
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)	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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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:

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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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
Project Number: 18.8090

Lab Number: L1932867
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**Lab Number:** L1932867**Project Number:** 18.8090**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 (PFTTrDA)	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

Lab Number: L1932867

Project Number: 18.8090

Report Date: 08/02/19

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

Lab Number: L1932867

Project Number: 18.8090

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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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**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): 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
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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	Qualifier	MSD % Recovery	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**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

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
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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	Qualifier	MSD % Recovery	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
Project Number: 18.8090

Lab Number: L1932867
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

Date Collected: 07/24/19 11:50
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



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

Date Collected: 07/24/19 12:10
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	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

Date Collected: 07/24/19 12:30
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	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

Date Collected: 07/24/19 13:15
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	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

Date Collected: 07/24/19 13:30
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	87.6		%	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: L1932867-07
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
Project Number: 18.8090

Lab Number: L1932867
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



Project Name: HUDSON VALLEY REGIONAL AIRPORT**Project Number:** 18.8090**Lab Duplicate Analysis***Batch Quality Control***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**Lab Number:** L1932867**Project Number:** 18.8090**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)

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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 H2O Plastic	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)
L1932867-12A	2 Plastic/1 Plastic/1 H2O Plastic	A	NA		3.8	Y	Absent		A2-NY-537-ISOTOPE(14)

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Lab Number: L1932867
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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.
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



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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



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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 Perfluorinated 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 its 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.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**Revision **13**

Published Date: 7/30/2019 3:17:52 PM

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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		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 <u>1</u> of <u>2</u>		Date Rec'd in Lab <u>7/25/19</u>		ALPHA Job # <u>L1932867</u>	
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		Project Information Project Name: <u>Hudson Valley Regional Airport</u> Project Location: <u>Wappingers Falls, NY</u> Project # <u>18.5090</u> (Use Project name as Project #) <input type="checkbox"/>		Deliverables <input type="checkbox"/> ASP-A <input checked="" type="checkbox"/> ASP-B <input type="checkbox"/> EQUIS (1 File) <input type="checkbox"/> EQUIS (4 File) <input type="checkbox"/> Other		Billing Information <input type="checkbox"/> Same as Client Info PO #	
Client Information Client: <u>C.T. Male Associates</u> Address: <u>12 Raymond Avenue</u> <u>Poughkeepsie, NY 12603</u> Phone: <u>845-454-4400</u> Fax: Email: <u>d.lent@ctmale.com</u>		Project Manager: <u>Dave Lent</u> ALPHAQuote #: Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: Rush (only if pre approved) <input type="checkbox"/> # of Days:		Regulatory Requirement <input type="checkbox"/> NY TOGS <input type="checkbox"/> NY Part 375 <input type="checkbox"/> AWQ Standards <input type="checkbox"/> NY CP-51 <input type="checkbox"/> NY Restricted Use <input type="checkbox"/> Other <input type="checkbox"/> NY Unrestricted Use <input type="checkbox"/> NYC Sewer Discharge		Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:			
These samples have been previously analyzed by Alpha <input type="checkbox"/>				ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Total Bottles	
Other project specific requirements/comments: <u>Email results to d.lent@ctmale.com</u>				Please specify Metals or TAL:		PHs 1,4 dioxane Total Solids PHs		Sample Specific Comments	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials				
<u>932867-01</u>	<u>Outfall - 003 - S</u>	<u>07/24</u>	<u>1130</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-02</u>	<u>Outfall - 002 - S</u>	<u>07/24</u>	<u>1150</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-03</u>	<u>Outfall - 004 - S</u>	<u>07/24</u>	<u>1210</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-04</u>	<u>Outfall - 005 - S</u>	<u>07/24</u>	<u>1230</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-05</u>	<u>Outfall - 006 - S</u>	<u>07/24</u>	<u>1315</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-06</u>	<u>Outfall - 007 - S</u>	<u>07/24</u>	<u>1330</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-07</u>	<u>Fire Pond - 01 - S</u>	<u>07/24</u>	<u>1400</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-08</u>	<u>Fire Pond - 01 - W</u>	<u>07/24</u>	<u>1410</u>	<u>Water</u>	<u>DM</u>		<u>X</u>	<u>X</u>	<u>4</u>
<u>-09</u>	<u>Fire Pond - 02 - S</u>	<u>07/24</u>	<u>1435</u>	<u>Soil</u>	<u>DM</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>
<u>-10</u>	<u>Fire Pond - 02 - W</u>	<u>07/24</u>	<u>1435</u>	<u>Water</u>	<u>DM</u>		<u>X</u>	<u>X</u>	<u>4</u>
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 Preservative		P	A	P	P
		Relinquished By:		Date/Time		Received By:		Date/Time	
		<u>Brian N...</u>		<u>07/24/19</u>		<u>David...</u>		<u>7/24/19 1611</u>	
		<u>Ken W...</u>		<u>7/24/19 1900</u>		<u>...</u>		<u>7/25/19 01:16</u>	
		<u>...</u>		<u>7/24/19</u>		<u>ACM</u>		<u>7/25/19 1531</u>	
		<u>MSM</u>		<u>7/25/19 17:5</u>		<u>...</u>		<u>7/25/19 17:19</u>	

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.)

[illegible]



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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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).

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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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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 (pfd) (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 Perfluorooctanesulfonic 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
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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
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
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
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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:

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
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
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
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:

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
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
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
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
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
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:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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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
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
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
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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**Lab Number:** L1932869**Project Number:** 18.8090**Report Date:** 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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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**Lab Number:** L1932869**Project Number:** 18.8090**Report Date:** 08/07/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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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 (PFTTrDA)	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

Lab Number: L1932869

Project Number: 18.8090

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**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
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
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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		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
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 (PFTTrDA)	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
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
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
Project Number: 18.8090

Lab Number: L1932869
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**Lab Number:** L1932869**Project Number:** 18.8090**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
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
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
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:

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
Project Number: 18.8090

Lab Number: L1932869
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
Project Number: 18.8090

Lab Number: L1932869
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
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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

Lab Number: L1932869

Project Number: 18.8090

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

Project Name: HUDSON VALLEY REGIONAL AIRPORT

Project Number: 18.8090

Lab Duplicate Analysis

Batch Quality Control

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